# Hat Ranch Project

SCH# 2013112049

## Draft Environmental Impact Report

### Volume II of II (Appendices C-K)

Prepared for
the City of Manteca

**September 2022**

Prepared by

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# APPENDIX C

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

# Hat Ranch Project

**San Joaquin Valley Unified APCD Air District, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Elementary School | 675.00 | Student | 16.40 | 56,432.27 | 0 |
| Other Asphalt Surfaces | 46.60 | Acre | 46.60 | 2,029,896.00 | 0 |
| City Park | 16.20 | Acre | 16.20 | 705,672.00 | 0 |
| Single Family Housing | 739.00 | Dwelling Unit | 105.40 | 1,330,200.00 | 2344 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.7 | **Precipitation Freq (Days)** | 45 |
| **Climate Zone** | 2 | | | **Operational Year** | 2035 |
| **Utility Company** | Pacific Gas and Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 116.67 | **CH4 Intensity (lb/MWhr)** | 0.033 | **N2O Intensity (lb/MWhr)** | 0.004 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor adjusted per PG&E's compliance with RPS.

Land Use - Lot acrages adjusted according to site plan.

Construction Phase - Architectural coating phase timing adjusted to occur during building construction.

Vehicle Trips - Trip generation rates and trip lengths updated based on Fehr and Peers Traffic Analaysis.

Mobile Land Use Mitigation -

Water Mitigation - Water conservation strategy applied to reflect compliance with MWELO.

Area Mitigation - All electric landscaping equipment would be used, pursuant to AB 1346
Low VOC cleaning supplies required, per SJVAPCD Rule 4663

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstructionPhase | NumDays | 220.00 | 3,100.00 |
| tblLandUse | LotAcreage | 1.30 | 16.40 |
| tblLandUse | LotAcreage | 239.94 | 105.40 |
| tblProjectCharacteristics | CO2IntensityFactor | 203.98 | 116.67 |
| tblVehicleTrips | CC_TL | 7.30 | 10.85 |
| tblVehicleTrips | CC_TL | 7.30 | 10.85 |
| tblVehicleTrips | CC_TL | 7.30 | 10.85 |
| tblVehicleTrips | CNW_TL | 7.30 | 10.85 |
| tblVehicleTrips | CNW_TL | 7.30 | 10.85 |
| tblVehicleTrips | CNW_TL | 7.30 | 10.85 |
| tblVehicleTrips | CW_TL | 9.50 | 14.12 |
| tblVehicleTrips | CW_TL | 9.50 | 14.12 |
| tblVehicleTrips | CW_TL | 9.50 | 14.12 |
| tblVehicleTrips | DV_TP | 28.00 | 0.00 |
| tblVehicleTrips | DV_TP | 25.00 | 0.00 |
| tblVehicleTrips | DV_TP | 11.00 | 0.00 |
| tblVehicleTrips | HO_TL | 7.50 | 11.14 |
| tblVehicleTrips | HS_TL | 7.30 | 10.85 |
| tblVehicleTrips | HW_TL | 10.80 | 16.05 |
| tblVehicleTrips | PB_TP | 6.00 | 0.00 |
| tblVehicleTrips | PB_TP | 12.00 | 0.00 |
| tblVehicleTrips | PB_TP | 3.00 | 0.00 |
| tblVehicleTrips | PR_TP | 66.00 | 100.00 |
| tblVehicleTrips | PR_TP | 63.00 | 100.00 |
| tblVehicleTrips | PR_TP | 86.00 | 100.00 |
| tblVehicleTrips | ST_TR | 1.96 | 0.00 |
| tblVehicleTrips | ST_TR | 0.00 | 0.68 |
| tblVehicleTrips | ST_TR | 9.54 | 9.44 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | |
|---|---|---|---|
| tblVehicleTrips | SU_TR | 2.19 | 0.00 |
| tblVehicleTrips | SU_TR | 0.00 | 0.68 |
| tblVehicleTrips | SU_TR | 8.55 | 9.44 |
| tblVehicleTrips | WD_TR | 0.78 | 0.00 |
| tblVehicleTrips | WD_TR | 1.89 | 0.68 |
| tblWoodstoves | NumberCatalytic | 105.40 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 105.40 | 0.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction

**Unmitigated Construction**

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2022 | 0.2955 | 3.0571 | 2.0250 | 4.1100e-003 | 1.8512 | 0.1418 | 1.9930 | 0.7539 | 0.1304 | 0.8843 | 0.0000 | 361.4439 | 361.4439 | 0.1138 | 3.3000e-004 | 364.3876 |
| 2023 | 0.4356 | 4.4317 | 3.6774 | 8.1500e-003 | 1.2816 | 0.1830 | 1.4646 | 0.4808 | 0.1684 | 0.6492 | 0.0000 | 717.0823 | 717.0823 | 0.2270 | 4.9000e-004 | 722.9030 |
| 2024 | 0.4941 | 1.9962 | 3.0901 | 8.3900e-003 | 0.4095 | 0.0712 | 0.4807 | 0.1108 | 0.0660 | 0.1768 | 0.0000 | 771.7987 | 771.7987 | 0.0912 | 0.0430 | 786.8876 |
| 2025 | 1.9987 | 5.2375 | 8.0533 | 0.0323 | 2.2665 | 0.1044 | 2.3709 | 0.6132 | 0.0987 | 0.7119 | 0.0000 | 3,032.8057 | 3,032.8057 | 0.1150 | 0.2320 | 3,104.8086 |
| 2026 | 1.9561 | 5.1826 | 7.7485 | 0.0315 | 2.2665 | 0.1039 | 2.3704 | 0.6132 | 0.0983 | 0.7114 | 0.0000 | 2,976.7044 | 2,976.7044 | 0.1114 | 0.2258 | 3,046.7912 |
| 2027 | 1.9179 | 5.1307 | 7.4703 | 0.0309 | 2.2665 | 0.1033 | 2.3698 | 0.6132 | 0.0977 | 0.7109 | 0.0000 | 2,920.5272 | 2,920.5272 | 0.1083 | 0.2199 | 2,988.7539 |
| 2028 | 1.8759 | 5.0698 | 7.2127 | 0.0301 | 2.2578 | 0.1023 | 2.3601 | 0.6108 | 0.0968 | 0.7076 | 0.0000 | 2,857.9013 | 2,857.9013 | 0.1052 | 0.2136 | 2,924.1711 |
| 2029 | 1.8505 | 5.0501 | 7.0424 | 0.0296 | 2.2665 | 0.1021 | 2.3686 | 0.6132 | 0.0966 | 0.7097 | 0.0000 | 2,820.9496 | 2,820.9496 | 0.1032 | 0.2093 | 2,885.8979 |
| 2030 | 1.8076 | 4.3894 | 6.8847 | 0.0296 | 2.2665 | 0.0479 | 2.3144 | 0.6132 | 0.0466 | 0.6597 | 0.0000 | 2,818.5433 | 2,818.5433 | 0.0433 | 0.2048 | 2,880.6470 |
| 2031 | 1.7785 | 4.3647 | 6.7406 | 0.0291 | 2.2665 | 0.0474 | 2.3139 | 0.6132 | 0.0461 | 0.6593 | 0.0000 | 2,780.5180 | 2,780.5180 | 0.0415 | 0.2008 | 2,841.3987 |
| 2032 | 1.7602 | 4.3610 | 6.6462 | 0.0288 | 2.2752 | 0.0471 | 2.3223 | 0.6155 | 0.0459 | 0.6614 | 0.0000 | 2,757.6163 | 2,757.6163 | 0.0401 | 0.1982 | 2,817.6724 |
| 2033 | 1.7244 | 4.3112 | 6.4942 | 0.0283 | 2.2578 | 0.0464 | 2.3042 | 0.6108 | 0.0451 | 0.6559 | 0.0000 | 2,707.2561 | 2,707.2561 | 0.0385 | 0.1937 | 2,765.9462 |
| 2034 | 1.7048 | 4.2953 | 6.4059 | 0.0279 | 2.2578 | 0.0460 | 2.3038 | 0.6108 | 0.0447 | 0.6556 | 0.0000 | 2,681.1209 | 2,681.1209 | 0.0373 | 0.1911 | 2,739.0081 |
| 2035 | 1.6800 | 4.1828 | 6.3497 | 0.0277 | 2.2665 | 0.0369 | 2.3034 | 0.6132 | 0.0357 | 0.6488 | 0.0000 | 2,668.4473 | 2,668.4473 | 0.0353 | 0.1896 | 2,725.8294 |
| 2036 | 1.2299 | 2.9537 | 4.5056 | 0.0197 | 1.6094 | 0.0261 | 1.6354 | 0.4353 | 0.0252 | 0.4606 | 0.0000 | 1,890.0423 | 1,890.0423 | 0.0250 | 0.1338 | 1,930.5471 |
| **Maximum** | **1.9987** | **5.2375** | **8.0533** | **0.0323** | **2.2752** | **0.1830** | **2.3709** | **0.7539** | **0.1684** | **0.8843** | **0.0000** | **3,032.8057** | **3,032.8057** | **0.2270** | **0.2320** | **3,104.8086** |

## 2.1 Overall Construction

**Mitigated Construction**

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2022 | 0.2955 | 3.0571 | 2.0250 | 4.1100e-003 | 1.8512 | 0.1418 | 1.9930 | 0.7539 | 0.1304 | 0.8843 | 0.0000 | 361.4434 | 361.4434 | 0.1138 | 3.3000e-004 | 364.3872 |
| 2023 | 0.4356 | 4.4317 | 3.6774 | 8.1500e-003 | 1.2816 | 0.1830 | 1.4646 | 0.4808 | 0.1684 | 0.6492 | 0.0000 | 717.0814 | 717.0814 | 0.2270 | 4.9000e-004 | 722.9022 |
| 2024 | 0.4941 | 1.9962 | 3.0901 | 8.3900e-003 | 0.4095 | 0.0712 | 0.4807 | 0.1108 | 0.0660 | 0.1768 | 0.0000 | 771.7984 | 771.7984 | 0.0912 | 0.0430 | 786.8872 |
| 2025 | 1.9987 | 5.2374 | 8.0533 | 0.0323 | 2.2665 | 0.1044 | 2.3709 | 0.6132 | 0.0987 | 0.7119 | 0.0000 | 3,032.8053 | 3,032.8053 | 0.1150 | 0.2320 | 3,104.8082 |
| 2026 | 1.9561 | 5.1826 | 7.7485 | 0.0315 | 2.2665 | 0.1039 | 2.3704 | 0.6132 | 0.0983 | 0.7114 | 0.0000 | 2,976.7040 | 2,976.7040 | 0.1114 | 0.2258 | 3,046.7908 |
| 2027 | 1.9179 | 5.1307 | 7.4703 | 0.0309 | 2.2665 | 0.1033 | 2.3698 | 0.6132 | 0.0977 | 0.7109 | 0.0000 | 2,920.5268 | 2,920.5268 | 0.1083 | 0.2199 | 2,988.7535 |
| 2028 | 1.8759 | 5.0698 | 7.2127 | 0.0301 | 2.2578 | 0.1023 | 2.3601 | 0.6108 | 0.0968 | 0.7076 | 0.0000 | 2,857.9009 | 2,857.9009 | 0.1052 | 0.2136 | 2,924.1707 |
| 2029 | 1.8505 | 5.0501 | 7.0424 | 0.0296 | 2.2665 | 0.1021 | 2.3686 | 0.6132 | 0.0966 | 0.7097 | 0.0000 | 2,820.9492 | 2,820.9492 | 0.1032 | 0.2093 | 2,885.8975 |
| 2030 | 1.8076 | 4.3894 | 6.8847 | 0.0296 | 2.2665 | 0.0479 | 2.3144 | 0.6132 | 0.0466 | 0.6597 | 0.0000 | 2,818.5429 | 2,818.5429 | 0.0433 | 0.2048 | 2,880.6465 |
| 2031 | 1.7785 | 4.3647 | 6.7406 | 0.0291 | 2.2665 | 0.0474 | 2.3139 | 0.6132 | 0.0461 | 0.6593 | 0.0000 | 2,780.5176 | 2,780.5176 | 0.0415 | 0.2008 | 2,841.3982 |
| 2032 | 1.7602 | 4.3610 | 6.6462 | 0.0288 | 2.2752 | 0.0471 | 2.3223 | 0.6155 | 0.0459 | 0.6614 | 0.0000 | 2,757.6159 | 2,757.6159 | 0.0401 | 0.1982 | 2,817.6719 |
| 2033 | 1.7244 | 4.3112 | 6.4942 | 0.0283 | 2.2578 | 0.0464 | 2.3042 | 0.6108 | 0.0451 | 0.6559 | 0.0000 | 2,707.2556 | 2,707.2556 | 0.0385 | 0.1937 | 2,765.9458 |
| 2034 | 1.7048 | 4.2953 | 6.4059 | 0.0279 | 2.2578 | 0.0460 | 2.3038 | 0.6108 | 0.0447 | 0.6556 | 0.0000 | 2,681.1204 | 2,681.1204 | 0.0373 | 0.1911 | 2,739.0076 |
| 2035 | 1.6800 | 4.1828 | 6.3497 | 0.0277 | 2.2665 | 0.0369 | 2.3034 | 0.6132 | 0.0357 | 0.6488 | 0.0000 | 2,668.4469 | 2,668.4469 | 0.0353 | 0.1896 | 2,725.8289 |
| 2036 | 1.2299 | 2.9537 | 4.5056 | 0.0197 | 1.6094 | 0.0261 | 1.6354 | 0.4353 | 0.0252 | 0.4606 | 0.0000 | 1,890.0420 | 1,890.0420 | 0.0250 | 0.1338 | 1,930.5467 |
| **Maximum** | **1.9987** | **5.2374** | **8.0533** | **0.0323** | **2.2752** | **0.1830** | **2.3709** | **0.7539** | **0.1684** | **0.8843** | **0.0000** | **3,032.8053** | **3,032.8053** | **0.2270** | **0.2320** | **3,104.8082** |

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## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| 1 | 5-1-2022 | 7-31-2022 | 1.1949 | 1.1949 |
| 2 | 8-1-2022 | 10-31-2022 | 1.2327 | 1.2327 |
| 3 | 11-1-2022 | 1-31-2023 | 1.3480 | 1.3480 |
| 4 | 2-1-2023 | 4-30-2023 | 1.2062 | 1.2062 |
| 5 | 5-1-2023 | 7-31-2023 | 1.2469 | 1.2469 |
| 6 | 8-1-2023 | 10-31-2023 | 1.2469 | 1.2469 |
| 7 | 11-1-2023 | 1-31-2024 | 0.8663 | 0.8663 |
| 8 | 2-1-2024 | 4-30-2024 | 0.3582 | 0.3582 |
| 9 | 5-1-2024 | 7-31-2024 | 0.3662 | 0.3662 |
| 10 | 8-1-2024 | 10-31-2024 | 0.4431 | 0.4431 |
| 11 | 11-1-2024 | 1-31-2025 | 1.8659 | 1.8659 |
| 12 | 2-1-2025 | 4-30-2025 | 1.7780 | 1.7780 |
| 13 | 5-1-2025 | 7-31-2025 | 1.8053 | 1.8053 |
| 14 | 8-1-2025 | 10-31-2025 | 1.8219 | 1.8219 |
| 15 | 11-1-2025 | 1-31-2026 | 1.8458 | 1.8458 |
| 16 | 2-1-2026 | 4-30-2026 | 1.7532 | 1.7532 |
| 17 | 5-1-2026 | 7-31-2026 | 1.7798 | 1.7798 |
| 18 | 8-1-2026 | 10-31-2026 | 1.7963 | 1.7963 |
| 19 | 11-1-2026 | 1-31-2027 | 1.8207 | 1.8207 |
| 20 | 2-1-2027 | 4-30-2027 | 1.7303 | 1.7303 |
| 21 | 5-1-2027 | 7-31-2027 | 1.7564 | 1.7564 |
| 22 | 8-1-2027 | 10-31-2027 | 1.7728 | 1.7728 |
| 23 | 11-1-2027 | 1-31-2028 | 1.7982 | 1.7982 |
| 24 | 2-1-2028 | 4-30-2028 | 1.7303 | 1.7303 |
| 25 | 5-1-2028 | 7-31-2028 | 1.7365 | 1.7365 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | | |
|---|---|---|---|---|
| **26** | **8-1-2028** | **10-31-2028** | 1.7528 | 1.7528 |
| **27** | **11-1-2028** | **1-31-2029** | 1.7786 | 1.7786 |
| **28** | **2-1-2029** | **4-30-2029** | 1.6927 | 1.6927 |
| **29** | **5-1-2029** | **7-31-2029** | 1.7177 | 1.7177 |
| **30** | **8-1-2029** | **10-31-2029** | 1.7340 | 1.7340 |
| **31** | **11-1-2029** | **1-31-2030** | 1.7061 | 1.7061 |
| **32** | **2-1-2030** | **4-30-2030** | 1.5206 | 1.5206 |
| **33** | **5-1-2030** | **7-31-2030** | 1.5398 | 1.5398 |
| **34** | **8-1-2030** | **10-31-2030** | 1.5561 | 1.5561 |
| **35** | **11-1-2030** | **1-31-2031** | 1.5834 | 1.5834 |
| **36** | **2-1-2031** | **4-30-2031** | 1.5068 | 1.5068 |
| **37** | **5-1-2031** | **7-31-2031** | 1.5254 | 1.5254 |
| **38** | **8-1-2031** | **10-31-2031** | 1.5418 | 1.5418 |
| **39** | **11-1-2031** | **1-31-2032** | 1.5700 | 1.5700 |
| **40** | **2-1-2032** | **4-30-2032** | 1.5122 | 1.5122 |
| **41** | **5-1-2032** | **7-31-2032** | 1.5133 | 1.5133 |
| **42** | **8-1-2032** | **10-31-2032** | 1.5297 | 1.5297 |
| **43** | **11-1-2032** | **1-31-2033** | 1.5586 | 1.5586 |
| **44** | **2-1-2033** | **4-30-2033** | 1.4852 | 1.4852 |
| **45** | **5-1-2033** | **7-31-2033** | 1.5027 | 1.5027 |
| **46** | **8-1-2033** | **10-31-2033** | 1.5193 | 1.5193 |
| **47** | **11-1-2033** | **1-31-2034** | 1.5487 | 1.5487 |
| **48** | **2-1-2034** | **4-30-2034** | 1.4761 | 1.4761 |
| **49** | **5-1-2034** | **7-31-2034** | 1.4931 | 1.4931 |
| **50** | **8-1-2034** | **10-31-2034** | 1.5098 | 1.5098 |
| **51** | **11-1-2034** | **1-31-2035** | 1.5289 | 1.5289 |
| **52** | **2-1-2035** | **4-30-2035** | 1.4367 | 1.4367 |
| **53** | **5-1-2035** | **7-31-2035** | 1.4521 | 1.4521 |
| **54** | **8-1-2035** | **10-31-2035** | 1.4689 | 1.4689 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | | |
|---|---|---|---|---|
| **55** | **11-1-2035** | **1-31-2036** | 1.5020 | 1.5020 |
| **56** | **2-1-2036** | **4-30-2036** | 1.4531 | 1.4531 |
| **57** | **5-1-2036** | **7-31-2036** | 1.4521 | 1.4521 |
| **58** | **8-1-2036** | **9-30-2036** | 0.7294 | 0.7294 |
| | | **Highest** | 1.8659 | 1.8659 |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 7.0799 | 0.3396 | 5.5922 | 2.0500e-003 | | 0.0528 | 0.0528 | | 0.0528 | 0.0528 | 0.0000 | 329.1166 | 329.1166 | 0.0147 | 5.8700e-003 | 331.2332 |
| Energy | 0.0971 | 0.8316 | 0.3646 | 5.3000e-003 | | 0.0671 | 0.0671 | | 0.0671 | 0.0671 | 0.0000 | 1,286.7438 | 1,286.7438 | 0.1105 | 0.0288 | 1,298.0831 |
| Mobile | 3.2705 | 6.4992 | 37.7522 | 0.1050 | 13.4790 | 0.0751 | 13.5540 | 3.6029 | 0.0706 | 3.6736 | 0.0000 | 10,438.6054 | 10,438.6054 | 0.4033 | 0.4921 | 10,595.3399 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 204.3124 | 0.0000 | 204.3124 | 12.0745 | 0.0000 | 506.1754 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 15.7945 | 24.2331 | 40.0276 | 1.6291 | 0.0391 | 92.4177 |
| **Total** | **10.4475** | **7.6704** | **43.7091** | **0.1124** | **13.4790** | **0.1950** | **13.6739** | **3.6029** | **0.1905** | **3.7935** | **220.1070** | **12,078.6988** | **12,298.8058** | **14.2322** | **0.5659** | **12,823.2493** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 2.2 Overall Operational

**Mitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 6.5979 | 0.3267 | 4.2757 | 1.9500e-003 | | 0.0451 | 0.0451 | | 0.0451 | 0.0451 | 0.0000 | 326.4194 | 326.4194 | 0.0106 | 5.8700e-003 | 328.4339 |
| Energy | 0.0971 | 0.8316 | 0.3646 | 5.3000e-003 | | 0.0671 | 0.0671 | | 0.0671 | 0.0671 | 0.0000 | 1,286.7438 | 1,286.7438 | 0.1105 | 0.0288 | 1,298.0831 |
| Mobile | 3.2290 | 6.3911 | 37.1145 | 0.1030 | 13.2094 | 0.0736 | 13.2830 | 3.5309 | 0.0693 | 3.6001 | 0.0000 | 10,233.7299 | 10,233.7299 | 0.3969 | 0.4835 | 10,387.7350 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 204.3124 | 0.0000 | 204.3124 | 12.0745 | 0.0000 | 506.1754 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 15.7945 | 22.2377 | 38.0322 | 1.6285 | 0.0391 | 90.3878 |
| **Total** | **9.9240** | **7.5493** | **41.7549** | **0.1102** | **13.2094** | **0.1858** | **13.3952** | **3.5309** | **0.1815** | **3.7123** | **220.1070** | **11,869.1307** | **12,089.2377** | **14.2211** | **0.5572** | **12,610.8152** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **5.01** | **1.58** | **4.47** | **1.92** | **2.00** | **4.70** | **2.04** | **2.00** | **4.77** | **2.14** | **0.00** | **1.74** | **1.70** | **0.08** | **1.54** | **1.66** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 5/1/2022 | 10/14/2022 | 5 | 120 | |
| 2 | Grading | Grading | 10/15/2022 | 12/22/2023 | 5 | 310 | |
| 3 | Paving | Paving | 12/23/2023 | 10/25/2024 | 5 | 220 | |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 4 | Building Construction | Building Construction | 10/26/2024 | 9/12/2036 | 5 | 3100 | |
| 5 | Architectural Coating | Architectural Coating | 11/9/2024 | 9/26/2036 | 5 | 3100 | |

**Acres of Grading (Site Preparation Phase): 180**

**Acres of Grading (Grading Phase): 930**

**Acres of Paving: 46.6**

**Residential Indoor: 2,693,655; Residential Outdoor: 897,885; Non-Residential Indoor: 84,648; Non-Residential Outdoor: 28,216; Striped Parking Area: 121,794 (Architectural Coating – sqft)**

## OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

## Trips and VMT

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 1,439.00 | 537.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 288.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Site Preparation - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 1.1794 | 0.0000 | 1.1794 | 0.6062 | 0.0000 | 0.6062 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.1902 | 1.9850 | 1.1819 | 2.2800e-003 | | 0.0968 | 0.0968 | | 0.0890 | 0.0890 | 0.0000 | 200.6363 | 200.6363 | 0.0649 | 0.0000 | 202.2586 |
| **Total** | **0.1902** | **1.9850** | **1.1819** | **2.2800e-003** | **1.1794** | **0.0968** | **1.2762** | **0.6062** | **0.0890** | **0.6952** | **0.0000** | **200.6363** | **200.6363** | **0.0649** | **0.0000** | **202.2586** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.2 Site Preparation - 2022

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 3.7000e-003 | 2.6000e-003 | 0.0295 | 8.0000e-005 | 8.6300e-003 | 5.0000e-005 | 8.6800e-003 | 2.2900e-003 | 4.0000e-005 | 2.3400e-003 | 0.0000 | 7.1806 | 7.1806 | 2.4000e-004 | 2.2000e-004 | 7.2528 |
| **Total** | **3.7000e-003** | **2.6000e-003** | **0.0295** | **8.0000e-005** | **8.6300e-003** | **5.0000e-005** | **8.6800e-003** | **2.2900e-003** | **4.0000e-005** | **2.3400e-003** | **0.0000** | **7.1806** | **7.1806** | **2.4000e-004** | **2.2000e-004** | **7.2528** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 1.1794 | 0.0000 | 1.1794 | 0.6062 | 0.0000 | 0.6062 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.1902 | 1.9850 | 1.1819 | 2.2800e-003 | | 0.0968 | 0.0968 | | 0.0890 | 0.0890 | 0.0000 | 200.6361 | 200.6361 | 0.0649 | 0.0000 | 202.2584 |
| **Total** | **0.1902** | **1.9850** | **1.1819** | **2.2800e-003** | **1.1794** | **0.0968** | **1.2762** | **0.6062** | **0.0890** | **0.6952** | **0.0000** | **200.6361** | **200.6361** | **0.0649** | **0.0000** | **202.2584** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.2 Site Preparation - 2022

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 3.7000e-003 | 2.6000e-003 | 0.0295 | 8.0000e-005 | 8.6300e-003 | 5.0000e-005 | 8.6800e-003 | 2.2900e-003 | 4.0000e-005 | 2.3400e-003 | 0.0000 | 7.1806 | 7.1806 | 2.4000e-004 | 2.2000e-004 | 7.2528 |
| **Total** | **3.7000e-003** | **2.6000e-003** | **0.0295** | **8.0000e-005** | **8.6300e-003** | **5.0000e-005** | **8.6800e-003** | **2.2900e-003** | **4.0000e-005** | **2.3400e-003** | **0.0000** | **7.1806** | **7.1806** | **2.4000e-004** | **2.2000e-004** | **7.2528** |

## 3.3 Grading - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.6587 | 0.0000 | 0.6587 | 0.1443 | 0.0000 | 0.1443 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0997 | 1.0682 | 0.7986 | 1.7100e-003 | | 0.0450 | 0.0450 | | 0.0414 | 0.0414 | 0.0000 | 149.9702 | 149.9702 | 0.0485 | 0.0000 | 151.1827 |
| **Total** | **0.0997** | **1.0682** | **0.7986** | **1.7100e-003** | **0.6587** | **0.0450** | **0.7037** | **0.1443** | **0.0414** | **0.1856** | **0.0000** | **149.9702** | **149.9702** | **0.0485** | **0.0000** | **151.1827** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2022

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.8800e-003 | 1.3300e-003 | 0.0150 | 4.0000e-005 | 4.4000e-003 | 2.0000e-005 | 4.4200e-003 | 1.1700e-003 | 2.0000e-005 | 1.1900e-003 | 0.0000 | 3.6568 | 3.6568 | 1.2000e-004 | 1.1000e-004 | 3.6935 |
| **Total** | **1.8800e-003** | **1.3300e-003** | **0.0150** | **4.0000e-005** | **4.4000e-003** | **2.0000e-005** | **4.4200e-003** | **1.1700e-003** | **2.0000e-005** | **1.1900e-003** | **0.0000** | **3.6568** | **3.6568** | **1.2000e-004** | **1.1000e-004** | **3.6935** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.6587 | 0.0000 | 0.6587 | 0.1443 | 0.0000 | 0.1443 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0997 | 1.0682 | 0.7986 | 1.7100e-003 | | 0.0450 | 0.0450 | | 0.0414 | 0.0414 | 0.0000 | 149.9700 | 149.9700 | 0.0485 | 0.0000 | 151.1826 |
| **Total** | **0.0997** | **1.0682** | **0.7986** | **1.7100e-003** | **0.6587** | **0.0450** | **0.7037** | **0.1443** | **0.0414** | **0.1856** | **0.0000** | **149.9700** | **149.9700** | **0.0485** | **0.0000** | **151.1826** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2022

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.8800e-003 | 1.3300e-003 | 0.0150 | 4.0000e-005 | 4.4000e-003 | 2.0000e-005 | 4.4200e-003 | 1.1700e-003 | 2.0000e-005 | 1.1900e-003 | 0.0000 | 3.6568 | 3.6568 | 1.2000e-004 | 1.1000e-004 | 3.6935 |
| **Total** | **1.8800e-003** | **1.3300e-003** | **0.0150** | **4.0000e-005** | **4.4000e-003** | **2.0000e-005** | **4.4200e-003** | **1.1700e-003** | **2.0000e-005** | **1.1900e-003** | **0.0000** | **3.6568** | **3.6568** | **1.2000e-004** | **1.1000e-004** | **3.6935** |

## 3.3 Grading - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 1.2610 | 0.0000 | 1.2610 | 0.4753 | 0.0000 | 0.4753 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.4235 | 4.4007 | 3.5765 | 7.9200e-003 | | 0.1816 | 0.1816 | | 0.1671 | 0.1671 | 0.0000 | 695.3239 | 695.3239 | 0.2249 | 0.0000 | 700.9460 |
| **Total** | **0.4235** | **4.4007** | **3.5765** | **7.9200e-003** | **1.2610** | **0.1816** | **1.4426** | **0.4753** | **0.1671** | **0.6424** | **0.0000** | **695.3239** | **695.3239** | **0.2249** | **0.0000** | **700.9460** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2023

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 8.0100e-003 | 5.3700e-003 | 0.0635 | 1.8000e-004 | 0.0204 | 1.1000e-004 | 0.0205 | 5.4200e-003 | 1.0000e-004 | 5.5200e-003 | 0.0000 | 16.5088 | 16.5088 | 5.1000e-004 | 4.8000e-004 | 16.6648 |
| **Total** | **8.0100e-003** | **5.3700e-003** | **0.0635** | **1.8000e-004** | **0.0204** | **1.1000e-004** | **0.0205** | **5.4200e-003** | **1.0000e-004** | **5.5200e-003** | **0.0000** | **16.5088** | **16.5088** | **5.1000e-004** | **4.8000e-004** | **16.6648** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 1.2610 | 0.0000 | 1.2610 | 0.4753 | 0.0000 | 0.4753 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.4235 | 4.4007 | 3.5765 | 7.9200e-003 | | 0.1816 | 0.1816 | | 0.1671 | 0.1671 | 0.0000 | 695.3231 | 695.3231 | 0.2249 | 0.0000 | 700.9451 |
| **Total** | **0.4235** | **4.4007** | **3.5765** | **7.9200e-003** | **1.2610** | **0.1816** | **1.4426** | **0.4753** | **0.1671** | **0.6424** | **0.0000** | **695.3231** | **695.3231** | **0.2249** | **0.0000** | **700.9451** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2023

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 8.0100e-003 | 5.3700e-003 | 0.0635 | 1.8000e-004 | 0.0204 | 1.1000e-004 | 0.0205 | 5.4200e-003 | 1.0000e-004 | 5.5200e-003 | 0.0000 | 16.5088 | 16.5088 | 5.1000e-004 | 4.8000e-004 | 16.6648 |
| **Total** | **8.0100e-003** | **5.3700e-003** | **0.0635** | **1.8000e-004** | **0.0204** | **1.1000e-004** | **0.0205** | **5.4200e-003** | **1.0000e-004** | **5.5200e-003** | **0.0000** | **16.5088** | **16.5088** | **5.1000e-004** | **4.8000e-004** | **16.6648** |

## 3.4 Paving - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 2.5800e-003 | 0.0255 | 0.0365 | 6.0000e-005 | | 1.2800e-003 | 1.2800e-003 | | 1.1700e-003 | 1.1700e-003 | 0.0000 | 5.0067 | 5.0067 | 1.6200e-003 | 0.0000 | 5.0472 |
| Paving | 1.3900e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **3.9700e-003** | **0.0255** | **0.0365** | **6.0000e-005** | | **1.2800e-003** | **1.2800e-003** | | **1.1700e-003** | **1.1700e-003** | **0.0000** | **5.0067** | **5.0067** | **1.6200e-003** | **0.0000** | **5.0472** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Paving - 2023

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.2000e-004 | 8.0000e-005 | 9.3000e-004 | 0.0000 | 3.0000e-004 | 0.0000 | 3.0000e-004 | 8.0000e-005 | 0.0000 | 8.0000e-005 | 0.0000 | 0.2428 | 0.2428 | 1.0000e-005 | 1.0000e-005 | 0.2451 |
| **Total** | **1.2000e-004** | **8.0000e-005** | **9.3000e-004** | **0.0000** | **3.0000e-004** | **0.0000** | **3.0000e-004** | **8.0000e-005** | **0.0000** | **8.0000e-005** | **0.0000** | **0.2428** | **0.2428** | **1.0000e-005** | **1.0000e-005** | **0.2451** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 2.5800e-003 | 0.0255 | 0.0365 | 6.0000e-005 | | 1.2800e-003 | 1.2800e-003 | | 1.1700e-003 | 1.1700e-003 | 0.0000 | 5.0067 | 5.0067 | 1.6200e-003 | 0.0000 | 5.0472 |
| Paving | 1.3900e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **3.9700e-003** | **0.0255** | **0.0365** | **6.0000e-005** | | **1.2800e-003** | **1.2800e-003** | | **1.1700e-003** | **1.1700e-003** | **0.0000** | **5.0067** | **5.0067** | **1.6200e-003** | **0.0000** | **5.0472** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Paving - 2023

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.2000e-004 | 8.0000e-005 | 9.3000e-004 | 0.0000 | 3.0000e-004 | 0.0000 | 3.0000e-004 | 8.0000e-005 | 0.0000 | 8.0000e-005 | 0.0000 | 0.2428 | 0.2428 | 1.0000e-005 | 1.0000e-005 | 0.2451 |
| **Total** | **1.2000e-004** | **8.0000e-005** | **9.3000e-004** | **0.0000** | **3.0000e-004** | **0.0000** | **3.0000e-004** | **8.0000e-005** | **0.0000** | **8.0000e-005** | **0.0000** | **0.2428** | **0.2428** | **1.0000e-005** | **1.0000e-005** | **0.2451** |

## 3.4 Paving - 2024

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1062 | 1.0239 | 1.5723 | 2.4500e-003 | | 0.0504 | 0.0504 | | 0.0463 | 0.0463 | 0.0000 | 215.2852 | 215.2852 | 0.0696 | 0.0000 | 217.0259 |
| Paving | 0.0597 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.1659** | **1.0239** | **1.5723** | **2.4500e-003** | | **0.0504** | **0.0504** | | **0.0463** | **0.0463** | **0.0000** | **215.2852** | **215.2852** | **0.0696** | **0.0000** | **217.0259** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Paving - 2024

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.6700e-003 | 2.9900e-003 | 0.0371 | 1.1000e-004 | 0.0129 | 6.0000e-005 | 0.0130 | 3.4300e-003 | 6.0000e-005 | 3.4900e-003 | 0.0000 | 10.1777 | 10.1777 | 2.9000e-004 | 2.8000e-004 | 10.2685 |
| **Total** | **4.6700e-003** | **2.9900e-003** | **0.0371** | **1.1000e-004** | **0.0129** | **6.0000e-005** | **0.0130** | **3.4300e-003** | **6.0000e-005** | **3.4900e-003** | **0.0000** | **10.1777** | **10.1777** | **2.9000e-004** | **2.8000e-004** | **10.2685** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1062 | 1.0239 | 1.5723 | 2.4500e-003 | | 0.0504 | 0.0504 | | 0.0463 | 0.0463 | 0.0000 | 215.2850 | 215.2850 | 0.0696 | 0.0000 | 217.0256 |
| Paving | 0.0597 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.1659** | **1.0239** | **1.5723** | **2.4500e-003** | | **0.0504** | **0.0504** | | **0.0463** | **0.0463** | **0.0000** | **215.2850** | **215.2850** | **0.0696** | **0.0000** | **217.0256** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Paving - 2024

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.6700e-003 | 2.9900e-003 | 0.0371 | 1.1000e-004 | 0.0129 | 6.0000e-005 | 0.0130 | 3.4300e-003 | 6.0000e-005 | 3.4900e-003 | 0.0000 | 10.1777 | 10.1777 | 2.9000e-004 | 2.8000e-004 | 10.2685 |
| **Total** | **4.6700e-003** | **2.9900e-003** | **0.0371** | **1.1000e-004** | **0.0129** | **6.0000e-005** | **0.0130** | **3.4300e-003** | **6.0000e-005** | **3.4900e-003** | **0.0000** | **10.1777** | **10.1777** | **2.9000e-004** | **2.8000e-004** | **10.2685** |

## 3.5 Building Construction - 2024

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0346 | 0.3159 | 0.3799 | 6.3000e-004 | | 0.0144 | 0.0144 | | 0.0136 | 0.0136 | 0.0000 | 54.4845 | 54.4845 | 0.0129 | 0.0000 | 54.8066 |
| **Total** | **0.0346** | **0.3159** | **0.3799** | **6.3000e-004** | | **0.0144** | **0.0144** | | **0.0136** | **0.0136** | **0.0000** | **54.4845** | **54.4845** | **0.0129** | **0.0000** | **54.8066** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2024

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0136 | 0.5582 | 0.1667 | 2.5000e-003 | 0.0837 | 3.6400e-003 | 0.0873 | 0.0242 | 3.4800e-003 | 0.0277 | 0.0000 | 240.0580 | 240.0580 | 9.9000e-004 | 0.0359 | 250.7808 |
| Worker | 0.0979 | 0.0627 | 0.7780 | 2.2800e-003 | 0.2704 | 1.3600e-003 | 0.2717 | 0.0719 | 1.2500e-003 | 0.0731 | 0.0000 | 213.4408 | 213.4408 | 6.1300e-003 | 5.8800e-003 | 215.3464 |
| **Total** | **0.1115** | **0.6210** | **0.9447** | **4.7800e-003** | **0.3540** | **5.0000e-003** | **0.3590** | **0.0960** | **4.7300e-003** | **0.1008** | **0.0000** | **453.4988** | **453.4988** | **7.1200e-003** | **0.0418** | **466.1272** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0346 | 0.3159 | 0.3799 | 6.3000e-004 | | 0.0144 | 0.0144 | | 0.0136 | 0.0136 | 0.0000 | 54.4845 | 54.4845 | 0.0129 | 0.0000 | 54.8066 |
| **Total** | **0.0346** | **0.3159** | **0.3799** | **6.3000e-004** | | **0.0144** | **0.0144** | | **0.0136** | **0.0136** | **0.0000** | **54.4845** | **54.4845** | **0.0129** | **0.0000** | **54.8066** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2024

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0136 | 0.5582 | 0.1667 | 2.5000e-003 | 0.0837 | 3.6400e-003 | 0.0873 | 0.0242 | 3.4800e-003 | 0.0277 | 0.0000 | 240.0580 | 240.0580 | 9.9000e-004 | 0.0359 | 250.7808 |
| Worker | 0.0979 | 0.0627 | 0.7780 | 2.2800e-003 | 0.2704 | 1.3600e-003 | 0.2717 | 0.0719 | 1.2500e-003 | 0.0731 | 0.0000 | 213.4408 | 213.4408 | 6.1300e-003 | 5.8800e-003 | 215.3464 |
| **Total** | **0.1115** | **0.6210** | **0.9447** | **4.7800e-003** | **0.3540** | **5.0000e-003** | **0.3590** | **0.0960** | **4.7300e-003** | **0.1008** | **0.0000** | **453.4988** | **453.4988** | **7.1200e-003** | **0.0418** | **466.1272** |

## 3.5 Building Construction - 2025

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1785 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6549 | 302.6549 | 0.0711 | 0.0000 | 304.4335 |
| **Total** | **0.1785** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6549** | **302.6549** | **0.0711** | **0.0000** | **304.4335** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2025

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0735 | 3.0893 | 0.9063 | 0.0137 | 0.4647 | 0.0202 | 0.4849 | 0.1343 | 0.0193 | 0.1536 | 0.0000 | 1,308.8182 | 1,308.8182 | 5.2900e-003 | 0.1956 | 1,367.2267 |
| Worker | 0.5038 | 0.3094 | 4.0094 | 0.0122 | 1.5013 | 7.1900e-003 | 1.5085 | 0.3990 | 6.6100e-003 | 0.4057 | 0.0000 | 1,156.5433 | 1,156.5433 | 0.0306 | 0.0303 | 1,166.3507 |
| **Total** | **0.5773** | **3.3987** | **4.9157** | **0.0259** | **1.9660** | **0.0274** | **1.9934** | **0.5333** | **0.0259** | **0.5592** | **0.0000** | **2,465.3615** | **2,465.3615** | **0.0359** | **0.2259** | **2,533.5774** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1784 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6545 | 302.6545 | 0.0711 | 0.0000 | 304.4331 |
| **Total** | **0.1784** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6545** | **302.6545** | **0.0711** | **0.0000** | **304.4331** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2025

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0735 | 3.0893 | 0.9063 | 0.0137 | 0.4647 | 0.0202 | 0.4849 | 0.1343 | 0.0193 | 0.1536 | 0.0000 | 1,308.8182 | 1,308.8182 | 5.2900e-003 | 0.1956 | 1,367.2267 |
| Worker | 0.5038 | 0.3094 | 4.0094 | 0.0122 | 1.5013 | 7.1900e-003 | 1.5085 | 0.3990 | 6.6100e-003 | 0.4057 | 0.0000 | 1,156.5433 | 1,156.5433 | 0.0306 | 0.0303 | 1,166.3507 |
| **Total** | **0.5773** | **3.3987** | **4.9157** | **0.0259** | **1.9660** | **0.0274** | **1.9934** | **0.5333** | **0.0259** | **0.5592** | **0.0000** | **2,465.3615** | **2,465.3615** | **0.0359** | **0.2259** | **2,533.5774** |

## 3.5 Building Construction - 2026

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1785 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6549 | 302.6549 | 0.0711 | 0.0000 | 304.4335 |
| **Total** | **0.1785** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6549** | **302.6549** | **0.0711** | **0.0000** | **304.4335** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2026

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0719 | 3.0725 | 0.8905 | 0.0134 | 0.4647 | 0.0201 | 0.4848 | 0.1343 | 0.0192 | 0.1535 | 0.0000 | 1,284.2165 | 1,284.2165 | 5.1100e-003 | 0.1917 | 1,341.4705 |
| Worker | 0.4696 | 0.2778 | 3.7686 | 0.0119 | 1.5013 | 6.8700e-003 | 1.5082 | 0.3990 | 6.3200e-003 | 0.4054 | 0.0000 | 1,130.2967 | 1,130.2967 | 0.0278 | 0.0285 | 1,139.4695 |
| **Total** | **0.5415** | **3.3502** | **4.6591** | **0.0253** | **1.9660** | **0.0270** | **1.9930** | **0.5333** | **0.0255** | **0.5588** | **0.0000** | **2,414.5132** | **2,414.5132** | **0.0329** | **0.2202** | **2,480.9400** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1784 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6545 | 302.6545 | 0.0711 | 0.0000 | 304.4331 |
| **Total** | **0.1784** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6545** | **302.6545** | **0.0711** | **0.0000** | **304.4331** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2026

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0719 | 3.0725 | 0.8905 | 0.0134 | 0.4647 | 0.0201 | 0.4848 | 0.1343 | 0.0192 | 0.1535 | 0.0000 | 1,284.2165 | 1,284.2165 | 5.1100e-003 | 0.1917 | 1,341.4705 |
| Worker | 0.4696 | 0.2778 | 3.7686 | 0.0119 | 1.5013 | 6.8700e-003 | 1.5082 | 0.3990 | 6.3200e-003 | 0.4054 | 0.0000 | 1,130.2967 | 1,130.2967 | 0.0278 | 0.0285 | 1,139.4695 |
| **Total** | **0.5415** | **3.3502** | **4.6591** | **0.0253** | **1.9660** | **0.0270** | **1.9930** | **0.5333** | **0.0255** | **0.5588** | **0.0000** | **2,414.5132** | **2,414.5132** | **0.0329** | **0.2202** | **2,480.9400** |

## 3.5 Building Construction - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1785 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6549 | 302.6549 | 0.0711 | 0.0000 | 304.4335 |
| **Total** | **0.1785** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6549** | **302.6549** | **0.0711** | **0.0000** | **304.4335** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2027

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0706 | 3.0522 | 0.8774 | 0.0131 | 0.4647 | 0.0199 | 0.4847 | 0.1343 | 0.0191 | 0.1533 | 0.0000 | 1,257.9333 | 1,257.9333 | 4.9400e-003 | 0.1876 | 1,313.9696 |
| Worker | 0.4388 | 0.2513 | 3.5477 | 0.0115 | 1.5013 | 6.4800e-003 | 1.5078 | 0.3990 | 5.9600e-003 | 0.4050 | 0.0000 | 1,105.3879 | 1,105.3879 | 0.0253 | 0.0269 | 1,114.0255 |
| **Total** | **0.5095** | **3.3036** | **4.4251** | **0.0246** | **1.9660** | **0.0264** | **1.9925** | **0.5333** | **0.0250** | **0.5583** | **0.0000** | **2,363.3211** | **2,363.3211** | **0.0303** | **0.2145** | **2,427.9951** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1784 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6545 | 302.6545 | 0.0711 | 0.0000 | 304.4331 |
| **Total** | **0.1784** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6545** | **302.6545** | **0.0711** | **0.0000** | **304.4331** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2027

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0706 | 3.0522 | 0.8774 | 0.0131 | 0.4647 | 0.0199 | 0.4847 | 0.1343 | 0.0191 | 0.1533 | 0.0000 | 1,257.9333 | 1,257.9333 | 4.9400e-003 | 0.1876 | 1,313.9696 |
| Worker | 0.4388 | 0.2513 | 3.5477 | 0.0115 | 1.5013 | 6.4800e-003 | 1.5078 | 0.3990 | 5.9600e-003 | 0.4050 | 0.0000 | 1,105.3879 | 1,105.3879 | 0.0253 | 0.0269 | 1,114.0255 |
| **Total** | **0.5095** | **3.3036** | **4.4251** | **0.0246** | **1.9660** | **0.0264** | **1.9925** | **0.5333** | **0.0250** | **0.5583** | **0.0000** | **2,363.3211** | **2,363.3211** | **0.0303** | **0.2145** | **2,427.9951** |

## 3.5 Building Construction - 2028

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1778 | 1.6211 | 2.0910 | 3.5000e-003 | | 0.0686 | 0.0686 | | 0.0645 | 0.0645 | 0.0000 | 301.4953 | 301.4953 | 0.0709 | 0.0000 | 303.2671 |
| **Total** | **0.1778** | **1.6211** | **2.0910** | **3.5000e-003** | | **0.0686** | **0.0686** | | **0.0645** | **0.0645** | **0.0000** | **301.4953** | **301.4953** | **0.0709** | **0.0000** | **303.2671** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2028

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0693 | 3.0256 | 0.8637 | 0.0128 | 0.4629 | 0.0197 | 0.4827 | 0.1338 | 0.0189 | 0.1526 | 0.0000 | 1,228.1095 | 1,228.1095 | 4.7800e-003 | 0.1830 | 1,282.7675 |
| Worker | 0.4092 | 0.2286 | 3.3520 | 0.0112 | 1.4956 | 6.0500e-003 | 1.5016 | 0.3975 | 5.5700e-003 | 0.4031 | 0.0000 | 1,079.1285 | 1,079.1285 | 0.0231 | 0.0255 | 1,087.2898 |
| **Total** | **0.4785** | **3.2541** | **4.2157** | **0.0240** | **1.9585** | **0.0258** | **1.9843** | **0.5313** | **0.0245** | **0.5557** | **0.0000** | **2,307.2380** | **2,307.2380** | **0.0279** | **0.2085** | **2,370.0573** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1778 | 1.6211 | 2.0910 | 3.5000e-003 | | 0.0686 | 0.0686 | | 0.0645 | 0.0645 | 0.0000 | 301.4949 | 301.4949 | 0.0709 | 0.0000 | 303.2667 |
| **Total** | **0.1778** | **1.6211** | **2.0910** | **3.5000e-003** | | **0.0686** | **0.0686** | | **0.0645** | **0.0645** | **0.0000** | **301.4949** | **301.4949** | **0.0709** | **0.0000** | **303.2667** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2028

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0693 | 3.0256 | 0.8637 | 0.0128 | 0.4629 | 0.0197 | 0.4827 | 0.1338 | 0.0189 | 0.1526 | 0.0000 | 1,228.1095 | 1,228.1095 | 4.7800e-003 | 0.1830 | 1,282.7675 |
| Worker | 0.4092 | 0.2286 | 3.3520 | 0.0112 | 1.4956 | 6.0500e-003 | 1.5016 | 0.3975 | 5.5700e-003 | 0.4031 | 0.0000 | 1,079.1285 | 1,079.1285 | 0.0231 | 0.0255 | 1,087.2898 |
| **Total** | **0.4785** | **3.2541** | **4.2157** | **0.0240** | **1.9585** | **0.0258** | **1.9843** | **0.5313** | **0.0245** | **0.5557** | **0.0000** | **2,307.2380** | **2,307.2380** | **0.0279** | **0.2085** | **2,370.0573** |

## 3.5 Building Construction - 2029

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1785 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6549 | 302.6549 | 0.0711 | 0.0000 | 304.4335 |
| **Total** | **0.1785** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6549** | **302.6549** | **0.0711** | **0.0000** | **304.4335** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2029

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0686 | 3.0202 | 0.8580 | 0.0126 | 0.4647 | 0.0197 | 0.4844 | 0.1343 | 0.0188 | 0.1531 | 0.0000 | 1,208.5807 | 1,208.5807 | 4.6800e-003 | 0.1800 | 1,262.3224 |
| Worker | 0.3844 | 0.2110 | 3.2073 | 0.0109 | 1.5013 | 5.6800e-003 | 1.5070 | 0.3990 | 5.2300e-003 | 0.4043 | 0.0000 | 1,063.5385 | 1,063.5385 | 0.0213 | 0.0245 | 1,071.3564 |
| **Total** | **0.4530** | **3.2311** | **4.0654** | **0.0235** | **1.9660** | **0.0254** | **1.9914** | **0.5333** | **0.0240** | **0.5573** | **0.0000** | **2,272.1193** | **2,272.1193** | **0.0260** | **0.2044** | **2,333.6788** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1784 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6545 | 302.6545 | 0.0711 | 0.0000 | 304.4331 |
| **Total** | **0.1784** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6545** | **302.6545** | **0.0711** | **0.0000** | **304.4331** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2029

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0686 | 3.0202 | 0.8580 | 0.0126 | 0.4647 | 0.0197 | 0.4844 | 0.1343 | 0.0188 | 0.1531 | 0.0000 | 1,208.5807 | 1,208.5807 | 4.6800e-003 | 0.1800 | 1,262.3224 |
| Worker | 0.3844 | 0.2110 | 3.2073 | 0.0109 | 1.5013 | 5.6800e-003 | 1.5070 | 0.3990 | 5.2300e-003 | 0.4043 | 0.0000 | 1,063.5385 | 1,063.5385 | 0.0213 | 0.0245 | 1,071.3564 |
| **Total** | **0.4530** | **3.2311** | **4.0654** | **0.0235** | **1.9660** | **0.0254** | **1.9914** | **0.5333** | **0.0240** | **0.5573** | **0.0000** | **2,272.1193** | **2,272.1193** | **0.0260** | **0.2044** | **2,333.6788** |

## 3.5 Building Construction - 2030

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1708 | 1.0355 | 2.1085 | 4.0400e-003 | | 0.0193 | 0.0193 | | 0.0193 | 0.0193 | 0.0000 | 343.0336 | 343.0336 | 0.0138 | 0.0000 | 343.3777 |
| **Total** | **0.1708** | **1.0355** | **2.1085** | **4.0400e-003** | | **0.0193** | **0.0193** | | **0.0193** | **0.0193** | **0.0000** | **343.0336** | **343.0336** | **0.0138** | **0.0000** | **343.3777** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2030

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0678 | 3.0077 | 0.8512 | 0.0124 | 0.4647 | 0.0196 | 0.4843 | 0.1343 | 0.0187 | 0.1530 | 0.0000 | 1,186.5796 | 1,186.5796 | 4.5900e-003 | 0.1765 | 1,239.3005 |
| Worker | 0.3600 | 0.1954 | 3.0749 | 0.0107 | 1.5013 | 5.3200e-003 | 1.5067 | 0.3990 | 4.9000e-003 | 0.4039 | 0.0000 | 1,046.2206 | 1,046.2206 | 0.0197 | 0.0235 | 1,053.7239 |
| **Total** | **0.4278** | **3.2031** | **3.9262** | **0.0231** | **1.9660** | **0.0249** | **1.9909** | **0.5333** | **0.0236** | **0.5569** | **0.0000** | **2,232.8002** | **2,232.8002** | **0.0243** | **0.2001** | **2,293.0244** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1708 | 1.0355 | 2.1085 | 4.0400e-003 | | 0.0193 | 0.0193 | | 0.0193 | 0.0193 | 0.0000 | 343.0332 | 343.0332 | 0.0138 | 0.0000 | 343.3773 |
| **Total** | **0.1708** | **1.0355** | **2.1085** | **4.0400e-003** | | **0.0193** | **0.0193** | | **0.0193** | **0.0193** | **0.0000** | **343.0332** | **343.0332** | **0.0138** | **0.0000** | **343.3773** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2030

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0678 | 3.0077 | 0.8512 | 0.0124 | 0.4647 | 0.0196 | 0.4843 | 0.1343 | 0.0187 | 0.1530 | 0.0000 | 1,186.5796 | 1,186.5796 | 4.5900e-003 | 0.1765 | 1,239.3005 |
| Worker | 0.3600 | 0.1954 | 3.0749 | 0.0107 | 1.5013 | 5.3200e-003 | 1.5067 | 0.3990 | 4.9000e-003 | 0.4039 | 0.0000 | 1,046.2206 | 1,046.2206 | 0.0197 | 0.0235 | 1,053.7239 |
| **Total** | **0.4278** | **3.2031** | **3.9262** | **0.0231** | **1.9660** | **0.0249** | **1.9909** | **0.5333** | **0.0236** | **0.5569** | **0.0000** | **2,232.8002** | **2,232.8002** | **0.0243** | **0.2001** | **2,293.0244** |

## 3.5 Building Construction - 2031

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1708 | 1.0355 | 2.1085 | 4.0400e-003 | | 0.0193 | 0.0193 | | 0.0193 | 0.0193 | 0.0000 | 343.0336 | 343.0336 | 0.0138 | 0.0000 | 343.3777 |
| **Total** | **0.1708** | **1.0355** | **2.1085** | **4.0400e-003** | | **0.0193** | **0.0193** | | **0.0193** | **0.0193** | **0.0000** | **343.0336** | **343.0336** | **0.0138** | **0.0000** | **343.3777** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2031

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0671 | 2.9993 | 0.8469 | 0.0122 | 0.4647 | 0.0195 | 0.4842 | 0.1343 | 0.0186 | 0.1529 | 0.0000 | 1,167.0331 | 1,167.0331 | 4.5100e-003 | 0.1735 | 1,218.8556 |
| Worker | 0.3363 | 0.1818 | 2.9585 | 0.0104 | 1.5013 | 4.9800e-003 | 1.5063 | 0.3990 | 4.5900e-003 | 0.4036 | 0.0000 | 1,030.8234 | 1,030.8234 | 0.0183 | 0.0227 | 1,038.0562 |
| **Total** | **0.4035** | **3.1811** | **3.8054** | **0.0226** | **1.9660** | **0.0244** | **1.9905** | **0.5333** | **0.0232** | **0.5565** | **0.0000** | **2,197.8565** | **2,197.8565** | **0.0228** | **0.1963** | **2,256.9118** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1708 | 1.0355 | 2.1085 | 4.0400e-003 | | 0.0193 | 0.0193 | | 0.0193 | 0.0193 | 0.0000 | 343.0332 | 343.0332 | 0.0138 | 0.0000 | 343.3773 |
| **Total** | **0.1708** | **1.0355** | **2.1085** | **4.0400e-003** | | **0.0193** | **0.0193** | | **0.0193** | **0.0193** | **0.0000** | **343.0332** | **343.0332** | **0.0138** | **0.0000** | **343.3773** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2031

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0671 | 2.9993 | 0.8469 | 0.0122 | 0.4647 | 0.0195 | 0.4842 | 0.1343 | 0.0186 | 0.1529 | 0.0000 | 1,167.0331 | 1,167.0331 | 4.5100e-003 | 0.1735 | 1,218.8556 |
| Worker | 0.3363 | 0.1818 | 2.9585 | 0.0104 | 1.5013 | 4.9800e-003 | 1.5063 | 0.3990 | 4.5900e-003 | 0.4036 | 0.0000 | 1,030.8234 | 1,030.8234 | 0.0183 | 0.0227 | 1,038.0562 |
| **Total** | **0.4035** | **3.1811** | **3.8054** | **0.0226** | **1.9660** | **0.0244** | **1.9905** | **0.5333** | **0.0232** | **0.5565** | **0.0000** | **2,197.8565** | **2,197.8565** | **0.0228** | **0.1963** | **2,256.9118** |

## 3.5 Building Construction - 2032

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1715 | 1.0394 | 2.1166 | 4.0600e-003 | | 0.0194 | 0.0194 | | 0.0194 | 0.0194 | 0.0000 | 344.3479 | 344.3479 | 0.0138 | 0.0000 | 344.6933 |
| **Total** | **0.1715** | **1.0394** | **2.1166** | **4.0600e-003** | | **0.0194** | **0.0194** | | **0.0194** | **0.0194** | **0.0000** | **344.3479** | **344.3479** | **0.0138** | **0.0000** | **344.6933** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2032

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0670 | 3.0036 | 0.8480 | 0.0120 | 0.4665 | 0.0195 | 0.4859 | 0.1348 | 0.0186 | 0.1534 | 0.0000 | 1,154.1939 | 1,154.1939 | 4.4600e-003 | 0.1715 | 1,205.4225 |
| Worker | 0.3170 | 0.1715 | 2.8715 | 0.0103 | 1.5071 | 4.6900e-003 | 1.5118 | 0.4006 | 4.3200e-003 | 0.4049 | 0.0000 | 1,021.2374 | 1,021.2374 | 0.0171 | 0.0222 | 1,028.2768 |
| **Total** | **0.3840** | **3.1750** | **3.7195** | **0.0223** | **1.9736** | **0.0241** | **1.9977** | **0.5354** | **0.0229** | **0.5583** | **0.0000** | **2,175.4313** | **2,175.4313** | **0.0215** | **0.1937** | **2,233.6993** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1715 | 1.0394 | 2.1166 | 4.0600e-003 | | 0.0194 | 0.0194 | | 0.0194 | 0.0194 | 0.0000 | 344.3475 | 344.3475 | 0.0138 | 0.0000 | 344.6929 |
| **Total** | **0.1715** | **1.0394** | **2.1166** | **4.0600e-003** | | **0.0194** | **0.0194** | | **0.0194** | **0.0194** | **0.0000** | **344.3475** | **344.3475** | **0.0138** | **0.0000** | **344.6929** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2032

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0670 | 3.0036 | 0.8480 | 0.0120 | 0.4665 | 0.0195 | 0.4859 | 0.1348 | 0.0186 | 0.1534 | 0.0000 | 1,154.1939 | 1,154.1939 | 4.4600e-003 | 0.1715 | 1,205.4225 |
| Worker | 0.3170 | 0.1715 | 2.8715 | 0.0103 | 1.5071 | 4.6900e-003 | 1.5118 | 0.4006 | 4.3200e-003 | 0.4049 | 0.0000 | 1,021.2374 | 1,021.2374 | 0.0171 | 0.0222 | 1,028.2768 |
| **Total** | **0.3840** | **3.1750** | **3.7195** | **0.0223** | **1.9736** | **0.0241** | **1.9977** | **0.5354** | **0.0229** | **0.5583** | **0.0000** | **2,175.4313** | **2,175.4313** | **0.0215** | **0.1937** | **2,233.6993** |

## 3.5 Building Construction - 2033

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1702 | 1.0315 | 2.1004 | 4.0200e-003 | | 0.0193 | 0.0193 | | 0.0193 | 0.0193 | 0.0000 | 341.7193 | 341.7193 | 0.0137 | 0.0000 | 342.0621 |
| **Total** | **0.1702** | **1.0315** | **2.1004** | **4.0200e-003** | | **0.0193** | **0.0193** | | **0.0193** | **0.0193** | **0.0000** | **341.7193** | **341.7193** | **0.0137** | **0.0000** | **342.0621** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2033

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0662 | 2.9750 | 0.8413 | 0.0118 | 0.4629 | 0.0192 | 0.4822 | 0.1338 | 0.0184 | 0.1521 | 0.0000 | 1,130.2743 | 1,130.2743 | 4.3900e-003 | 0.1679 | 1,180.4223 |
| Worker | 0.2962 | 0.1611 | 2.7653 | 0.0100 | 1.4956 | 4.3700e-003 | 1.4999 | 0.3975 | 4.0200e-003 | 0.4015 | 0.0000 | 1,001.6091 | 1,001.6091 | 0.0159 | 0.0215 | 1,008.4132 |
| **Total** | **0.3623** | **3.1361** | **3.6067** | **0.0218** | **1.9585** | **0.0236** | **1.9821** | **0.5313** | **0.0224** | **0.5537** | **0.0000** | **2,131.8834** | **2,131.8834** | **0.0202** | **0.1894** | **2,188.8355** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1702 | 1.0315 | 2.1004 | 4.0200e-003 | | 0.0193 | 0.0193 | | 0.0193 | 0.0193 | 0.0000 | 341.7189 | 341.7189 | 0.0137 | 0.0000 | 342.0617 |
| **Total** | **0.1702** | **1.0315** | **2.1004** | **4.0200e-003** | | **0.0193** | **0.0193** | | **0.0193** | **0.0193** | **0.0000** | **341.7189** | **341.7189** | **0.0137** | **0.0000** | **342.0617** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2033

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0662 | 2.9750 | 0.8413 | 0.0118 | 0.4629 | 0.0192 | 0.4822 | 0.1338 | 0.0184 | 0.1521 | 0.0000 | 1,130.2743 | 1,130.2743 | 4.3900e-003 | 0.1679 | 1,180.4223 |
| Worker | 0.2962 | 0.1611 | 2.7653 | 0.0100 | 1.4956 | 4.3700e-003 | 1.4999 | 0.3975 | 4.0200e-003 | 0.4015 | 0.0000 | 1,001.6091 | 1,001.6091 | 0.0159 | 0.0215 | 1,008.4132 |
| **Total** | **0.3623** | **3.1361** | **3.6067** | **0.0218** | **1.9585** | **0.0236** | **1.9821** | **0.5313** | **0.0224** | **0.5537** | **0.0000** | **2,131.8834** | **2,131.8834** | **0.0202** | **0.1894** | **2,188.8355** |

## 3.5 Building Construction - 2034

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1702 | 1.0315 | 2.1004 | 4.0200e-003 | | 0.0193 | 0.0193 | | 0.0193 | 0.0193 | 0.0000 | 341.7193 | 341.7193 | 0.0137 | 0.0000 | 342.0621 |
| **Total** | **0.1702** | **1.0315** | **2.1004** | **4.0200e-003** | | **0.0193** | **0.0193** | | **0.0193** | **0.0193** | **0.0000** | **341.7193** | **341.7193** | **0.0137** | **0.0000** | **342.0621** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2034

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0660 | 2.9678 | 0.8417 | 0.0117 | 0.4629 | 0.0191 | 0.4821 | 0.1338 | 0.0183 | 0.1521 | 0.0000 | 1,116.5868 | 1,116.5868 | 4.3500e-003 | 0.1658 | 1,166.1105 |
| Worker | 0.2800 | 0.1539 | 2.6914 | 9.8800e-003 | 1.4956 | 4.1100e-003 | 1.4997 | 0.3975 | 3.7800e-003 | 0.4013 | 0.0000 | 991.2372 | 991.2372 | 0.0149 | 0.0211 | 997.8925 |
| **Total** | **0.3460** | **3.1217** | **3.5331** | **0.0215** | **1.9585** | **0.0232** | **1.9817** | **0.5313** | **0.0221** | **0.5533** | **0.0000** | **2,107.8241** | **2,107.8241** | **0.0192** | **0.1869** | **2,164.0029** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1702 | 1.0315 | 2.1004 | 4.0200e-003 | | 0.0193 | 0.0193 | | 0.0193 | 0.0193 | 0.0000 | 341.7189 | 341.7189 | 0.0137 | 0.0000 | 342.0617 |
| **Total** | **0.1702** | **1.0315** | **2.1004** | **4.0200e-003** | | **0.0193** | **0.0193** | | **0.0193** | **0.0193** | **0.0000** | **341.7189** | **341.7189** | **0.0137** | **0.0000** | **342.0617** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2034

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0660 | 2.9678 | 0.8417 | 0.0117 | 0.4629 | 0.0191 | 0.4821 | 0.1338 | 0.0183 | 0.1521 | 0.0000 | 1,116.5868 | 1,116.5868 | 4.3500e-003 | 0.1658 | 1,166.1105 |
| Worker | 0.2800 | 0.1539 | 2.6914 | 9.8800e-003 | 1.4956 | 4.1100e-003 | 1.4997 | 0.3975 | 3.7800e-003 | 0.4013 | 0.0000 | 991.2372 | 991.2372 | 0.0149 | 0.0211 | 997.8925 |
| **Total** | **0.3460** | **3.1217** | **3.5331** | **0.0215** | **1.9585** | **0.0232** | **1.9817** | **0.5313** | **0.0221** | **0.5533** | **0.0000** | **2,107.8241** | **2,107.8241** | **0.0192** | **0.1869** | **2,164.0029** |

## 3.5 Building Construction - 2035

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1588 | 0.9346 | 2.1034 | 4.0400e-003 | | 0.0118 | 0.0118 | | 0.0118 | 0.0118 | 0.0000 | 343.0336 | 343.0336 | 0.0128 | 0.0000 | 343.3530 |
| **Total** | **0.1588** | **0.9346** | **2.1034** | **4.0400e-003** | | **0.0118** | **0.0118** | | **0.0118** | **0.0118** | **0.0000** | **343.0336** | **343.0336** | **0.0128** | **0.0000** | **343.3530** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2035

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0660 | 2.9708 | 0.8454 | 0.0116 | 0.4647 | 0.0191 | 0.4838 | 0.1343 | 0.0183 | 0.1525 | 0.0000 | 1,108.6580 | 1,108.6580 | 4.3400e-003 | 0.1646 | 1,157.8147 |
| Worker | 0.2666 | 0.1488 | 2.6387 | 9.7800e-003 | 1.5013 | 3.8900e-003 | 1.5052 | 0.3990 | 3.5800e-003 | 0.4026 | 0.0000 | 986.0822 | 986.0822 | 0.0141 | 0.0208 | 992.6441 |
| **Total** | **0.3326** | **3.1196** | **3.4841** | **0.0214** | **1.9660** | **0.0230** | **1.9890** | **0.5333** | **0.0219** | **0.5552** | **0.0000** | **2,094.7402** | **2,094.7402** | **0.0184** | **0.1854** | **2,150.4588** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1588 | 0.9346 | 2.1034 | 4.0400e-003 | | 0.0118 | 0.0118 | | 0.0118 | 0.0118 | 0.0000 | 343.0332 | 343.0332 | 0.0128 | 0.0000 | 343.3526 |
| **Total** | **0.1588** | **0.9346** | **2.1034** | **4.0400e-003** | | **0.0118** | **0.0118** | | **0.0118** | **0.0118** | **0.0000** | **343.0332** | **343.0332** | **0.0128** | **0.0000** | **343.3526** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2035

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0660 | 2.9708 | 0.8454 | 0.0116 | 0.4647 | 0.0191 | 0.4838 | 0.1343 | 0.0183 | 0.1525 | 0.0000 | 1,108.6580 | 1,108.6580 | 4.3400e-003 | 0.1646 | 1,157.8147 |
| Worker | 0.2666 | 0.1488 | 2.6387 | 9.7800e-003 | 1.5013 | 3.8900e-003 | 1.5052 | 0.3990 | 3.5800e-003 | 0.4026 | 0.0000 | 986.0822 | 986.0822 | 0.0141 | 0.0208 | 992.6441 |
| **Total** | **0.3326** | **3.1196** | **3.4841** | **0.0214** | **1.9660** | **0.0230** | **1.9890** | **0.5333** | **0.0219** | **0.5552** | **0.0000** | **2,094.7402** | **2,094.7402** | **0.0184** | **0.1854** | **2,150.4588** |

## 3.5 Building Construction - 2036

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1120 | 0.6588 | 1.4828 | 2.8500e-003 | | 8.3200e-003 | 8.3200e-003 | | 8.3200e-003 | 8.3200e-003 | 0.0000 | 241.8321 | 241.8321 | 9.0100e-003 | 0.0000 | 242.0573 |
| **Total** | **0.1120** | **0.6588** | **1.4828** | **2.8500e-003** | | **8.3200e-003** | **8.3200e-003** | | **8.3200e-003** | **8.3200e-003** | **0.0000** | **241.8321** | **241.8321** | **9.0100e-003** | **0.0000** | **242.0573** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2036

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0466 | 2.0943 | 0.5960 | 8.1600e-003 | 0.3276 | 0.0135 | 0.3411 | 0.0947 | 0.0129 | 0.1075 | 0.0000 | 781.5827 | 781.5827 | 3.0600e-003 | 0.1160 | 816.2372 |
| Worker | 0.1879 | 0.1049 | 1.8602 | 6.9000e-003 | 1.0584 | 2.7400e-003 | 1.0612 | 0.2813 | 2.5300e-003 | 0.2838 | 0.0000 | 695.1691 | 695.1691 | 9.9300e-003 | 0.0147 | 699.7951 |
| **Total** | **0.2345** | **2.1993** | **2.4562** | **0.0151** | **1.3860** | **0.0162** | **1.4022** | **0.3760** | **0.0154** | **0.3914** | **0.0000** | **1,476.7517** | **1,476.7517** | **0.0130** | **0.1307** | **1,516.0323** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1120 | 0.6588 | 1.4828 | 2.8500e-003 | | 8.3200e-003 | 8.3200e-003 | | 8.3200e-003 | 8.3200e-003 | 0.0000 | 241.8319 | 241.8319 | 9.0100e-003 | 0.0000 | 242.0570 |
| **Total** | **0.1120** | **0.6588** | **1.4828** | **2.8500e-003** | | **8.3200e-003** | **8.3200e-003** | | **8.3200e-003** | **8.3200e-003** | **0.0000** | **241.8319** | **241.8319** | **9.0100e-003** | **0.0000** | **242.0570** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2036

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0466 | 2.0943 | 0.5960 | 8.1600e-003 | 0.3276 | 0.0135 | 0.3411 | 0.0947 | 0.0129 | 0.1075 | 0.0000 | 781.5827 | 781.5827 | 3.0600e-003 | 0.1160 | 816.2372 |
| Worker | 0.1879 | 0.1049 | 1.8602 | 6.9000e-003 | 1.0584 | 2.7400e-003 | 1.0612 | 0.2813 | 2.5300e-003 | 0.2838 | 0.0000 | 695.1691 | 695.1691 | 9.9300e-003 | 0.0147 | 699.7951 |
| **Total** | **0.2345** | **2.1993** | **2.4562** | **0.0151** | **1.3860** | **0.0162** | **1.4022** | **0.3760** | **0.0154** | **0.3914** | **0.0000** | **1,476.7517** | **1,476.7517** | **0.0130** | **0.1307** | **1,516.0323** |

## 3.6 Architectural Coating - 2024

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.1588 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.3400e-003 | 0.0226 | 0.0335 | 5.0000e-005 | | 1.1300e-003 | 1.1300e-003 | | 1.1300e-003 | 1.1300e-003 | 0.0000 | 4.7235 | 4.7235 | 2.7000e-004 | 0.0000 | 4.7302 |
| **Total** | **0.1621** | **0.0226** | **0.0335** | **5.0000e-005** | | **1.1300e-003** | **1.1300e-003** | | **1.1300e-003** | **1.1300e-003** | **0.0000** | **4.7235** | **4.7235** | **2.7000e-004** | **0.0000** | **4.7302** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2024

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0154 | 9.8800e-003 | 0.1226 | 3.6000e-004 | 0.0426 | 2.1000e-004 | 0.0428 | 0.0113 | 2.0000e-004 | 0.0115 | 0.0000 | 33.6289 | 33.6289 | 9.7000e-004 | 9.3000e-004 | 33.9292 |
| **Total** | **0.0154** | **9.8800e-003** | **0.1226** | **3.6000e-004** | **0.0426** | **2.1000e-004** | **0.0428** | **0.0113** | **2.0000e-004** | **0.0115** | **0.0000** | **33.6289** | **33.6289** | **9.7000e-004** | **9.3000e-004** | **33.9292** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.1588 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.3400e-003 | 0.0226 | 0.0335 | 5.0000e-005 | | 1.1300e-003 | 1.1300e-003 | | 1.1300e-003 | 1.1300e-003 | 0.0000 | 4.7235 | 4.7235 | 2.7000e-004 | 0.0000 | 4.7302 |
| **Total** | **0.1621** | **0.0226** | **0.0335** | **5.0000e-005** | | **1.1300e-003** | **1.1300e-003** | | **1.1300e-003** | **1.1300e-003** | **0.0000** | **4.7235** | **4.7235** | **2.7000e-004** | **0.0000** | **4.7302** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2024

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0154 | 9.8800e-003 | 0.1226 | 3.6000e-004 | 0.0426 | 2.1000e-004 | 0.0428 | 0.0113 | 2.0000e-004 | 0.0115 | 0.0000 | 33.6289 | 33.6289 | 9.7000e-004 | 9.3000e-004 | 33.9292 |
| **Total** | **0.0154** | **9.8800e-003** | **0.1226** | **3.6000e-004** | **0.0426** | **2.1000e-004** | **0.0428** | **0.0113** | **2.0000e-004** | **0.0115** | **0.0000** | **33.6289** | **33.6289** | **9.7000e-004** | **9.3000e-004** | **33.9292** |

## 3.6 Architectural Coating - 2025

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.1198 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0223 | 0.1495 | 0.2361 | 3.9000e-004 | | 6.7200e-003 | 6.7200e-003 | | 6.7200e-003 | 6.7200e-003 | 0.0000 | 33.3200 | 33.3200 | 1.8200e-003 | 0.0000 | 33.3654 |
| **Total** | **1.1421** | **0.1495** | **0.2361** | **3.9000e-004** | | **6.7200e-003** | **6.7200e-003** | | **6.7200e-003** | **6.7200e-003** | **0.0000** | **33.3200** | **33.3200** | **1.8200e-003** | **0.0000** | **33.3654** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2025

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1008 | 0.0619 | 0.8024 | 2.4500e-003 | 0.3005 | 1.4400e-003 | 0.3019 | 0.0799 | 1.3200e-003 | 0.0812 | 0.0000 | 231.4694 | 231.4694 | 6.1300e-003 | 6.0700e-003 | 233.4323 |
| **Total** | **0.1008** | **0.0619** | **0.8024** | **2.4500e-003** | **0.3005** | **1.4400e-003** | **0.3019** | **0.0799** | **1.3200e-003** | **0.0812** | **0.0000** | **231.4694** | **231.4694** | **6.1300e-003** | **6.0700e-003** | **233.4323** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.1198 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0223 | 0.1495 | 0.2361 | 3.9000e-004 | | 6.7200e-003 | 6.7200e-003 | | 6.7200e-003 | 6.7200e-003 | 0.0000 | 33.3199 | 33.3199 | 1.8200e-003 | 0.0000 | 33.3654 |
| **Total** | **1.1421** | **0.1495** | **0.2361** | **3.9000e-004** | | **6.7200e-003** | **6.7200e-003** | | **6.7200e-003** | **6.7200e-003** | **0.0000** | **33.3199** | **33.3199** | **1.8200e-003** | **0.0000** | **33.3654** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2025

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1008 | 0.0619 | 0.8024 | 2.4500e-003 | 0.3005 | 1.4400e-003 | 0.3019 | 0.0799 | 1.3200e-003 | 0.0812 | 0.0000 | 231.4694 | 231.4694 | 6.1300e-003 | 6.0700e-003 | 233.4323 |
| **Total** | **0.1008** | **0.0619** | **0.8024** | **2.4500e-003** | **0.3005** | **1.4400e-003** | **0.3019** | **0.0799** | **1.3200e-003** | **0.0812** | **0.0000** | **231.4694** | **231.4694** | **6.1300e-003** | **6.0700e-003** | **233.4323** |

## 3.6 Architectural Coating - 2026

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.1198 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0223 | 0.1495 | 0.2361 | 3.9000e-004 | | 6.7200e-003 | 6.7200e-003 | | 6.7200e-003 | 6.7200e-003 | 0.0000 | 33.3200 | 33.3200 | 1.8200e-003 | 0.0000 | 33.3654 |
| **Total** | **1.1421** | **0.1495** | **0.2361** | **3.9000e-004** | | **6.7200e-003** | **6.7200e-003** | | **6.7200e-003** | **6.7200e-003** | **0.0000** | **33.3200** | **33.3200** | **1.8200e-003** | **0.0000** | **33.3654** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2026

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0940 | 0.0556 | 0.7542 | 2.3700e-003 | 0.3005 | 1.3700e-003 | 0.3019 | 0.0799 | 1.2700e-003 | 0.0811 | 0.0000 | 226.2164 | 226.2164 | 5.5600e-003 | 5.6900e-003 | 228.0523 |
| **Total** | **0.0940** | **0.0556** | **0.7542** | **2.3700e-003** | **0.3005** | **1.3700e-003** | **0.3019** | **0.0799** | **1.2700e-003** | **0.0811** | **0.0000** | **226.2164** | **226.2164** | **5.5600e-003** | **5.6900e-003** | **228.0523** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.1198 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0223 | 0.1495 | 0.2361 | 3.9000e-004 | | 6.7200e-003 | 6.7200e-003 | | 6.7200e-003 | 6.7200e-003 | 0.0000 | 33.3199 | 33.3199 | 1.8200e-003 | 0.0000 | 33.3654 |
| **Total** | **1.1421** | **0.1495** | **0.2361** | **3.9000e-004** | | **6.7200e-003** | **6.7200e-003** | | **6.7200e-003** | **6.7200e-003** | **0.0000** | **33.3199** | **33.3199** | **1.8200e-003** | **0.0000** | **33.3654** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2026

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0940 | 0.0556 | 0.7542 | 2.3700e-003 | 0.3005 | 1.3700e-003 | 0.3019 | 0.0799 | 1.2700e-003 | 0.0811 | 0.0000 | 226.2164 | 226.2164 | 5.5600e-003 | 5.6900e-003 | 228.0523 |
| **Total** | **0.0940** | **0.0556** | **0.7542** | **2.3700e-003** | **0.3005** | **1.3700e-003** | **0.3019** | **0.0799** | **1.2700e-003** | **0.0811** | **0.0000** | **226.2164** | **226.2164** | **5.5600e-003** | **5.6900e-003** | **228.0523** |

## 3.6 Architectural Coating - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.1198 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0223 | 0.1495 | 0.2361 | 3.9000e-004 | | 6.7200e-003 | 6.7200e-003 | | 6.7200e-003 | 6.7200e-003 | 0.0000 | 33.3200 | 33.3200 | 1.8200e-003 | 0.0000 | 33.3654 |
| **Total** | **1.1421** | **0.1495** | **0.2361** | **3.9000e-004** | | **6.7200e-003** | **6.7200e-003** | | **6.7200e-003** | **6.7200e-003** | **0.0000** | **33.3200** | **33.3200** | **1.8200e-003** | **0.0000** | **33.3654** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2027

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0878 | 0.0503 | 0.7100 | 2.3000e-003 | 0.3005 | 1.3000e-003 | 0.3018 | 0.0799 | 1.1900e-003 | 0.0811 | 0.0000 | 221.2312 | 221.2312 | 5.0700e-003 | 5.3800e-003 | 222.9599 |
| **Total** | **0.0878** | **0.0503** | **0.7100** | **2.3000e-003** | **0.3005** | **1.3000e-003** | **0.3018** | **0.0799** | **1.1900e-003** | **0.0811** | **0.0000** | **221.2312** | **221.2312** | **5.0700e-003** | **5.3800e-003** | **222.9599** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.1198 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0223 | 0.1495 | 0.2361 | 3.9000e-004 | | 6.7200e-003 | 6.7200e-003 | | 6.7200e-003 | 6.7200e-003 | 0.0000 | 33.3199 | 33.3199 | 1.8200e-003 | 0.0000 | 33.3654 |
| **Total** | **1.1421** | **0.1495** | **0.2361** | **3.9000e-004** | | **6.7200e-003** | **6.7200e-003** | | **6.7200e-003** | **6.7200e-003** | **0.0000** | **33.3199** | **33.3199** | **1.8200e-003** | **0.0000** | **33.3654** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2027

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0878 | 0.0503 | 0.7100 | 2.3000e-003 | 0.3005 | 1.3000e-003 | 0.3018 | 0.0799 | 1.1900e-003 | 0.0811 | 0.0000 | 221.2312 | 221.2312 | 5.0700e-003 | 5.3800e-003 | 222.9599 |
| **Total** | **0.0878** | **0.0503** | **0.7100** | **2.3000e-003** | **0.3005** | **1.3000e-003** | **0.3018** | **0.0799** | **1.1900e-003** | **0.0811** | **0.0000** | **221.2312** | **221.2312** | **5.0700e-003** | **5.3800e-003** | **222.9599** |

## 3.6 Architectural Coating - 2028

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.1156 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0222 | 0.1489 | 0.2352 | 3.9000e-004 | | 6.7000e-003 | 6.7000e-003 | | 6.7000e-003 | 6.7000e-003 | 0.0000 | 33.1923 | 33.1923 | 1.8100e-003 | 0.0000 | 33.2376 |
| **Total** | **1.1378** | **0.1489** | **0.2352** | **3.9000e-004** | | **6.7000e-003** | **6.7000e-003** | | **6.7000e-003** | **6.7000e-003** | **0.0000** | **33.1923** | **33.1923** | **1.8100e-003** | **0.0000** | **33.2376** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2028

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0819 | 0.0457 | 0.6709 | 2.2300e-003 | 0.2993 | 1.2100e-003 | 0.3005 | 0.0796 | 1.1100e-003 | 0.0807 | 0.0000 | 215.9757 | 215.9757 | 4.6200e-003 | 5.0900e-003 | 217.6091 |
| **Total** | **0.0819** | **0.0457** | **0.6709** | **2.2300e-003** | **0.2993** | **1.2100e-003** | **0.3005** | **0.0796** | **1.1100e-003** | **0.0807** | **0.0000** | **215.9757** | **215.9757** | **4.6200e-003** | **5.0900e-003** | **217.6091** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.1156 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0222 | 0.1489 | 0.2352 | 3.9000e-004 | | 6.7000e-003 | 6.7000e-003 | | 6.7000e-003 | 6.7000e-003 | 0.0000 | 33.1923 | 33.1923 | 1.8100e-003 | 0.0000 | 33.2375 |
| **Total** | **1.1378** | **0.1489** | **0.2352** | **3.9000e-004** | | **6.7000e-003** | **6.7000e-003** | | **6.7000e-003** | **6.7000e-003** | **0.0000** | **33.1923** | **33.1923** | **1.8100e-003** | **0.0000** | **33.2375** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2028

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0819 | 0.0457 | 0.6709 | 2.2300e-003 | 0.2993 | 1.2100e-003 | 0.3005 | 0.0796 | 1.1100e-003 | 0.0807 | 0.0000 | 215.9757 | 215.9757 | 4.6200e-003 | 5.0900e-003 | 217.6091 |
| **Total** | **0.0819** | **0.0457** | **0.6709** | **2.2300e-003** | **0.2993** | **1.2100e-003** | **0.3005** | **0.0796** | **1.1100e-003** | **0.0807** | **0.0000** | **215.9757** | **215.9757** | **4.6200e-003** | **5.0900e-003** | **217.6091** |

## 3.6 Architectural Coating - 2029

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.1198 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0223 | 0.1495 | 0.2361 | 3.9000e-004 | | 6.7200e-003 | 6.7200e-003 | | 6.7200e-003 | 6.7200e-003 | 0.0000 | 33.3200 | 33.3200 | 1.8200e-003 | 0.0000 | 33.3654 |
| **Total** | **1.1421** | **0.1495** | **0.2361** | **3.9000e-004** | | **6.7200e-003** | **6.7200e-003** | | **6.7200e-003** | **6.7200e-003** | **0.0000** | **33.3200** | **33.3200** | **1.8200e-003** | **0.0000** | **33.3654** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2029

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0769 | 0.0422 | 0.6419 | 2.1800e-003 | 0.3005 | 1.1400e-003 | 0.3016 | 0.0799 | 1.0500e-003 | 0.0809 | 0.0000 | 212.8555 | 212.8555 | 4.2700e-003 | 4.8900e-003 | 214.4202 |
| **Total** | **0.0769** | **0.0422** | **0.6419** | **2.1800e-003** | **0.3005** | **1.1400e-003** | **0.3016** | **0.0799** | **1.0500e-003** | **0.0809** | **0.0000** | **212.8555** | **212.8555** | **4.2700e-003** | **4.8900e-003** | **214.4202** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.1198 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0223 | 0.1495 | 0.2361 | 3.9000e-004 | | 6.7200e-003 | 6.7200e-003 | | 6.7200e-003 | 6.7200e-003 | 0.0000 | 33.3199 | 33.3199 | 1.8200e-003 | 0.0000 | 33.3654 |
| **Total** | **1.1421** | **0.1495** | **0.2361** | **3.9000e-004** | | **6.7200e-003** | **6.7200e-003** | | **6.7200e-003** | **6.7200e-003** | **0.0000** | **33.3199** | **33.3199** | **1.8200e-003** | **0.0000** | **33.3654** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2029

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0769 | 0.0422 | 0.6419 | 2.1800e-003 | 0.3005 | 1.1400e-003 | 0.3016 | 0.0799 | 1.0500e-003 | 0.0809 | 0.0000 | 212.8555 | 212.8555 | 4.2700e-003 | 4.8900e-003 | 214.4202 |
| **Total** | **0.0769** | **0.0422** | **0.6419** | **2.1800e-003** | **0.3005** | **1.1400e-003** | **0.3016** | **0.0799** | **1.0500e-003** | **0.0809** | **0.0000** | **212.8555** | **212.8555** | **4.2700e-003** | **4.8900e-003** | **214.4202** |

## 3.6 Architectural Coating - 2030

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.1198 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0171 | 0.1117 | 0.2346 | 3.9000e-004 | | 2.6500e-003 | 2.6500e-003 | | 2.6500e-003 | 2.6500e-003 | 0.0000 | 33.3200 | 33.3200 | 1.3500e-003 | 0.0000 | 33.3537 |
| **Total** | **1.1369** | **0.1117** | **0.2346** | **3.9000e-004** | | **2.6500e-003** | **2.6500e-003** | | **2.6500e-003** | **2.6500e-003** | **0.0000** | **33.3200** | **33.3200** | **1.3500e-003** | **0.0000** | **33.3537** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2030

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0721 | 0.0391 | 0.6154 | 2.1300e-003 | 0.3005 | 1.0700e-003 | 0.3015 | 0.0799 | 9.8000e-004 | 0.0808 | 0.0000 | 209.3895 | 209.3895 | 3.9400e-003 | 4.7100e-003 | 210.8912 |
| **Total** | **0.0721** | **0.0391** | **0.6154** | **2.1300e-003** | **0.3005** | **1.0700e-003** | **0.3015** | **0.0799** | **9.8000e-004** | **0.0808** | **0.0000** | **209.3895** | **209.3895** | **3.9400e-003** | **4.7100e-003** | **210.8912** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.1198 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0171 | 0.1117 | 0.2346 | 3.9000e-004 | | 2.6500e-003 | 2.6500e-003 | | 2.6500e-003 | 2.6500e-003 | 0.0000 | 33.3199 | 33.3199 | 1.3500e-003 | 0.0000 | 33.3536 |
| **Total** | **1.1369** | **0.1117** | **0.2346** | **3.9000e-004** | | **2.6500e-003** | **2.6500e-003** | | **2.6500e-003** | **2.6500e-003** | **0.0000** | **33.3199** | **33.3199** | **1.3500e-003** | **0.0000** | **33.3536** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2030

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0721 | 0.0391 | 0.6154 | 2.1300e-003 | 0.3005 | 1.0700e-003 | 0.3015 | 0.0799 | 9.8000e-004 | 0.0808 | 0.0000 | 209.3895 | 209.3895 | 3.9400e-003 | 4.7100e-003 | 210.8912 |
| **Total** | **0.0721** | **0.0391** | **0.6154** | **2.1300e-003** | **0.3005** | **1.0700e-003** | **0.3015** | **0.0799** | **9.8000e-004** | **0.0808** | **0.0000** | **209.3895** | **209.3895** | **3.9400e-003** | **4.7100e-003** | **210.8912** |

## 3.6 Architectural Coating - 2031

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.1198 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0171 | 0.1117 | 0.2346 | 3.9000e-004 | | 2.6500e-003 | 2.6500e-003 | | 2.6500e-003 | 2.6500e-003 | 0.0000 | 33.3200 | 33.3200 | 1.3500e-003 | 0.0000 | 33.3537 |
| **Total** | **1.1369** | **0.1117** | **0.2346** | **3.9000e-004** | | **2.6500e-003** | **2.6500e-003** | | **2.6500e-003** | **2.6500e-003** | **0.0000** | **33.3200** | **33.3200** | **1.3500e-003** | **0.0000** | **33.3537** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2031

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0673 | 0.0364 | 0.5921 | 2.0900e-003 | 0.3005 | 1.0000e-003 | 0.3015 | 0.0799 | 9.2000e-004 | 0.0808 | 0.0000 | 206.3080 | 206.3080 | 3.6500e-003 | 4.5500e-003 | 207.7555 |
| **Total** | **0.0673** | **0.0364** | **0.5921** | **2.0900e-003** | **0.3005** | **1.0000e-003** | **0.3015** | **0.0799** | **9.2000e-004** | **0.0808** | **0.0000** | **206.3080** | **206.3080** | **3.6500e-003** | **4.5500e-003** | **207.7555** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.1198 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0171 | 0.1117 | 0.2346 | 3.9000e-004 | | 2.6500e-003 | 2.6500e-003 | | 2.6500e-003 | 2.6500e-003 | 0.0000 | 33.3199 | 33.3199 | 1.3500e-003 | 0.0000 | 33.3536 |
| **Total** | **1.1369** | **0.1117** | **0.2346** | **3.9000e-004** | | **2.6500e-003** | **2.6500e-003** | | **2.6500e-003** | **2.6500e-003** | **0.0000** | **33.3199** | **33.3199** | **1.3500e-003** | **0.0000** | **33.3536** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2031

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0673 | 0.0364 | 0.5921 | 2.0900e-003 | 0.3005 | 1.0000e-003 | 0.3015 | 0.0799 | 9.2000e-004 | 0.0808 | 0.0000 | 206.3080 | 206.3080 | 3.6500e-003 | 4.5500e-003 | 207.7555 |
| **Total** | **0.0673** | **0.0364** | **0.5921** | **2.0900e-003** | **0.3005** | **1.0000e-003** | **0.3015** | **0.0799** | **9.2000e-004** | **0.0808** | **0.0000** | **206.3080** | **206.3080** | **3.6500e-003** | **4.5500e-003** | **207.7555** |

## 3.6 Architectural Coating - 2032

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.1241 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0171 | 0.1122 | 0.2355 | 3.9000e-004 | | 2.6600e-003 | 2.6600e-003 | | 2.6600e-003 | 2.6600e-003 | 0.0000 | 33.4476 | 33.4476 | 1.3500e-003 | 0.0000 | 33.4815 |
| **Total** | **1.1413** | **0.1122** | **0.2355** | **3.9000e-004** | | **2.6600e-003** | **2.6600e-003** | | **2.6600e-003** | **2.6600e-003** | **0.0000** | **33.4476** | **33.4476** | **1.3500e-003** | **0.0000** | **33.4815** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2032

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0635 | 0.0343 | 0.5747 | 2.0600e-003 | 0.3016 | 9.4000e-004 | 0.3026 | 0.0802 | 8.6000e-004 | 0.0810 | 0.0000 | 204.3894 | 204.3894 | 3.4200e-003 | 4.4400e-003 | 205.7983 |
| **Total** | **0.0635** | **0.0343** | **0.5747** | **2.0600e-003** | **0.3016** | **9.4000e-004** | **0.3026** | **0.0802** | **8.6000e-004** | **0.0810** | **0.0000** | **204.3894** | **204.3894** | **3.4200e-003** | **4.4400e-003** | **205.7983** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.1241 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0171 | 0.1122 | 0.2355 | 3.9000e-004 | | 2.6600e-003 | 2.6600e-003 | | 2.6600e-003 | 2.6600e-003 | 0.0000 | 33.4476 | 33.4476 | 1.3500e-003 | 0.0000 | 33.4814 |
| **Total** | **1.1413** | **0.1122** | **0.2355** | **3.9000e-004** | | **2.6600e-003** | **2.6600e-003** | | **2.6600e-003** | **2.6600e-003** | **0.0000** | **33.4476** | **33.4476** | **1.3500e-003** | **0.0000** | **33.4814** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2032

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0635 | 0.0343 | 0.5747 | 2.0600e-003 | 0.3016 | 9.4000e-004 | 0.3026 | 0.0802 | 8.6000e-004 | 0.0810 | 0.0000 | 204.3894 | 204.3894 | 3.4200e-003 | 4.4400e-003 | 205.7983 |
| **Total** | **0.0635** | **0.0343** | **0.5747** | **2.0600e-003** | **0.3016** | **9.4000e-004** | **0.3026** | **0.0802** | **8.6000e-004** | **0.0810** | **0.0000** | **204.3894** | **204.3894** | **3.4200e-003** | **4.4400e-003** | **205.7983** |

## 3.6 Architectural Coating - 2033

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.1156 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0170 | 0.1113 | 0.2337 | 3.9000e-004 | | 2.6400e-003 | 2.6400e-003 | | 2.6400e-003 | 2.6400e-003 | 0.0000 | 33.1923 | 33.1923 | 1.3400e-003 | 0.0000 | 33.2259 |
| **Total** | **1.1326** | **0.1113** | **0.2337** | **3.9000e-004** | | **2.6400e-003** | **2.6400e-003** | | **2.6400e-003** | **2.6400e-003** | **0.0000** | **33.1923** | **33.1923** | **1.3400e-003** | **0.0000** | **33.2259** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2033

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0593 | 0.0323 | 0.5535 | 2.0100e-003 | 0.2993 | 8.8000e-004 | 0.3002 | 0.0796 | 8.1000e-004 | 0.0804 | 0.0000 | 200.4610 | 200.4610 | 3.1700e-003 | 4.3000e-003 | 201.8228 |
| **Total** | **0.0593** | **0.0323** | **0.5535** | **2.0100e-003** | **0.2993** | **8.8000e-004** | **0.3002** | **0.0796** | **8.1000e-004** | **0.0804** | **0.0000** | **200.4610** | **200.4610** | **3.1700e-003** | **4.3000e-003** | **201.8228** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.1156 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0170 | 0.1113 | 0.2337 | 3.9000e-004 | | 2.6400e-003 | 2.6400e-003 | | 2.6400e-003 | 2.6400e-003 | 0.0000 | 33.1923 | 33.1923 | 1.3400e-003 | 0.0000 | 33.2258 |
| **Total** | **1.1326** | **0.1113** | **0.2337** | **3.9000e-004** | | **2.6400e-003** | **2.6400e-003** | | **2.6400e-003** | **2.6400e-003** | **0.0000** | **33.1923** | **33.1923** | **1.3400e-003** | **0.0000** | **33.2258** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2033

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0593 | 0.0323 | 0.5535 | 2.0100e-003 | 0.2993 | 8.8000e-004 | 0.3002 | 0.0796 | 8.1000e-004 | 0.0804 | 0.0000 | 200.4610 | 200.4610 | 3.1700e-003 | 4.3000e-003 | 201.8228 |
| **Total** | **0.0593** | **0.0323** | **0.5535** | **2.0100e-003** | **0.2993** | **8.8000e-004** | **0.3002** | **0.0796** | **8.1000e-004** | **0.0804** | **0.0000** | **200.4610** | **200.4610** | **3.1700e-003** | **4.3000e-003** | **201.8228** |

## 3.6 Architectural Coating - 2034

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.1156 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0170 | 0.1113 | 0.2337 | 3.9000e-004 | | 2.6400e-003 | 2.6400e-003 | | 2.6400e-003 | 2.6400e-003 | 0.0000 | 33.1923 | 33.1923 | 1.3400e-003 | 0.0000 | 33.2259 |
| **Total** | **1.1326** | **0.1113** | **0.2337** | **3.9000e-004** | | **2.6400e-003** | **2.6400e-003** | | **2.6400e-003** | **2.6400e-003** | **0.0000** | **33.1923** | **33.1923** | **1.3400e-003** | **0.0000** | **33.2259** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2034

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0560 | 0.0308 | 0.5387 | 1.9800e-003 | 0.2993 | 8.2000e-004 | 0.3002 | 0.0796 | 7.6000e-004 | 0.0803 | 0.0000 | 198.3852 | 198.3852 | 2.9800e-003 | 4.2200e-003 | 199.7172 |
| **Total** | **0.0560** | **0.0308** | **0.5387** | **1.9800e-003** | **0.2993** | **8.2000e-004** | **0.3002** | **0.0796** | **7.6000e-004** | **0.0803** | **0.0000** | **198.3852** | **198.3852** | **2.9800e-003** | **4.2200e-003** | **199.7172** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.1156 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0170 | 0.1113 | 0.2337 | 3.9000e-004 | | 2.6400e-003 | 2.6400e-003 | | 2.6400e-003 | 2.6400e-003 | 0.0000 | 33.1923 | 33.1923 | 1.3400e-003 | 0.0000 | 33.2258 |
| **Total** | **1.1326** | **0.1113** | **0.2337** | **3.9000e-004** | | **2.6400e-003** | **2.6400e-003** | | **2.6400e-003** | **2.6400e-003** | **0.0000** | **33.1923** | **33.1923** | **1.3400e-003** | **0.0000** | **33.2258** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2034

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0560 | 0.0308 | 0.5387 | 1.9800e-003 | 0.2993 | 8.2000e-004 | 0.3002 | 0.0796 | 7.6000e-004 | 0.0803 | 0.0000 | 198.3852 | 198.3852 | 2.9800e-003 | 4.2200e-003 | 199.7172 |
| **Total** | **0.0560** | **0.0308** | **0.5387** | **1.9800e-003** | **0.2993** | **8.2000e-004** | **0.3002** | **0.0796** | **7.6000e-004** | **0.0803** | **0.0000** | **198.3852** | **198.3852** | **2.9800e-003** | **4.2200e-003** | **199.7172** |

## 3.6 Architectural Coating - 2035

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.1198 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0154 | 0.0989 | 0.2342 | 3.9000e-004 | | 1.2900e-003 | 1.2900e-003 | | 1.2900e-003 | 1.2900e-003 | 0.0000 | 33.3200 | 33.3200 | 1.2300e-003 | 0.0000 | 33.3507 |
| **Total** | **1.1352** | **0.0989** | **0.2342** | **3.9000e-004** | | **1.2900e-003** | **1.2900e-003** | | **1.2900e-003** | **1.2900e-003** | **0.0000** | **33.3200** | **33.3200** | **1.2300e-003** | **0.0000** | **33.3507** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2035

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0534 | 0.0298 | 0.5281 | 1.9600e-003 | 0.3005 | 7.8000e-004 | 0.3013 | 0.0799 | 7.2000e-004 | 0.0806 | 0.0000 | 197.3535 | 197.3535 | 2.8200e-003 | 4.1700e-003 | 198.6668 |
| **Total** | **0.0534** | **0.0298** | **0.5281** | **1.9600e-003** | **0.3005** | **7.8000e-004** | **0.3013** | **0.0799** | **7.2000e-004** | **0.0806** | **0.0000** | **197.3535** | **197.3535** | **2.8200e-003** | **4.1700e-003** | **198.6668** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.1198 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0154 | 0.0989 | 0.2342 | 3.9000e-004 | | 1.2900e-003 | 1.2900e-003 | | 1.2900e-003 | 1.2900e-003 | 0.0000 | 33.3199 | 33.3199 | 1.2300e-003 | 0.0000 | 33.3507 |
| **Total** | **1.1352** | **0.0989** | **0.2342** | **3.9000e-004** | | **1.2900e-003** | **1.2900e-003** | | **1.2900e-003** | **1.2900e-003** | **0.0000** | **33.3199** | **33.3199** | **1.2300e-003** | **0.0000** | **33.3507** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2035

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0534 | 0.0298 | 0.5281 | 1.9600e-003 | 0.3005 | 7.8000e-004 | 0.3013 | 0.0799 | 7.2000e-004 | 0.0806 | 0.0000 | 197.3535 | 197.3535 | 2.8200e-003 | 4.1700e-003 | 198.6668 |
| **Total** | **0.0534** | **0.0298** | **0.5281** | **1.9600e-003** | **0.3005** | **7.8000e-004** | **0.3013** | **0.0799** | **7.2000e-004** | **0.0806** | **0.0000** | **197.3535** | **197.3535** | **2.8200e-003** | **4.1700e-003** | **198.6668** |

## 3.6 Architectural Coating - 2036

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.8324 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0114 | 0.0735 | 0.1740 | 2.9000e-004 | | 9.6000e-004 | 9.6000e-004 | | 9.6000e-004 | 9.6000e-004 | 0.0000 | 24.7666 | 24.7666 | 9.2000e-004 | 0.0000 | 24.7894 |
| **Total** | **0.8438** | **0.0735** | **0.1740** | **2.9000e-004** | | **9.6000e-004** | **9.6000e-004** | | **9.6000e-004** | **9.6000e-004** | **0.0000** | **24.7666** | **24.7666** | **9.2000e-004** | **0.0000** | **24.7894** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2036

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0397 | 0.0221 | 0.3925 | 1.4600e-003 | 0.2233 | 5.8000e-004 | 0.2239 | 0.0594 | 5.3000e-004 | 0.0599 | 0.0000 | 146.6919 | 146.6919 | 2.1000e-003 | 3.1000e-003 | 147.6680 |
| **Total** | **0.0397** | **0.0221** | **0.3925** | **1.4600e-003** | **0.2233** | **5.8000e-004** | **0.2239** | **0.0594** | **5.3000e-004** | **0.0599** | **0.0000** | **146.6919** | **146.6919** | **2.1000e-003** | **3.1000e-003** | **147.6680** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.8324 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0114 | 0.0735 | 0.1740 | 2.9000e-004 | | 9.6000e-004 | 9.6000e-004 | | 9.6000e-004 | 9.6000e-004 | 0.0000 | 24.7665 | 24.7665 | 9.2000e-004 | 0.0000 | 24.7894 |
| **Total** | **0.8438** | **0.0735** | **0.1740** | **2.9000e-004** | | **9.6000e-004** | **9.6000e-004** | | **9.6000e-004** | **9.6000e-004** | **0.0000** | **24.7665** | **24.7665** | **9.2000e-004** | **0.0000** | **24.7894** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

### 3.6 Architectural Coating - 2036

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0397 | 0.0221 | 0.3925 | 1.4600e-003 | 0.2233 | 5.8000e-004 | 0.2239 | 0.0594 | 5.3000e-004 | 0.0599 | 0.0000 | 146.6919 | 146.6919 | 2.1000e-003 | 3.1000e-003 | 147.6680 |
| **Total** | **0.0397** | **0.0221** | **0.3925** | **1.4600e-003** | **0.2233** | **5.8000e-004** | **0.2239** | **0.0594** | **5.3000e-004** | **0.0599** | **0.0000** | **146.6919** | **146.6919** | **2.1000e-003** | **3.1000e-003** | **147.6680** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Improve Pedestrian Network

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 3.2290 | 6.3911 | 37.1145 | 0.1030 | 13.2094 | 0.0736 | 13.2830 | 3.5309 | 0.0693 | 3.6001 | 0.0000 | 10,233.7299 | 10,233.7299 | 0.3969 | 0.4835 | 10,387.7350 |
| Unmitigated | 3.2705 | 6.4992 | 37.7522 | 0.1050 | 13.4790 | 0.0751 | 13.5540 | 3.6029 | 0.0706 | 3.6736 | 0.0000 | 10,438.6054 | 10,438.6054 | 0.4033 | 0.4921 | 10,595.3399 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 0.00 | 0.00 | 0.00 | | |
| Elementary School | 459.00 | 459.00 | 459.00 | 2,167,895 | 2,124,537 |
| Other Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Single Family Housing | 6,976.16 | 6,976.16 | 6976.16 | 33,833,574 | 33,156,903 |
| Total | 7,435.16 | 7,435.16 | 7,435.16 | 36,001,469 | 35,281,439 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 14.12 | 10.85 | 10.85 | 33.00 | 48.00 | 19.00 | 100 | 0 | 0 |
| Elementary School | 14.12 | 10.85 | 10.85 | 65.00 | 30.00 | 5.00 | 100 | 0 | 0 |
| Other Asphalt Surfaces | 14.12 | 10.85 | 10.85 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Single Family Housing | 16.05 | 10.85 | 11.14 | 45.60 | 19.00 | 35.40 | 100 | 0 | 0 |

## 4.4 Fleet Mix

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.552787 | 0.055429 | 0.175422 | 0.126588 | 0.020626 | 0.005781 | 0.013059 | 0.024880 | 0.000595 | 0.000297 | 0.020966 | 0.001153 | 0.002414 |
| Elementary School | 0.552787 | 0.055429 | 0.175422 | 0.126588 | 0.020626 | 0.005781 | 0.013059 | 0.024880 | 0.000595 | 0.000297 | 0.020966 | 0.001153 | 0.002414 |
| Other Asphalt Surfaces | 0.552787 | 0.055429 | 0.175422 | 0.126588 | 0.020626 | 0.005781 | 0.013059 | 0.024880 | 0.000595 | 0.000297 | 0.020966 | 0.001153 | 0.002414 |
| Single Family Housing | 0.552787 | 0.055429 | 0.175422 | 0.126588 | 0.020626 | 0.005781 | 0.013059 | 0.024880 | 0.000595 | 0.000297 | 0.020966 | 0.001153 | 0.002414 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 325.4911 | 325.4911 | 0.0921 | 0.0112 | 331.1182 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 325.4911 | 325.4911 | 0.0921 | 0.0112 | 331.1182 |
| NaturalGas Mitigated | 0.0971 | 0.8316 | 0.3646 | 5.3000e-003 | | 0.0671 | 0.0671 | | 0.0671 | 0.0671 | 0.0000 | 961.2527 | 961.2527 | 0.0184 | 0.0176 | 966.9649 |
| NaturalGas Unmitigated | 0.0971 | 0.8316 | 0.3646 | 5.3000e-003 | | 0.0671 | 0.0671 | | 0.0671 | 0.0671 | 0.0000 | 961.2527 | 961.2527 | 0.0184 | 0.0176 | 966.9649 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Elementary School | 529335 | 2.8500e-003 | 0.0260 | 0.0218 | 1.6000e-004 | | 1.9700e-003 | 1.9700e-003 | | 1.9700e-003 | 1.9700e-003 | 0.0000 | 28.2473 | 28.2473 | 5.4000e-004 | 5.2000e-004 | 28.4152 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 1.74839e+007 | 0.0943 | 0.8056 | 0.3428 | 5.1400e-003 | | 0.0651 | 0.0651 | | 0.0651 | 0.0651 | 0.0000 | 933.0054 | 933.0054 | 0.0179 | 0.0171 | 938.5498 |
| **Total** | | **0.0971** | **0.8316** | **0.3646** | **5.3000e-003** | | **0.0671** | **0.0671** | | **0.0671** | **0.0671** | **0.0000** | **961.2527** | **961.2527** | **0.0184** | **0.0176** | **966.9649** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Elementary School | 529335 | 2.8500e-003 | 0.0260 | 0.0218 | 1.6000e-004 | | 1.9700e-003 | 1.9700e-003 | | 1.9700e-003 | 1.9700e-003 | 0.0000 | 28.2473 | 28.2473 | 5.4000e-004 | 5.2000e-004 | 28.4152 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 1.74839e+007 | 0.0943 | 0.8056 | 0.3428 | 5.1400e-003 | | 0.0651 | 0.0651 | | 0.0651 | 0.0651 | 0.0000 | 933.0054 | 933.0054 | 0.0179 | 0.0171 | 938.5498 |
| **Total** | | **0.0971** | **0.8316** | **0.3646** | **5.3000e-003** | | **0.0671** | **0.0671** | | **0.0671** | **0.0671** | **0.0000** | **961.2527** | **961.2527** | **0.0184** | **0.0176** | **966.9649** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Elementary School | 306992 | 16.2462 | 4.6000e-003 | 5.6000e-004 | 16.5271 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 5.84356e+006 | 309.2449 | 0.0875 | 0.0106 | 314.5911 |
| **Total** | | **325.4911** | **0.0921** | **0.0112** | **331.1182** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 5.3 Energy by Land Use - Electricity

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Elementary School | 306992 | 16.2462 | 4.6000e-003 | 5.6000e-004 | 16.5271 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 5.84356e+006 | 309.2449 | 0.0875 | 0.0106 | 314.5911 |
| **Total** | | **325.4911** | **0.0921** | **0.0112** | **331.1182** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Cleaning Supplies

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 6.5979 | 0.3267 | 4.2757 | 1.9500e-003 | | 0.0451 | 0.0451 | | 0.0451 | 0.0451 | 0.0000 | 326.4194 | 326.4194 | 0.0106 | 5.8700e-003 | 328.4339 |
| Unmitigated | 7.0799 | 0.3396 | 5.5922 | 2.0500e-003 | | 0.0528 | 0.0528 | | 0.0528 | 0.0528 | 0.0000 | 329.1166 | 329.1166 | 0.0147 | 5.8700e-003 | 331.2332 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 1.3301 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 5.5533 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.0324 | 0.2764 | 0.1176 | 1.7600e-003 | | 0.0224 | 0.0224 | | 0.0224 | 0.0224 | 0.0000 | 320.1403 | 320.1403 | 6.1400e-003 | 5.8700e-003 | 322.0427 |
| Landscaping | 0.1641 | 0.0631 | 5.4746 | 2.9000e-004 | | 0.0305 | 0.0305 | | 0.0305 | 0.0305 | 0.0000 | 8.9764 | 8.9764 | 8.5700e-003 | 0.0000 | 9.1905 |
| **Total** | **7.0799** | **0.3396** | **5.5922** | **2.0500e-003** | | **0.0528** | **0.0528** | | **0.0528** | **0.0528** | **0.0000** | **329.1166** | **329.1166** | **0.0147** | **5.8700e-003** | **331.2332** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 1.3301 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 5.1485 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.0324 | 0.2764 | 0.1176 | 1.7600e-003 | | 0.0224 | 0.0224 | | 0.0224 | 0.0224 | 0.0000 | 320.1403 | 320.1403 | 6.1400e-003 | 5.8700e-003 | 322.0427 |
| Landscaping | 0.0870 | 0.0502 | 4.1581 | 1.9000e-004 | | 0.0227 | 0.0227 | | 0.0227 | 0.0227 | 0.0000 | 6.2791 | 6.2791 | 4.4800e-003 | 0.0000 | 6.3912 |
| **Total** | **6.5979** | **0.3267** | **4.2757** | **1.9500e-003** | | **0.0451** | **0.0451** | | **0.0451** | **0.0451** | **0.0000** | **326.4194** | **326.4194** | **0.0106** | **5.8700e-003** | **328.4339** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 38.0322 | 1.6285 | 0.0391 | 90.3878 |
| Unmitigated | 40.0276 | 1.6291 | 0.0391 | 92.4177 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| City Park | 0 / 19.302 | 3.5752 | 1.0100e-003 | 1.2000e-004 | 3.6370 |
| Elementary School | 1.63636 / 4.20779 | 1.7671 | 0.0537 | 1.3000e-003 | 3.4969 |
| Other Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 48.1488 / 30.3547 | 34.6854 | 1.5744 | 0.0377 | 85.2838 |
| **Total** | | **40.0276** | **1.6291** | **0.0391** | **92.4177** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| City Park | 0 / 15.4416 | 2.8601 | 8.1000e-004 | 1.0000e-004 | 2.9096 |
| Elementary School | 1.63636 / 3.36623 | 1.6112 | 0.0536 | 1.3000e-003 | 3.3383 |
| Other Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 48.1488 / 24.2838 | 33.5609 | 1.5741 | 0.0377 | 84.1399 |
| **Total** | | **38.0322** | **1.6285** | **0.0391** | **90.3878** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 204.3124 | 12.0745 | 0.0000 | 506.1754 |
| Unmitigated | 204.3124 | 12.0745 | 0.0000 | 506.1754 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| City Park | 1.39 | 0.2822 | 0.0167 | 0.0000 | 0.6990 |
| Elementary School | 123.19 | 25.0065 | 1.4778 | 0.0000 | 61.9524 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 881.93 | 179.0238 | 10.5800 | 0.0000 | 443.5239 |
| **Total** | | **204.3124** | **12.0745** | **0.0000** | **506.1754** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 8.2 Waste by Land Use

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| City Park | 1.39 | 0.2822 | 0.0167 | 0.0000 | 0.6990 |
| Elementary School | 123.19 | 25.0065 | 1.4778 | 0.0000 | 61.9524 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 881.93 | 179.0238 | 10.5800 | 0.0000 | 443.5239 |
| **Total** | | **204.3124** | **12.0745** | **0.0000** | **506.1754** |

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

# Hat Ranch Project

**San Joaquin Valley Unified APCD Air District, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Elementary School | 675.00 | Student | 16.40 | 56,432.27 | 0 |
| Other Asphalt Surfaces | 46.60 | Acre | 46.60 | 2,029,896.00 | 0 |
| City Park | 16.20 | Acre | 16.20 | 705,672.00 | 0 |
| Single Family Housing | 739.00 | Dwelling Unit | 105.40 | 1,330,200.00 | 2344 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.7 | **Precipitation Freq (Days)** | 45 |
| **Climate Zone** | 2 | | | **Operational Year** | 2035 |
| **Utility Company** | Pacific Gas and Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 116.67 | **CH4 Intensity (lb/MWhr)** | 0.033 | **N2O Intensity (lb/MWhr)** | 0.004 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor adjusted per PG&E's compliance with RPS.

Land Use - Lot acrages adjusted according to site plan.

Construction Phase - Architectural coating phase timing adjusted to occur during building construction.

Vehicle Trips - Trip generation rates and trip lengths updated based on Fehr and Peers Traffic Analaysis.

Mobile Land Use Mitigation -

Water Mitigation - Water conservation strategy applied to reflect compliance with MWELO.

Area Mitigation - All electric landscaping equipment would be used, pursuant to AB 1346
Low VOC cleaning supplies required, per SJVAPCD Rule 4663

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstructionPhase | NumDays | 220.00 | 3,100.00 |
| tblLandUse | LotAcreage | 1.30 | 16.40 |
| tblLandUse | LotAcreage | 239.94 | 105.40 |
| tblProjectCharacteristics | CO2IntensityFactor | 203.98 | 116.67 |
| tblVehicleTrips | CC_TL | 7.30 | 10.85 |
| tblVehicleTrips | CC_TL | 7.30 | 10.85 |
| tblVehicleTrips | CC_TL | 7.30 | 10.85 |
| tblVehicleTrips | CNW_TL | 7.30 | 10.85 |
| tblVehicleTrips | CNW_TL | 7.30 | 10.85 |
| tblVehicleTrips | CNW_TL | 7.30 | 10.85 |
| tblVehicleTrips | CW_TL | 9.50 | 14.12 |
| tblVehicleTrips | CW_TL | 9.50 | 14.12 |
| tblVehicleTrips | CW_TL | 9.50 | 14.12 |
| tblVehicleTrips | DV_TP | 28.00 | 0.00 |
| tblVehicleTrips | DV_TP | 25.00 | 0.00 |
| tblVehicleTrips | DV_TP | 11.00 | 0.00 |
| tblVehicleTrips | HO_TL | 7.50 | 11.14 |
| tblVehicleTrips | HS_TL | 7.30 | 10.85 |
| tblVehicleTrips | HW_TL | 10.80 | 16.05 |
| tblVehicleTrips | PB_TP | 6.00 | 0.00 |
| tblVehicleTrips | PB_TP | 12.00 | 0.00 |
| tblVehicleTrips | PB_TP | 3.00 | 0.00 |
| tblVehicleTrips | PR_TP | 66.00 | 100.00 |
| tblVehicleTrips | PR_TP | 63.00 | 100.00 |
| tblVehicleTrips | PR_TP | 86.00 | 100.00 |
| tblVehicleTrips | ST_TR | 1.96 | 0.00 |
| tblVehicleTrips | ST_TR | 0.00 | 0.68 |
| tblVehicleTrips | ST_TR | 9.54 | 9.44 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | |
|---|---|---|---|
| tblVehicleTrips | SU_TR | 2.19 | 0.00 |
| tblVehicleTrips | SU_TR | 0.00 | 0.68 |
| tblVehicleTrips | SU_TR | 8.55 | 9.44 |
| tblVehicleTrips | WD_TR | 0.78 | 0.00 |
| tblVehicleTrips | WD_TR | 1.89 | 0.68 |
| tblWoodstoves | NumberCatalytic | 105.40 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 105.40 | 0.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2022 | 3.7041 | 38.8883 | 29.6734 | 0.0637 | 19.8049 | 1.6358 | 21.4183 | 10.1417 | 1.5049 | 11.6260 | 0.0000 | 6,170.8327 | 6,170.8327 | 1.9490 | 4.3100e-003 | 6,220.8436 |
| 2023 | 3.3943 | 34.5548 | 28.6262 | 0.0636 | 9.3679 | 1.4253 | 10.7932 | 3.6973 | 1.3113 | 5.0086 | 0.0000 | 6,166.6697 | 6,166.6697 | 1.9485 | 3.9600e-003 | 6,216.5621 |
| 2024 | 16.6006 | 40.3560 | 70.7600 | 0.2630 | 17.8277 | 0.8982 | 18.7259 | 4.8114 | 0.8495 | 5.6610 | 0.0000 | 27,149.8730 | 27,149.8730 | 0.9983 | 1.9974 | 27,770.0489 |
| 2025 | 16.0434 | 38.9000 | 67.1411 | 0.2568 | 17.8277 | 0.7996 | 18.6273 | 4.8114 | 0.7564 | 5.5678 | 0.0000 | 26,626.2592 | 26,626.2592 | 0.9587 | 1.9431 | 27,229.2732 |
| 2026 | 15.6615 | 38.5076 | 64.4252 | 0.2511 | 17.8277 | 0.7960 | 18.6237 | 4.8114 | 0.7530 | 5.5644 | 0.0000 | 26,127.1867 | 26,127.1867 | 0.9290 | 1.8924 | 26,714.3419 |
| 2027 | 15.3198 | 38.1348 | 61.9420 | 0.2454 | 17.8277 | 0.7913 | 18.6190 | 4.8114 | 0.7486 | 5.5601 | 0.0000 | 25,629.3275 | 25,629.3275 | 0.9029 | 1.8428 | 26,201.0449 |
| 2028 | 15.0105 | 37.8385 | 59.8961 | 0.2403 | 17.8277 | 0.7866 | 18.6143 | 4.8114 | 0.7442 | 5.5557 | 0.0000 | 25,172.8273 | 25,172.8273 | 0.8807 | 1.7972 | 25,730.3979 |
| 2029 | 14.7201 | 37.5567 | 58.1404 | 0.2355 | 17.8277 | 0.7819 | 18.6096 | 4.8114 | 0.7399 | 5.5513 | 0.0000 | 24,750.0464 | 24,750.0464 | 0.8614 | 1.7548 | 25,294.4972 |
| 2030 | 14.3533 | 32.5089 | 56.7341 | 0.2353 | 17.8277 | 0.3671 | 18.1948 | 4.8115 | 0.3566 | 5.1681 | 0.0000 | 24,714.3791 | 24,714.3791 | 0.3560 | 1.7171 | 25,234.9682 |
| 2031 | 14.0943 | 32.3316 | 55.4605 | 0.2315 | 17.8277 | 0.3632 | 18.1910 | 4.8115 | 0.3531 | 5.1646 | 0.0000 | 24,379.7896 | 24,379.7896 | 0.3412 | 1.6841 | 24,890.1921 |
| 2032 | 13.8702 | 32.1853 | 54.4036 | 0.2281 | 17.8277 | 0.3597 | 18.1875 | 4.8115 | 0.3499 | 5.1613 | 0.0000 | 24,085.8487 | 24,085.8487 | 0.3285 | 1.6557 | 24,587.4665 |
| 2033 | 13.6684 | 32.0663 | 53.5067 | 0.2252 | 17.8278 | 0.3565 | 18.1843 | 4.8115 | 0.3469 | 5.1584 | 0.0000 | 23,827.1961 | 23,827.1961 | 0.3175 | 1.6311 | 24,321.2149 |
| 2034 | 13.4898 | 31.9517 | 52.7243 | 0.2226 | 17.8278 | 0.3534 | 18.1812 | 4.8115 | 0.3440 | 5.1555 | 0.0000 | 23,596.7469 | 23,596.7469 | 0.3077 | 1.6094 | 24,084.0346 |
| 2035 | 13.2244 | 30.9696 | 52.0198 | 0.2203 | 17.8278 | 0.2824 | 18.1101 | 4.8115 | 0.2732 | 5.0846 | 0.0000 | 23,395.0147 | 23,395.0147 | 0.2899 | 1.5904 | 23,876.2169 |
| 2036 | 13.2244 | 30.9696 | 52.0198 | 0.2203 | 17.8278 | 0.2824 | 18.1101 | 4.8115 | 0.2732 | 5.0846 | 0.0000 | 23,395.0147 | 23,395.0147 | 0.2899 | 1.5904 | 23,876.2169 |
| **Maximum** | **16.6006** | **40.3560** | **70.7600** | **0.2630** | **19.8049** | **1.6358** | **21.4183** | **10.1417** | **1.5049** | **11.6260** | **0.0000** | **27,149.8730** | **27,149.8730** | **1.9490** | **1.9974** | **27,770.0489** |

## 2.1 Overall Construction (Maximum Daily Emission)

**Mitigated Construction**

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2022 | 3.7041 | 38.8883 | 29.6734 | 0.0637 | 19.8049 | 1.6358 | 21.4183 | 10.1417 | 1.5049 | 11.6260 | 0.0000 | 6,170.8327 | 6,170.8327 | 1.9490 | 4.3100e-003 | 6,220.8436 |
| 2023 | 3.3943 | 34.5548 | 28.6262 | 0.0636 | 9.3679 | 1.4253 | 10.7932 | 3.6973 | 1.3113 | 5.0086 | 0.0000 | 6,166.6697 | 6,166.6697 | 1.9485 | 3.9600e-003 | 6,216.5621 |
| 2024 | 16.6006 | 40.3560 | 70.7600 | 0.2630 | 17.8277 | 0.8982 | 18.7259 | 4.8114 | 0.8495 | 5.6610 | 0.0000 | 27,149.8730 | 27,149.8730 | 0.9983 | 1.9974 | 27,770.0489 |
| 2025 | 16.0434 | 38.9000 | 67.1411 | 0.2568 | 17.8277 | 0.7996 | 18.6273 | 4.8114 | 0.7564 | 5.5678 | 0.0000 | 26,626.2592 | 26,626.2592 | 0.9587 | 1.9431 | 27,229.2732 |
| 2026 | 15.6615 | 38.5076 | 64.4252 | 0.2511 | 17.8277 | 0.7960 | 18.6237 | 4.8114 | 0.7530 | 5.5644 | 0.0000 | 26,127.1867 | 26,127.1867 | 0.9290 | 1.8924 | 26,714.3419 |
| 2027 | 15.3198 | 38.1348 | 61.9420 | 0.2454 | 17.8277 | 0.7913 | 18.6190 | 4.8114 | 0.7486 | 5.5601 | 0.0000 | 25,629.3275 | 25,629.3275 | 0.9029 | 1.8428 | 26,201.0449 |
| 2028 | 15.0105 | 37.8385 | 59.8961 | 0.2403 | 17.8277 | 0.7866 | 18.6143 | 4.8114 | 0.7442 | 5.5557 | 0.0000 | 25,172.8273 | 25,172.8273 | 0.8807 | 1.7972 | 25,730.3979 |
| 2029 | 14.7201 | 37.5567 | 58.1404 | 0.2355 | 17.8277 | 0.7819 | 18.6096 | 4.8114 | 0.7399 | 5.5513 | 0.0000 | 24,750.0464 | 24,750.0464 | 0.8614 | 1.7548 | 25,294.4972 |
| 2030 | 14.3533 | 32.5089 | 56.7341 | 0.2353 | 17.8277 | 0.3671 | 18.1948 | 4.8115 | 0.3566 | 5.1681 | 0.0000 | 24,714.3791 | 24,714.3791 | 0.3560 | 1.7171 | 25,234.9682 |
| 2031 | 14.0943 | 32.3316 | 55.4605 | 0.2315 | 17.8277 | 0.3632 | 18.1910 | 4.8115 | 0.3531 | 5.1646 | 0.0000 | 24,379.7896 | 24,379.7896 | 0.3412 | 1.6841 | 24,890.1921 |
| 2032 | 13.8702 | 32.1853 | 54.4036 | 0.2281 | 17.8277 | 0.3597 | 18.1875 | 4.8115 | 0.3499 | 5.1613 | 0.0000 | 24,085.8487 | 24,085.8487 | 0.3285 | 1.6557 | 24,587.4665 |
| 2033 | 13.6684 | 32.0663 | 53.5067 | 0.2252 | 17.8278 | 0.3565 | 18.1843 | 4.8115 | 0.3469 | 5.1584 | 0.0000 | 23,827.1961 | 23,827.1961 | 0.3175 | 1.6311 | 24,321.2149 |
| 2034 | 13.4898 | 31.9517 | 52.7243 | 0.2226 | 17.8278 | 0.3534 | 18.1812 | 4.8115 | 0.3440 | 5.1555 | 0.0000 | 23,596.7469 | 23,596.7469 | 0.3077 | 1.6094 | 24,084.0345 |
| 2035 | 13.2244 | 30.9696 | 52.0198 | 0.2203 | 17.8278 | 0.2824 | 18.1101 | 4.8115 | 0.2732 | 5.0846 | 0.0000 | 23,395.0147 | 23,395.0147 | 0.2899 | 1.5904 | 23,876.2169 |
| 2036 | 13.2244 | 30.9696 | 52.0198 | 0.2203 | 17.8278 | 0.2824 | 18.1101 | 4.8115 | 0.2732 | 5.0846 | 0.0000 | 23,395.0147 | 23,395.0147 | 0.2899 | 1.5904 | 23,876.2169 |
| **Maximum** | **16.6006** | **40.3560** | **70.7600** | **0.2630** | **19.8049** | **1.6358** | **21.4183** | **10.1417** | **1.5049** | **11.6260** | **0.0000** | **27,149.8730** | **27,149.8730** | **1.9490** | **1.9974** | **27,770.0489** |

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 40.3298 | 7.4439 | 63.6981 | 0.0463 | | 0.8835 | 0.8835 | | 0.8835 | 0.8835 | 0.0000 | 8,717.1181 | 8,717.1181 | 0.2699 | 0.1578 | 8,770.8892 |
| Energy | 0.5322 | 4.5566 | 1.9979 | 0.0290 | | 0.3677 | 0.3677 | | 0.3677 | 0.3677 | | 5,806.0259 | 5,806.0259 | 0.1113 | 0.1064 | 5,840.5282 |
| Mobile | 20.7055 | 33.5362 | 225.9265 | 0.6145 | 76.0754 | 0.4128 | 76.4882 | 20.2909 | 0.3885 | 20.6793 | | 67,383.0147 | 67,383.0147 | 2.3910 | 2.9112 | 68,310.3260 |
| **Total** | **61.5675** | **45.5367** | **291.6225** | **0.6898** | **76.0754** | **1.6640** | **77.7394** | **20.2909** | **1.6397** | **21.9305** | **0.0000** | **81,906.1587** | **81,906.1587** | **2.7722** | **3.1754** | **82,921.7435** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 37.2542 | 7.3004 | 49.0701 | 0.0451 | | 0.7975 | 0.7975 | | 0.7975 | 0.7975 | 0.0000 | 8,684.0825 | 8,684.0825 | 0.2199 | 0.1578 | 8,736.6033 |
| Energy | 0.5322 | 4.5566 | 1.9979 | 0.0290 | | 0.3677 | 0.3677 | | 0.3677 | 0.3677 | | 5,806.0259 | 5,806.0259 | 0.1113 | 0.1064 | 5,840.5282 |
| Mobile | 20.4788 | 32.9807 | 221.9619 | 0.6025 | 74.5539 | 0.4049 | 74.9588 | 19.8851 | 0.3810 | 20.2661 | | 66,058.6965 | 66,058.6965 | 2.3518 | 2.8601 | 66,969.7953 |
| **Total** | **58.2652** | **44.8377** | **273.0300** | **0.6766** | **74.5539** | **1.5701** | **76.1240** | **19.8851** | **1.5462** | **21.4313** | **0.0000** | **80,548.8048** | **80,548.8048** | **2.6830** | **3.1243** | **81,546.9268** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **5.36** | **1.53** | **6.38** | **1.91** | **2.00** | **5.64** | **2.08** | **2.00** | **5.70** | **2.28** | **0.00** | **1.66** | **1.66** | **3.22** | **1.61** | **1.66** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 5/1/2022 | 10/14/2022 | 5 | 120 | |
| 2 | Grading | Grading | 10/15/2022 | 12/22/2023 | 5 | 310 | |
| 3 | Paving | Paving | 12/23/2023 | 10/25/2024 | 5 | 220 | |
| 4 | Building Construction | Building Construction | 10/26/2024 | 9/12/2036 | 5 | 3100 | |
| 5 | Architectural Coating | Architectural Coating | 11/9/2024 | 9/26/2036 | 5 | 3100 | |

**Acres of Grading (Site Preparation Phase): 180**

**Acres of Grading (Grading Phase): 930**

**Acres of Paving: 46.6**

**Residential Indoor: 2,693,655; Residential Outdoor: 897,885; Non-Residential Indoor: 84,648; Non-Residential Outdoor: 28,216; Striped Parking Area: 121,794 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | | | |
|---|---|---|---|---|---|
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 1,439.00 | 537.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 288.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.2 Site Preparation - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 19.6570 | 0.0000 | 19.6570 | 10.1025 | 0.0000 | 10.1025 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.1701 | 33.0835 | 19.6978 | 0.0380 | | 1.6126 | 1.6126 | | 1.4836 | 1.4836 | | 3,686.0619 | 3,686.0619 | 1.1922 | | 3,715.8655 |
| **Total** | **3.1701** | **33.0835** | **19.6978** | **0.0380** | **19.6570** | **1.6126** | **21.2696** | **10.1025** | **1.4836** | **11.5860** | | **3,686.0619** | **3,686.0619** | **1.1922** | | **3,715.8655** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0713 | 0.0403 | 0.5687 | 1.4100e-003 | 0.1479 | 8.1000e-004 | 0.1487 | 0.0392 | 7.5000e-004 | 0.0400 | | 143.4799 | 143.4799 | 4.3200e-003 | 3.8800e-003 | 144.7450 |
| **Total** | **0.0713** | **0.0403** | **0.5687** | **1.4100e-003** | **0.1479** | **8.1000e-004** | **0.1487** | **0.0392** | **7.5000e-004** | **0.0400** | | **143.4799** | **143.4799** | **4.3200e-003** | **3.8800e-003** | **144.7450** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.2 Site Preparation - 2022

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 19.6570 | 0.0000 | 19.6570 | 10.1025 | 0.0000 | 10.1025 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.1701 | 33.0835 | 19.6978 | 0.0380 | | 1.6126 | 1.6126 | | 1.4836 | 1.4836 | 0.0000 | 3,686.0619 | 3,686.0619 | 1.1922 | | 3,715.8655 |
| **Total** | **3.1701** | **33.0835** | **19.6978** | **0.0380** | **19.6570** | **1.6126** | **21.2696** | **10.1025** | **1.4836** | **11.5860** | **0.0000** | **3,686.0619** | **3,686.0619** | **1.1922** | | **3,715.8655** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0713 | 0.0403 | 0.5687 | 1.4100e-003 | 0.1479 | 8.1000e-004 | 0.1487 | 0.0392 | 7.5000e-004 | 0.0400 | | 143.4799 | 143.4799 | 4.3200e-003 | 3.8800e-003 | 144.7450 |
| **Total** | **0.0713** | **0.0403** | **0.5687** | **1.4100e-003** | **0.1479** | **8.1000e-004** | **0.1487** | **0.0392** | **7.5000e-004** | **0.0400** | | **143.4799** | **143.4799** | **4.3200e-003** | **3.8800e-003** | **144.7450** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.6248 | 38.8435 | 29.0415 | 0.0621 | | 1.6349 | 1.6349 | | 1.5041 | 1.5041 | | 6,011.4105 | 6,011.4105 | 1.9442 | | 6,060.0158 |
| **Total** | **3.6248** | **38.8435** | **29.0415** | **0.0621** | **9.2036** | **1.6349** | **10.8385** | **3.6538** | **1.5041** | **5.1579** | | **6,011.4105** | **6,011.4105** | **1.9442** | | **6,060.0158** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0793 | 0.0448 | 0.6319 | 1.5700e-003 | 0.1643 | 9.0000e-004 | 0.1652 | 0.0436 | 8.3000e-004 | 0.0444 | | 159.4222 | 159.4222 | 4.8000e-003 | 4.3100e-003 | 160.8278 |
| **Total** | **0.0793** | **0.0448** | **0.6319** | **1.5700e-003** | **0.1643** | **9.0000e-004** | **0.1652** | **0.0436** | **8.3000e-004** | **0.0444** | | **159.4222** | **159.4222** | **4.8000e-003** | **4.3100e-003** | **160.8278** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2022

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.6248 | 38.8435 | 29.0415 | 0.0621 | | 1.6349 | 1.6349 | | 1.5041 | 1.5041 | 0.0000 | 6,011.4105 | 6,011.4105 | 1.9442 | | 6,060.0158 |
| **Total** | **3.6248** | **38.8435** | **29.0415** | **0.0621** | **9.2036** | **1.6349** | **10.8385** | **3.6538** | **1.5041** | **5.1579** | **0.0000** | **6,011.4105** | **6,011.4105** | **1.9442** | | **6,060.0158** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0793 | 0.0448 | 0.6319 | 1.5700e-003 | 0.1643 | 9.0000e-004 | 0.1652 | 0.0436 | 8.3000e-004 | 0.0444 | | 159.4222 | 159.4222 | 4.8000e-003 | 4.3100e-003 | 160.8278 |
| **Total** | **0.0793** | **0.0448** | **0.6319** | **1.5700e-003** | **0.1643** | **9.0000e-004** | **0.1652** | **0.0436** | **8.3000e-004** | **0.0444** | | **159.4222** | **159.4222** | **4.8000e-003** | **4.3100e-003** | **160.8278** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.3217 | 34.5156 | 28.0512 | 0.0621 | | 1.4245 | 1.4245 | | 1.3105 | 1.3105 | | 6,011.4777 | 6,011.4777 | 1.9442 | | 6,060.0836 |
| **Total** | **3.3217** | **34.5156** | **28.0512** | **0.0621** | **9.2036** | **1.4245** | **10.6281** | **3.6538** | **1.3105** | **4.9643** | | **6,011.4777** | **6,011.4777** | **1.9442** | | **6,060.0836** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0726 | 0.0392 | 0.5750 | 1.5200e-003 | 0.1643 | 8.5000e-004 | 0.1651 | 0.0436 | 7.8000e-004 | 0.0444 | | 155.1920 | 155.1920 | 4.2800e-003 | 3.9600e-003 | 156.4785 |
| **Total** | **0.0726** | **0.0392** | **0.5750** | **1.5200e-003** | **0.1643** | **8.5000e-004** | **0.1651** | **0.0436** | **7.8000e-004** | **0.0444** | | **155.1920** | **155.1920** | **4.2800e-003** | **3.9600e-003** | **156.4785** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2023

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.3217 | 34.5156 | 28.0512 | 0.0621 | | 1.4245 | 1.4245 | | 1.3105 | 1.3105 | 0.0000 | 6,011.4777 | 6,011.4777 | 1.9442 | | 6,060.0836 |
| **Total** | **3.3217** | **34.5156** | **28.0512** | **0.0621** | **9.2036** | **1.4245** | **10.6281** | **3.6538** | **1.3105** | **4.9643** | **0.0000** | **6,011.4777** | **6,011.4777** | **1.9442** | | **6,060.0836** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0726 | 0.0392 | 0.5750 | 1.5200e-003 | 0.1643 | 8.5000e-004 | 0.1651 | 0.0436 | 7.8000e-004 | 0.0444 | | 155.1920 | 155.1920 | 4.2800e-003 | 3.9600e-003 | 156.4785 |
| **Total** | **0.0726** | **0.0392** | **0.5750** | **1.5200e-003** | **0.1643** | **8.5000e-004** | **0.1651** | **0.0436** | **7.8000e-004** | **0.0444** | | **155.1920** | **155.1920** | **4.2800e-003** | **3.9600e-003** | **156.4785** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Paving - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.5550 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.5877** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0544 | 0.0294 | 0.4313 | 1.1400e-003 | 0.1232 | 6.4000e-004 | 0.1239 | 0.0327 | 5.8000e-004 | 0.0333 | | 116.3940 | 116.3940 | 3.2100e-003 | 2.9700e-003 | 117.3589 |
| **Total** | **0.0544** | **0.0294** | **0.4313** | **1.1400e-003** | **0.1232** | **6.4000e-004** | **0.1239** | **0.0327** | **5.8000e-004** | **0.0333** | | **116.3940** | **116.3940** | **3.2100e-003** | **2.9700e-003** | **117.3589** |

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Paving - 2023

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | 0.0000 | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.5550 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.5877** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | **0.0000** | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0544 | 0.0294 | 0.4313 | 1.1400e-003 | 0.1232 | 6.4000e-004 | 0.1239 | 0.0327 | 5.8000e-004 | 0.0333 | | 116.3940 | 116.3940 | 3.2100e-003 | 2.9700e-003 | 117.3589 |
| **Total** | **0.0544** | **0.0294** | **0.4313** | **1.1400e-003** | **0.1232** | **6.4000e-004** | **0.1239** | **0.0327** | **5.8000e-004** | **0.0333** | | **116.3940** | **116.3940** | **3.2100e-003** | **2.9700e-003** | **117.3589** |

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Paving - 2024

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.9882 | 9.5246 | 14.6258 | 0.0228 | | 0.4685 | 0.4685 | | 0.4310 | 0.4310 | | 2,207.5472 | 2,207.5472 | 0.7140 | | 2,225.3963 |
| Paving | 0.5550 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.5431** | **9.5246** | **14.6258** | **0.0228** | | **0.4685** | **0.4685** | | **0.4310** | **0.4310** | | **2,207.5472** | **2,207.5472** | **0.7140** | | **2,225.3963** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0501 | 0.0259 | 0.3978 | 1.1000e-003 | 0.1232 | 6.0000e-004 | 0.1238 | 0.0327 | 5.5000e-004 | 0.0332 | | 113.4478 | 113.4478 | 2.8700e-003 | 2.7400e-003 | 114.3368 |
| **Total** | **0.0501** | **0.0259** | **0.3978** | **1.1000e-003** | **0.1232** | **6.0000e-004** | **0.1238** | **0.0327** | **5.5000e-004** | **0.0332** | | **113.4478** | **113.4478** | **2.8700e-003** | **2.7400e-003** | **114.3368** |

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Paving - 2024

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.9882 | 9.5246 | 14.6258 | 0.0228 | | 0.4685 | 0.4685 | | 0.4310 | 0.4310 | 0.0000 | 2,207.5472 | 2,207.5472 | 0.7140 | | 2,225.3963 |
| Paving | 0.5550 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.5431** | **9.5246** | **14.6258** | **0.0228** | | **0.4685** | **0.4685** | | **0.4310** | **0.4310** | **0.0000** | **2,207.5472** | **2,207.5472** | **0.7140** | | **2,225.3963** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0501 | 0.0259 | 0.3978 | 1.1000e-003 | 0.1232 | 6.0000e-004 | 0.1238 | 0.0327 | 5.5000e-004 | 0.0332 | | 113.4478 | 113.4478 | 2.8700e-003 | 2.7400e-003 | 114.3368 |
| **Total** | **0.0501** | **0.0259** | **0.3978** | **1.1000e-003** | **0.1232** | **6.0000e-004** | **0.1238** | **0.0327** | **5.5000e-004** | **0.0332** | | **113.4478** | **113.4478** | **2.8700e-003** | **2.7400e-003** | **114.3368** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2024

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4716 | 13.4438 | 16.1668 | 0.0270 | | 0.6133 | 0.6133 | | 0.5769 | 0.5769 | | 2,555.6989 | 2,555.6989 | 0.6044 | | 2,570.8077 |
| **Total** | **1.4716** | **13.4438** | **16.1668** | **0.0270** | | **0.6133** | **0.6133** | | **0.5769** | **0.5769** | | **2,555.6989** | **2,555.6989** | **0.6044** | | **2,570.8077** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5967 | 22.7138 | 6.9888 | 0.1065 | 3.6408 | 0.1545 | 3.7953 | 1.0484 | 0.1478 | 1.1962 | | 11,251.1006 | 11,251.1006 | 0.0472 | 1.6817 | 11,753.4233 |
| Worker | 4.8082 | 2.4827 | 38.1575 | 0.1055 | 11.8210 | 0.0578 | 11.8789 | 3.1355 | 0.0532 | 3.1887 | | 10,883.4274 | 10,883.4274 | 0.2757 | 0.2631 | 10,968.7077 |
| **Total** | **5.4048** | **25.1965** | **45.1463** | **0.2120** | **15.4618** | **0.2124** | **15.6742** | **4.1839** | **0.2011** | **4.3850** | | **22,134.5280** | **22,134.5280** | **0.3229** | **1.9447** | **22,722.1310** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2024

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4716 | 13.4438 | 16.1668 | 0.0270 | | 0.6133 | 0.6133 | | 0.5769 | 0.5769 | 0.0000 | 2,555.6989 | 2,555.6989 | 0.6044 | | 2,570.8077 |
| **Total** | **1.4716** | **13.4438** | **16.1668** | **0.0270** | | **0.6133** | **0.6133** | | **0.5769** | **0.5769** | **0.0000** | **2,555.6989** | **2,555.6989** | **0.6044** | | **2,570.8077** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5967 | 22.7138 | 6.9888 | 0.1065 | 3.6408 | 0.1545 | 3.7953 | 1.0484 | 0.1478 | 1.1962 | | 11,251.1006 | 11,251.1006 | 0.0472 | 1.6817 | 11,753.4233 |
| Worker | 4.8082 | 2.4827 | 38.1575 | 0.1055 | 11.8210 | 0.0578 | 11.8789 | 3.1355 | 0.0532 | 3.1887 | | 10,883.4274 | 10,883.4274 | 0.2757 | 0.2631 | 10,968.7077 |
| **Total** | **5.4048** | **25.1965** | **45.1463** | **0.2120** | **15.4618** | **0.2124** | **15.6742** | **4.1839** | **0.2011** | **4.3850** | | **22,134.5280** | **22,134.5280** | **0.3229** | **1.9447** | **22,722.1310** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5826 | 22.6374 | 6.8405 | 0.1045 | 3.6408 | 0.1545 | 3.7953 | 1.0484 | 0.1478 | 1.1962 | | 11,046.2280 | 11,046.2280 | 0.0454 | 1.6497 | 11,538.9732 |
| Worker | 4.4506 | 2.2059 | 35.3349 | 0.1019 | 11.8210 | 0.0551 | 11.8761 | 3.1355 | 0.0507 | 3.1862 | | 10,617.1943 | 10,617.1943 | 0.2475 | 0.2445 | 10,696.2362 |
| **Total** | **5.0332** | **24.8433** | **42.1754** | **0.2065** | **15.4618** | **0.2096** | **15.6714** | **4.1839** | **0.1985** | **4.3824** | | **21,663.4223** | **21,663.4223** | **0.2929** | **1.8942** | **22,235.2094** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2025

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5826 | 22.6374 | 6.8405 | 0.1045 | 3.6408 | 0.1545 | 3.7953 | 1.0484 | 0.1478 | 1.1962 | | 11,046.2280 | 11,046.2280 | 0.0454 | 1.6497 | 11,538.9732 |
| Worker | 4.4506 | 2.2059 | 35.3349 | 0.1019 | 11.8210 | 0.0551 | 11.8761 | 3.1355 | 0.0507 | 3.1862 | | 10,617.1943 | 10,617.1943 | 0.2475 | 0.2445 | 10,696.2362 |
| **Total** | **5.0332** | **24.8433** | **42.1754** | **0.2065** | **15.4618** | **0.2096** | **15.6714** | **4.1839** | **0.1985** | **4.3824** | | **21,663.4223** | **21,663.4223** | **0.2929** | **1.8942** | **22,235.2094** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2026

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5703 | 22.5150 | 6.7200 | 0.1026 | 3.6408 | 0.1537 | 3.7945 | 1.0484 | 0.1471 | 1.1955 | | 10,838.5679 | 10,838.5679 | 0.0438 | 1.6172 | 11,321.5838 |
| Worker | 4.1427 | 1.9810 | 33.1723 | 0.0988 | 11.8210 | 0.0526 | 11.8737 | 3.1355 | 0.0484 | 3.1839 | | 10,374.3788 | 10,374.3788 | 0.2241 | 0.2293 | 10,448.3133 |
| **Total** | **4.7130** | **24.4960** | **39.8923** | **0.2014** | **15.4618** | **0.2064** | **15.6682** | **4.1839** | **0.1955** | **4.3794** | | **21,212.9466** | **21,212.9466** | **0.2679** | **1.8465** | **21,769.8971** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2026

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5703 | 22.5150 | 6.7200 | 0.1026 | 3.6408 | 0.1537 | 3.7945 | 1.0484 | 0.1471 | 1.1955 | | 10,838.5679 | 10,838.5679 | 0.0438 | 1.6172 | 11,321.5838 |
| Worker | 4.1427 | 1.9810 | 33.1723 | 0.0988 | 11.8210 | 0.0526 | 11.8737 | 3.1355 | 0.0484 | 3.1839 | | 10,374.3788 | 10,374.3788 | 0.2241 | 0.2293 | 10,448.3133 |
| **Total** | **4.7130** | **24.4960** | **39.8923** | **0.2014** | **15.4618** | **0.2064** | **15.6682** | **4.1839** | **0.1955** | **4.3794** | | **21,212.9466** | **21,212.9466** | **0.2679** | **1.8465** | **21,769.8971** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2027

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5600 | 22.3676 | 6.6204 | 0.1005 | 3.6408 | 0.1527 | 3.7935 | 1.0484 | 0.1460 | 1.1945 | | 10,616.7029 | 10,616.7029 | 0.0424 | 1.5829 | 11,089.4524 |
| Worker | 3.8666 | 1.7932 | 31.1862 | 0.0958 | 11.8210 | 0.0496 | 11.8707 | 3.1355 | 0.0457 | 3.1812 | | 10,144.4102 | 10,144.4102 | 0.2035 | 0.2166 | 10,214.0358 |
| **Total** | **4.4266** | **24.1607** | **37.8066** | **0.1963** | **15.4618** | **0.2023** | **15.6641** | **4.1839** | **0.1917** | **4.3756** | | **20,761.1131** | **20,761.1131** | **0.2458** | **1.7994** | **21,303.4882** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2027

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5600 | 22.3676 | 6.6204 | 0.1005 | 3.6408 | 0.1527 | 3.7935 | 1.0484 | 0.1460 | 1.1945 | | 10,616.7029 | 10,616.7029 | 0.0424 | 1.5829 | 11,089.4524 |
| Worker | 3.8666 | 1.7932 | 31.1862 | 0.0958 | 11.8210 | 0.0496 | 11.8707 | 3.1355 | 0.0457 | 3.1812 | | 10,144.4102 | 10,144.4102 | 0.2035 | 0.2166 | 10,214.0358 |
| **Total** | **4.4266** | **24.1607** | **37.8066** | **0.1963** | **15.4618** | **0.2023** | **15.6641** | **4.1839** | **0.1917** | **4.3756** | | **20,761.1131** | **20,761.1131** | **0.2458** | **1.7994** | **21,303.4882** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2028

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5512 | 22.2579 | 6.5413 | 0.0985 | 3.6408 | 0.1517 | 3.7925 | 1.0484 | 0.1451 | 1.1935 | | 10,404.8332 | 10,404.8332 | 0.0412 | 1.5499 | 10,867.7338 |
| Worker | 3.6161 | 1.6377 | 29.5474 | 0.0932 | 11.8210 | 0.0465 | 11.8676 | 3.1355 | 0.0428 | 3.1783 | | 9,940.5750 | 9,940.5750 | 0.1860 | 0.2060 | 10,006.6195 |
| **Total** | **4.1674** | **23.8955** | **36.0887** | **0.1917** | **15.4619** | **0.1982** | **15.6601** | **4.1839** | **0.1879** | **4.3718** | | **20,345.4083** | **20,345.4083** | **0.2272** | **1.7559** | **20,874.3533** |

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2028

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5512 | 22.2579 | 6.5413 | 0.0985 | 3.6408 | 0.1517 | 3.7925 | 1.0484 | 0.1451 | 1.1935 | | 10,404.8332 | 10,404.8332 | 0.0412 | 1.5499 | 10,867.7338 |
| Worker | 3.6161 | 1.6377 | 29.5474 | 0.0932 | 11.8210 | 0.0465 | 11.8676 | 3.1355 | 0.0428 | 3.1783 | | 9,940.5750 | 9,940.5750 | 0.1860 | 0.2060 | 10,006.6195 |
| **Total** | **4.1674** | **23.8955** | **36.0887** | **0.1917** | **15.4619** | **0.1982** | **15.6601** | **4.1839** | **0.1879** | **4.3718** | | **20,345.4083** | **20,345.4083** | **0.2272** | **1.7559** | **20,874.3533** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2029

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5434 | 22.1336 | 6.4730 | 0.0966 | 3.6408 | 0.1505 | 3.7914 | 1.0484 | 0.1440 | 1.1924 | | 10,200.1298 | 10,200.1298 | 0.0402 | 1.5181 | 10,653.5284 |
| Worker | 3.3807 | 1.5065 | 28.1414 | 0.0909 | 11.8210 | 0.0436 | 11.8646 | 3.1355 | 0.0401 | 3.1756 | | 9,758.8649 | 9,758.8649 | 0.1708 | 0.1972 | 9,821.8948 |
| **Total** | **3.9241** | **23.6401** | **34.6144** | **0.1874** | **15.4619** | **0.1941** | **15.6560** | **4.1839** | **0.1841** | **4.3680** | | **19,958.9947** | **19,958.9947** | **0.2109** | **1.7153** | **20,475.4232** |

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2029

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5434 | 22.1336 | 6.4730 | 0.0966 | 3.6408 | 0.1505 | 3.7914 | 1.0484 | 0.1440 | 1.1924 | | 10,200.1298 | 10,200.1298 | 0.0402 | 1.5181 | 10,653.5284 |
| Worker | 3.3807 | 1.5065 | 28.1414 | 0.0909 | 11.8210 | 0.0436 | 11.8646 | 3.1355 | 0.0401 | 3.1756 | | 9,758.8649 | 9,758.8649 | 0.1708 | 0.1972 | 9,821.8948 |
| **Total** | **3.9241** | **23.6401** | **34.6144** | **0.1874** | **15.4619** | **0.1941** | **15.6560** | **4.1839** | **0.1841** | **4.3680** | | **19,958.9947** | **19,958.9947** | **0.2109** | **1.7153** | **20,475.4232** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2030

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5371 | 22.0426 | 6.4213 | 0.0948 | 3.6408 | 0.1497 | 3.7905 | 1.0484 | 0.1432 | 1.1916 | | 10,014.4267 | 10,014.4267 | 0.0394 | 1.4893 | 10,459.2150 |
| Worker | 3.1623 | 1.3961 | 26.9620 | 0.0888 | 11.8210 | 0.0408 | 11.8618 | 3.1355 | 0.0375 | 3.1730 | | 9,599.6862 | 9,599.6862 | 0.1575 | 0.1898 | 9,660.1874 |
| **Total** | **3.6994** | **23.4386** | **33.3832** | **0.1836** | **15.4619** | **0.1904** | **15.6523** | **4.1839** | **0.1807** | **4.3646** | | **19,614.1129** | **19,614.1129** | **0.1969** | **1.6791** | **20,119.4024** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2030

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5371 | 22.0426 | 6.4213 | 0.0948 | 3.6408 | 0.1497 | 3.7905 | 1.0484 | 0.1432 | 1.1916 | | 10,014.4267 | 10,014.4267 | 0.0394 | 1.4893 | 10,459.2150 |
| Worker | 3.1623 | 1.3961 | 26.9620 | 0.0888 | 11.8210 | 0.0408 | 11.8618 | 3.1355 | 0.0375 | 3.1730 | | 9,599.6862 | 9,599.6862 | 0.1575 | 0.1898 | 9,660.1874 |
| **Total** | **3.6994** | **23.4386** | **33.3832** | **0.1836** | **15.4619** | **0.1904** | **15.6523** | **4.1839** | **0.1807** | **4.3646** | | **19,614.1129** | **19,614.1129** | **0.1969** | **1.6791** | **20,119.4024** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2031

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5323 | 21.9815 | 6.3880 | 0.0932 | 3.6408 | 0.1490 | 3.7898 | 1.0484 | 0.1425 | 1.1909 | | 9,849.4351 | 9,849.4351 | 0.0387 | 1.4639 | 10,286.6459 |
| Worker | 2.9505 | 1.2992 | 25.9285 | 0.0869 | 11.8210 | 0.0382 | 11.8592 | 3.1355 | 0.0351 | 3.1706 | | 9,458.3710 | 9,458.3710 | 0.1457 | 0.1835 | 9,516.6982 |
| **Total** | **3.4827** | **23.2807** | **32.3165** | **0.1802** | **15.4619** | **0.1871** | **15.6490** | **4.1839** | **0.1776** | **4.3616** | | **19,307.8060** | **19,307.8060** | **0.1844** | **1.6474** | **19,803.3441** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2031

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5323 | 21.9815 | 6.3880 | 0.0932 | 3.6408 | 0.1490 | 3.7898 | 1.0484 | 0.1425 | 1.1909 | | 9,849.4351 | 9,849.4351 | 0.0387 | 1.4639 | 10,286.6459 |
| Worker | 2.9505 | 1.2992 | 25.9285 | 0.0869 | 11.8210 | 0.0382 | 11.8592 | 3.1355 | 0.0351 | 3.1706 | | 9,458.3710 | 9,458.3710 | 0.1457 | 0.1835 | 9,516.6982 |
| **Total** | **3.4827** | **23.2807** | **32.3165** | **0.1802** | **15.4619** | **0.1871** | **15.6490** | **4.1839** | **0.1776** | **4.3616** | | **19,307.8060** | **19,307.8060** | **0.1844** | **1.6474** | **19,803.3441** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2032

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5288 | 21.9287 | 6.3720 | 0.0919 | 3.6409 | 0.1483 | 3.7891 | 1.0484 | 0.1419 | 1.1903 | | 9,703.8700 | 9,703.8700 | 0.0382 | 1.4416 | 10,134.4197 |
| Worker | 2.7666 | 1.2213 | 25.0611 | 0.0853 | 11.8210 | 0.0358 | 11.8569 | 3.1355 | 0.0330 | 3.1685 | | 9,334.7388 | 9,334.7388 | 0.1355 | 0.1784 | 9,391.2965 |
| **Total** | **3.2955** | **23.1500** | **31.4331** | **0.1771** | **15.4619** | **0.1841** | **15.6460** | **4.1839** | **0.1748** | **4.3587** | | **19,038.6088** | **19,038.6088** | **0.1737** | **1.6200** | **19,525.7163** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2032

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5288 | 21.9287 | 6.3720 | 0.0919 | 3.6409 | 0.1483 | 3.7891 | 1.0484 | 0.1419 | 1.1903 | | 9,703.8700 | 9,703.8700 | 0.0382 | 1.4416 | 10,134.4197 |
| Worker | 2.7666 | 1.2213 | 25.0611 | 0.0853 | 11.8210 | 0.0358 | 11.8569 | 3.1355 | 0.0330 | 3.1685 | | 9,334.7388 | 9,334.7388 | 0.1355 | 0.1784 | 9,391.2965 |
| **Total** | **3.2955** | **23.1500** | **31.4331** | **0.1771** | **15.4619** | **0.1841** | **15.6460** | **4.1839** | **0.1748** | **4.3587** | | **19,038.6088** | **19,038.6088** | **0.1737** | **1.6200** | **19,525.7163** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2033

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5267 | 21.8868 | 6.3701 | 0.0907 | 3.6409 | 0.1477 | 3.7886 | 1.0484 | 0.1413 | 1.1897 | | 9,575.8283 | 9,575.8283 | 0.0378 | 1.4220 | 10,000.5374 |
| Worker | 2.6003 | 1.1570 | 24.3155 | 0.0838 | 11.8210 | 0.0336 | 11.8547 | 3.1355 | 0.0310 | 3.1664 | | 9,225.9090 | 9,225.9090 | 0.1266 | 0.1743 | 9,281.0016 |
| **Total** | **3.1270** | **23.0438** | **30.6855** | **0.1745** | **15.4619** | **0.1813** | **15.6432** | **4.1839** | **0.1722** | **4.3562** | | **18,801.7373** | **18,801.7373** | **0.1645** | **1.5963** | **19,281.5390** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2033

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5267 | 21.8868 | 6.3701 | 0.0907 | 3.6409 | 0.1477 | 3.7886 | 1.0484 | 0.1413 | 1.1897 | | 9,575.8283 | 9,575.8283 | 0.0378 | 1.4220 | 10,000.5374 |
| Worker | 2.6003 | 1.1570 | 24.3155 | 0.0838 | 11.8210 | 0.0336 | 11.8547 | 3.1355 | 0.0310 | 3.1664 | | 9,225.9090 | 9,225.9090 | 0.1266 | 0.1743 | 9,281.0016 |
| **Total** | **3.1270** | **23.0438** | **30.6855** | **0.1745** | **15.4619** | **0.1813** | **15.6432** | **4.1839** | **0.1722** | **4.3562** | | **18,801.7373** | **18,801.7373** | **0.1645** | **1.5963** | **19,281.5390** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2034

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5252 | 21.8343 | 6.3729 | 0.0896 | 3.6409 | 0.1470 | 3.7879 | 1.0484 | 0.1406 | 1.1891 | | 9,459.8258 | 9,459.8258 | 0.0375 | 1.4043 | 9,879.2456 |
| Worker | 2.4526 | 1.1053 | 23.6612 | 0.0826 | 11.8210 | 0.0316 | 11.8527 | 3.1355 | 0.0291 | 3.1646 | | 9,130.5477 | 9,130.5477 | 0.1188 | 0.1709 | 9,184.4390 |
| **Total** | **2.9778** | **22.9396** | **30.0341** | **0.1721** | **15.4619** | **0.1786** | **15.6405** | **4.1839** | **0.1697** | **4.3537** | | **18,590.3735** | **18,590.3735** | **0.1563** | **1.5752** | **19,063.6846** |

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2034

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5252 | 21.8343 | 6.3729 | 0.0896 | 3.6409 | 0.1470 | 3.7879 | 1.0484 | 0.1406 | 1.1891 | | 9,459.8258 | 9,459.8258 | 0.0375 | 1.4043 | 9,879.2456 |
| Worker | 2.4526 | 1.1053 | 23.6612 | 0.0826 | 11.8210 | 0.0316 | 11.8527 | 3.1355 | 0.0291 | 3.1646 | | 9,130.5477 | 9,130.5477 | 0.1188 | 0.1709 | 9,184.4390 |
| **Total** | **2.9778** | **22.9396** | **30.0341** | **0.1721** | **15.4619** | **0.1786** | **15.6405** | **4.1839** | **0.1697** | **4.3537** | | **18,590.3735** | **18,590.3735** | **0.1563** | **1.5752** | **19,063.6846** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2035

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.2168 | 7.1613 | 16.1178 | 0.0310 | | 0.0904 | 0.0904 | | 0.0904 | 0.0904 | | 2,897.5468 | 2,897.5468 | 0.1079 | | 2,900.2448 |
| **Total** | **1.2168** | **7.1613** | **16.1178** | **0.0310** | | **0.0904** | **0.0904** | | **0.0904** | **0.0904** | | **2,897.5468** | **2,897.5468** | **0.1079** | | **2,900.2448** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5235 | 21.7722 | 6.3759 | 0.0886 | 3.6409 | 0.1462 | 3.7871 | 1.0484 | 0.1399 | 1.1883 | | 9,356.6277 | 9,356.6277 | 0.0373 | 1.3885 | 9,771.3426 |
| Worker | 2.3206 | 1.0651 | 23.1073 | 0.0815 | 11.8210 | 0.0298 | 11.8509 | 3.1355 | 0.0275 | 3.1629 | | 9,048.4455 | 9,048.4455 | 0.1119 | 0.1682 | 9,101.3805 |
| **Total** | **2.8441** | **22.8373** | **29.4831** | **0.1700** | **15.4619** | **0.1761** | **15.6380** | **4.1839** | **0.1673** | **4.3513** | | **18,405.0732** | **18,405.0732** | **0.1492** | **1.5568** | **18,872.7231** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2035

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.2168 | 7.1613 | 16.1178 | 0.0310 | | 0.0904 | 0.0904 | | 0.0904 | 0.0904 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1079 | | 2,900.2448 |
| **Total** | **1.2168** | **7.1613** | **16.1178** | **0.0310** | | **0.0904** | **0.0904** | | **0.0904** | **0.0904** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1079** | | **2,900.2448** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5235 | 21.7722 | 6.3759 | 0.0886 | 3.6409 | 0.1462 | 3.7871 | 1.0484 | 0.1399 | 1.1883 | | 9,356.6277 | 9,356.6277 | 0.0373 | 1.3885 | 9,771.3426 |
| Worker | 2.3206 | 1.0651 | 23.1073 | 0.0815 | 11.8210 | 0.0298 | 11.8509 | 3.1355 | 0.0275 | 3.1629 | | 9,048.4455 | 9,048.4455 | 0.1119 | 0.1682 | 9,101.3805 |
| **Total** | **2.8441** | **22.8373** | **29.4831** | **0.1700** | **15.4619** | **0.1761** | **15.6380** | **4.1839** | **0.1673** | **4.3513** | | **18,405.0732** | **18,405.0732** | **0.1492** | **1.5568** | **18,872.7231** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2036

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.2168 | 7.1613 | 16.1178 | 0.0310 | | 0.0904 | 0.0904 | | 0.0904 | 0.0904 | | 2,897.5468 | 2,897.5468 | 0.1079 | | 2,900.2448 |
| **Total** | **1.2168** | **7.1613** | **16.1178** | **0.0310** | | **0.0904** | **0.0904** | | **0.0904** | **0.0904** | | **2,897.5468** | **2,897.5468** | **0.1079** | | **2,900.2448** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5235 | 21.7722 | 6.3759 | 0.0886 | 3.6409 | 0.1462 | 3.7871 | 1.0484 | 0.1399 | 1.1883 | | 9,356.6277 | 9,356.6277 | 0.0373 | 1.3885 | 9,771.3426 |
| Worker | 2.3206 | 1.0651 | 23.1073 | 0.0815 | 11.8210 | 0.0298 | 11.8509 | 3.1355 | 0.0275 | 3.1629 | | 9,048.4455 | 9,048.4455 | 0.1119 | 0.1682 | 9,101.3805 |
| **Total** | **2.8441** | **22.8373** | **29.4831** | **0.1700** | **15.4619** | **0.1761** | **15.6380** | **4.1839** | **0.1673** | **4.3513** | | **18,405.0732** | **18,405.0732** | **0.1492** | **1.5568** | **18,872.7231** |

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2036

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.2168 | 7.1613 | 16.1178 | 0.0310 | | 0.0904 | 0.0904 | | 0.0904 | 0.0904 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1079 | | 2,900.2448 |
| **Total** | **1.2168** | **7.1613** | **16.1178** | **0.0310** | | **0.0904** | **0.0904** | | **0.0904** | **0.0904** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1079** | | **2,900.2448** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5235 | 21.7722 | 6.3759 | 0.0886 | 3.6409 | 0.1462 | 3.7871 | 1.0484 | 0.1399 | 1.1883 | | 9,356.6277 | 9,356.6277 | 0.0373 | 1.3885 | 9,771.3426 |
| Worker | 2.3206 | 1.0651 | 23.1073 | 0.0815 | 11.8210 | 0.0298 | 11.8509 | 3.1355 | 0.0275 | 3.1629 | | 9,048.4455 | 9,048.4455 | 0.1119 | 0.1682 | 9,101.3805 |
| **Total** | **2.8441** | **22.8373** | **29.4831** | **0.1700** | **15.4619** | **0.1761** | **15.6380** | **4.1839** | **0.1673** | **4.3513** | | **18,405.0732** | **18,405.0732** | **0.1492** | **1.5568** | **18,872.7231** |

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2024

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1808 | 1.2188 | 1.8101 | 2.9700e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | | 281.4481 | 281.4481 | 0.0159 | | 281.8443 |
| **Total** | **8.7619** | **1.2188** | **1.8101** | **2.9700e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | | **281.4481** | **281.4481** | **0.0159** | | **281.8443** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.9623 | 0.4969 | 7.6368 | 0.0211 | 2.3659 | 0.0116 | 2.3774 | 0.6275 | 0.0107 | 0.6382 | | 2,178.1981 | 2,178.1981 | 0.0552 | 0.0527 | 2,195.2660 |
| **Total** | **0.9623** | **0.4969** | **7.6368** | **0.0211** | **2.3659** | **0.0116** | **2.3774** | **0.6275** | **0.0107** | **0.6382** | | **2,178.1981** | **2,178.1981** | **0.0552** | **0.0527** | **2,195.2660** |

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2024

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1808 | 1.2188 | 1.8101 | 2.9700e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | 0.0000 | 281.4481 | 281.4481 | 0.0159 | | 281.8443 |
| **Total** | **8.7619** | **1.2188** | **1.8101** | **2.9700e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | **0.0000** | **281.4481** | **281.4481** | **0.0159** | | **281.8443** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.9623 | 0.4969 | 7.6368 | 0.0211 | 2.3659 | 0.0116 | 2.3774 | 0.6275 | 0.0107 | 0.6382 | | 2,178.1981 | 2,178.1981 | 0.0552 | 0.0527 | 2,195.2660 |
| **Total** | **0.9623** | **0.4969** | **7.6368** | **0.0211** | **2.3659** | **0.0116** | **2.3774** | **0.6275** | **0.0107** | **0.6382** | | **2,178.1981** | **2,178.1981** | **0.0552** | **0.0527** | **2,195.2660** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **8.7520** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.8907 | 0.4415 | 7.0719 | 0.0204 | 2.3659 | 0.0110 | 2.3769 | 0.6275 | 0.0101 | 0.6377 | | 2,124.9145 | 2,124.9145 | 0.0495 | 0.0489 | 2,140.7339 |
| **Total** | **0.8907** | **0.4415** | **7.0719** | **0.0204** | **2.3659** | **0.0110** | **2.3769** | **0.6275** | **0.0101** | **0.6377** | | **2,124.9145** | **2,124.9145** | **0.0495** | **0.0489** | **2,140.7339** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2025

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **8.7520** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.8907 | 0.4415 | 7.0719 | 0.0204 | 2.3659 | 0.0110 | 2.3769 | 0.6275 | 0.0101 | 0.6377 | | 2,124.9145 | 2,124.9145 | 0.0495 | 0.0489 | 2,140.7339 |
| **Total** | **0.8907** | **0.4415** | **7.0719** | **0.0204** | **2.3659** | **0.0110** | **2.3769** | **0.6275** | **0.0101** | **0.6377** | | **2,124.9145** | **2,124.9145** | **0.0495** | **0.0489** | **2,140.7339** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2026

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **8.7520** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.8291 | 0.3965 | 6.6391 | 0.0198 | 2.3659 | 0.0105 | 2.3764 | 0.6275 | 9.6900e-003 | 0.6372 | | 2,076.3176 | 2,076.3176 | 0.0448 | 0.0459 | 2,091.1148 |
| **Total** | **0.8291** | **0.3965** | **6.6391** | **0.0198** | **2.3659** | **0.0105** | **2.3764** | **0.6275** | **9.6900e-003** | **0.6372** | | **2,076.3176** | **2,076.3176** | **0.0448** | **0.0459** | **2,091.1148** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2026

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **8.7520** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.8291 | 0.3965 | 6.6391 | 0.0198 | 2.3659 | 0.0105 | 2.3764 | 0.6275 | 9.6900e-003 | 0.6372 | | 2,076.3176 | 2,076.3176 | 0.0448 | 0.0459 | 2,091.1148 |
| **Total** | **0.8291** | **0.3965** | **6.6391** | **0.0198** | **2.3659** | **0.0105** | **2.3764** | **0.6275** | **9.6900e-003** | **0.6372** | | **2,076.3176** | **2,076.3176** | **0.0448** | **0.0459** | **2,091.1148** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2027

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **8.7520** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.7739 | 0.3589 | 6.2416 | 0.0192 | 2.3659 | 9.9400e-003 | 2.3758 | 0.6275 | 9.1400e-003 | 0.6367 | | 2,030.2920 | 2,030.2920 | 0.0407 | 0.0433 | 2,044.2268 |
| **Total** | **0.7739** | **0.3589** | **6.2416** | **0.0192** | **2.3659** | **9.9400e-003** | **2.3758** | **0.6275** | **9.1400e-003** | **0.6367** | | **2,030.2920** | **2,030.2920** | **0.0407** | **0.0433** | **2,044.2268** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2027

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **8.7520** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.7739 | 0.3589 | 6.2416 | 0.0192 | 2.3659 | 9.9400e-003 | 2.3758 | 0.6275 | 9.1400e-003 | 0.6367 | | 2,030.2920 | 2,030.2920 | 0.0407 | 0.0433 | 2,044.2268 |
| **Total** | **0.7739** | **0.3589** | **6.2416** | **0.0192** | **2.3659** | **9.9400e-003** | **2.3758** | **0.6275** | **9.1400e-003** | **0.6367** | | **2,030.2920** | **2,030.2920** | **0.0407** | **0.0433** | **2,044.2268** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2028

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **8.7520** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.7237 | 0.3278 | 5.9136 | 0.0187 | 2.3659 | 9.3100e-003 | 2.3752 | 0.6275 | 8.5700e-003 | 0.6361 | | 1,989.4966 | 1,989.4966 | 0.0372 | 0.0412 | 2,002.7147 |
| **Total** | **0.7237** | **0.3278** | **5.9136** | **0.0187** | **2.3659** | **9.3100e-003** | **2.3752** | **0.6275** | **8.5700e-003** | **0.6361** | | **1,989.4966** | **1,989.4966** | **0.0372** | **0.0412** | **2,002.7147** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2028

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **8.7520** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.7237 | 0.3278 | 5.9136 | 0.0187 | 2.3659 | 9.3100e-003 | 2.3752 | 0.6275 | 8.5700e-003 | 0.6361 | | 1,989.4966 | 1,989.4966 | 0.0372 | 0.0412 | 2,002.7147 |
| **Total** | **0.7237** | **0.3278** | **5.9136** | **0.0187** | **2.3659** | **9.3100e-003** | **2.3752** | **0.6275** | **8.5700e-003** | **0.6361** | | **1,989.4966** | **1,989.4966** | **0.0372** | **0.0412** | **2,002.7147** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2029

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **8.7520** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.6766 | 0.3015 | 5.6322 | 0.0182 | 2.3659 | 8.7200e-003 | 2.3746 | 0.6275 | 8.0200e-003 | 0.6356 | | 1,953.1293 | 1,953.1293 | 0.0342 | 0.0395 | 1,965.7441 |
| **Total** | **0.6766** | **0.3015** | **5.6322** | **0.0182** | **2.3659** | **8.7200e-003** | **2.3746** | **0.6275** | **8.0200e-003** | **0.6356** | | **1,953.1293** | **1,953.1293** | **0.0342** | **0.0395** | **1,965.7441** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2029

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **8.7520** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.6766 | 0.3015 | 5.6322 | 0.0182 | 2.3659 | 8.7200e-003 | 2.3746 | 0.6275 | 8.0200e-003 | 0.6356 | | 1,953.1293 | 1,953.1293 | 0.0342 | 0.0395 | 1,965.7441 |
| **Total** | **0.6766** | **0.3015** | **5.6322** | **0.0182** | **2.3659** | **8.7200e-003** | **2.3746** | **0.6275** | **8.0200e-003** | **0.6356** | | **1,953.1293** | **1,953.1293** | **0.0342** | **0.0395** | **1,965.7441** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2030

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **8.7119** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.6329 | 0.2794 | 5.3961 | 0.0178 | 2.3659 | 8.1600e-003 | 2.3740 | 0.6275 | 7.5100e-003 | 0.6350 | | 1,921.2715 | 1,921.2715 | 0.0315 | 0.0380 | 1,933.3801 |
| **Total** | **0.6329** | **0.2794** | **5.3961** | **0.0178** | **2.3659** | **8.1600e-003** | **2.3740** | **0.6275** | **7.5100e-003** | **0.6350** | | **1,921.2715** | **1,921.2715** | **0.0315** | **0.0380** | **1,933.3801** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2030

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | 0.0000 | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **8.7119** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | **0.0000** | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.6329 | 0.2794 | 5.3961 | 0.0178 | 2.3659 | 8.1600e-003 | 2.3740 | 0.6275 | 7.5100e-003 | 0.6350 | | 1,921.2715 | 1,921.2715 | 0.0315 | 0.0380 | 1,933.3801 |
| **Total** | **0.6329** | **0.2794** | **5.3961** | **0.0178** | **2.3659** | **8.1600e-003** | **2.3740** | **0.6275** | **7.5100e-003** | **0.6350** | | **1,921.2715** | **1,921.2715** | **0.0315** | **0.0380** | **1,933.3801** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2031

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **8.7119** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.5905 | 0.2600 | 5.1893 | 0.0174 | 2.3659 | 7.6400e-003 | 2.3735 | 0.6275 | 7.0300e-003 | 0.6346 | | 1,892.9888 | 1,892.9888 | 0.0292 | 0.0367 | 1,904.6623 |
| **Total** | **0.5905** | **0.2600** | **5.1893** | **0.0174** | **2.3659** | **7.6400e-003** | **2.3735** | **0.6275** | **7.0300e-003** | **0.6346** | | **1,892.9888** | **1,892.9888** | **0.0292** | **0.0367** | **1,904.6623** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2031

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | 0.0000 | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **8.7119** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | **0.0000** | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.5905 | 0.2600 | 5.1893 | 0.0174 | 2.3659 | 7.6400e-003 | 2.3735 | 0.6275 | 7.0300e-003 | 0.6346 | | 1,892.9888 | 1,892.9888 | 0.0292 | 0.0367 | 1,904.6623 |
| **Total** | **0.5905** | **0.2600** | **5.1893** | **0.0174** | **2.3659** | **7.6400e-003** | **2.3735** | **0.6275** | **7.0300e-003** | **0.6346** | | **1,892.9888** | **1,892.9888** | **0.0292** | **0.0367** | **1,904.6623** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2032

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **8.7119** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.5537 | 0.2444 | 5.0157 | 0.0171 | 2.3659 | 7.1700e-003 | 2.3730 | 0.6275 | 6.6000e-003 | 0.6341 | | 1,868.2451 | 1,868.2451 | 0.0271 | 0.0357 | 1,879.5646 |
| **Total** | **0.5537** | **0.2444** | **5.0157** | **0.0171** | **2.3659** | **7.1700e-003** | **2.3730** | **0.6275** | **6.6000e-003** | **0.6341** | | **1,868.2451** | **1,868.2451** | **0.0271** | **0.0357** | **1,879.5646** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2032

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | 0.0000 | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **8.7119** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | **0.0000** | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.5537 | 0.2444 | 5.0157 | 0.0171 | 2.3659 | 7.1700e-003 | 2.3730 | 0.6275 | 6.6000e-003 | 0.6341 | | 1,868.2451 | 1,868.2451 | 0.0271 | 0.0357 | 1,879.5646 |
| **Total** | **0.5537** | **0.2444** | **5.0157** | **0.0171** | **2.3659** | **7.1700e-003** | **2.3730** | **0.6275** | **6.6000e-003** | **0.6341** | | **1,868.2451** | **1,868.2451** | **0.0271** | **0.0357** | **1,879.5646** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2033

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **8.7119** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.5204 | 0.2316 | 4.8665 | 0.0168 | 2.3659 | 6.7300e-003 | 2.3726 | 0.6275 | 6.1900e-003 | 0.6337 | | 1,846.4641 | 1,846.4641 | 0.0254 | 0.0349 | 1,857.4902 |
| **Total** | **0.5204** | **0.2316** | **4.8665** | **0.0168** | **2.3659** | **6.7300e-003** | **2.3726** | **0.6275** | **6.1900e-003** | **0.6337** | | **1,846.4641** | **1,846.4641** | **0.0254** | **0.0349** | **1,857.4902** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2033

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | 0.0000 | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **8.7119** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | **0.0000** | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.5204 | 0.2316 | 4.8665 | 0.0168 | 2.3659 | 6.7300e-003 | 2.3726 | 0.6275 | 6.1900e-003 | 0.6337 | | 1,846.4641 | 1,846.4641 | 0.0254 | 0.0349 | 1,857.4902 |
| **Total** | **0.5204** | **0.2316** | **4.8665** | **0.0168** | **2.3659** | **6.7300e-003** | **2.3726** | **0.6275** | **6.1900e-003** | **0.6337** | | **1,846.4641** | **1,846.4641** | **0.0254** | **0.0349** | **1,857.4902** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2034

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **8.7119** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.4909 | 0.2212 | 4.7355 | 0.0165 | 2.3659 | 6.3300e-003 | 2.3722 | 0.6275 | 5.8300e-003 | 0.6334 | | 1,827.3786 | 1,827.3786 | 0.0238 | 0.0342 | 1,838.1643 |
| **Total** | **0.4909** | **0.2212** | **4.7355** | **0.0165** | **2.3659** | **6.3300e-003** | **2.3722** | **0.6275** | **5.8300e-003** | **0.6334** | | **1,827.3786** | **1,827.3786** | **0.0238** | **0.0342** | **1,838.1643** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2034

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | 0.0000 | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **8.7119** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | **0.0000** | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.4909 | 0.2212 | 4.7355 | 0.0165 | 2.3659 | 6.3300e-003 | 2.3722 | 0.6275 | 5.8300e-003 | 0.6334 | | 1,827.3786 | 1,827.3786 | 0.0238 | 0.0342 | 1,838.1643 |
| **Total** | **0.4909** | **0.2212** | **4.7355** | **0.0165** | **2.3659** | **6.3300e-003** | **2.3722** | **0.6275** | **5.8300e-003** | **0.6334** | | **1,827.3786** | **1,827.3786** | **0.0238** | **0.0342** | **1,838.1643** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2035

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1179 | 0.7577 | 1.7943 | 2.9700e-003 | | 9.9000e-003 | 9.9000e-003 | | 9.9000e-003 | 9.9000e-003 | | 281.4481 | 281.4481 | 0.0104 | | 281.7081 |
| **Total** | **8.6990** | **0.7577** | **1.7943** | **2.9700e-003** | | **9.9000e-003** | **9.9000e-003** | | **9.9000e-003** | **9.9000e-003** | | **281.4481** | **281.4481** | **0.0104** | | **281.7081** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.4644 | 0.2132 | 4.6247 | 0.0163 | 2.3659 | 5.9700e-003 | 2.3718 | 0.6275 | 5.4900e-003 | 0.6330 | | 1,810.9467 | 1,810.9467 | 0.0224 | 0.0337 | 1,821.5411 |
| **Total** | **0.4644** | **0.2132** | **4.6247** | **0.0163** | **2.3659** | **5.9700e-003** | **2.3718** | **0.6275** | **5.4900e-003** | **0.6330** | | **1,810.9467** | **1,810.9467** | **0.0224** | **0.0337** | **1,821.5411** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2035

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1179 | 0.7577 | 1.7943 | 2.9700e-003 | | 9.9000e-003 | 9.9000e-003 | | 9.9000e-003 | 9.9000e-003 | 0.0000 | 281.4481 | 281.4481 | 0.0104 | | 281.7081 |
| **Total** | **8.6990** | **0.7577** | **1.7943** | **2.9700e-003** | | **9.9000e-003** | **9.9000e-003** | | **9.9000e-003** | **9.9000e-003** | **0.0000** | **281.4481** | **281.4481** | **0.0104** | | **281.7081** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.4644 | 0.2132 | 4.6247 | 0.0163 | 2.3659 | 5.9700e-003 | 2.3718 | 0.6275 | 5.4900e-003 | 0.6330 | | 1,810.9467 | 1,810.9467 | 0.0224 | 0.0337 | 1,821.5411 |
| **Total** | **0.4644** | **0.2132** | **4.6247** | **0.0163** | **2.3659** | **5.9700e-003** | **2.3718** | **0.6275** | **5.4900e-003** | **0.6330** | | **1,810.9467** | **1,810.9467** | **0.0224** | **0.0337** | **1,821.5411** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2036

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1179 | 0.7577 | 1.7943 | 2.9700e-003 | | 9.9000e-003 | 9.9000e-003 | | 9.9000e-003 | 9.9000e-003 | | 281.4481 | 281.4481 | 0.0104 | | 281.7081 |
| **Total** | **8.6990** | **0.7577** | **1.7943** | **2.9700e-003** | | **9.9000e-003** | **9.9000e-003** | | **9.9000e-003** | **9.9000e-003** | | **281.4481** | **281.4481** | **0.0104** | | **281.7081** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.4644 | 0.2132 | 4.6247 | 0.0163 | 2.3659 | 5.9700e-003 | 2.3718 | 0.6275 | 5.4900e-003 | 0.6330 | | 1,810.9467 | 1,810.9467 | 0.0224 | 0.0337 | 1,821.5411 |
| **Total** | **0.4644** | **0.2132** | **4.6247** | **0.0163** | **2.3659** | **5.9700e-003** | **2.3718** | **0.6275** | **5.4900e-003** | **0.6330** | | **1,810.9467** | **1,810.9467** | **0.0224** | **0.0337** | **1,821.5411** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2036

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1179 | 0.7577 | 1.7943 | 2.9700e-003 | | 9.9000e-003 | 9.9000e-003 | | 9.9000e-003 | 9.9000e-003 | 0.0000 | 281.4481 | 281.4481 | 0.0104 | | 281.7081 |
| **Total** | **8.6990** | **0.7577** | **1.7943** | **2.9700e-003** | | **9.9000e-003** | **9.9000e-003** | | **9.9000e-003** | **9.9000e-003** | **0.0000** | **281.4481** | **281.4481** | **0.0104** | | **281.7081** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.4644 | 0.2132 | 4.6247 | 0.0163 | 2.3659 | 5.9700e-003 | 2.3718 | 0.6275 | 5.4900e-003 | 0.6330 | | 1,810.9467 | 1,810.9467 | 0.0224 | 0.0337 | 1,821.5411 |
| **Total** | **0.4644** | **0.2132** | **4.6247** | **0.0163** | **2.3659** | **5.9700e-003** | **2.3718** | **0.6275** | **5.4900e-003** | **0.6330** | | **1,810.9467** | **1,810.9467** | **0.0224** | **0.0337** | **1,821.5411** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

# 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 20.4788 | 32.9807 | 221.9619 | 0.6025 | 74.5539 | 0.4049 | 74.9588 | 19.8851 | 0.3810 | 20.2661 | | 66,058.6965 | 66,058.6965 | 2.3518 | 2.8601 | 66,969.7953 |
| Unmitigated | 20.7055 | 33.5362 | 225.9265 | 0.6145 | 76.0754 | 0.4128 | 76.4882 | 20.2909 | 0.3885 | 20.6793 | | 67,383.0147 | 67,383.0147 | 2.3910 | 2.9112 | 68,310.3260 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 0.00 | 0.00 | 0.00 | | |
| Elementary School | 459.00 | 459.00 | 459.00 | 2,167,895 | 2,124,537 |
| Other Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Single Family Housing | 6,976.16 | 6,976.16 | 6976.16 | 33,833,574 | 33,156,903 |
| Total | 7,435.16 | 7,435.16 | 7,435.16 | 36,001,469 | 35,281,439 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 14.12 | 10.85 | 10.85 | 33.00 | 48.00 | 19.00 | 100 | 0 | 0 |
| Elementary School | 14.12 | 10.85 | 10.85 | 65.00 | 30.00 | 5.00 | 100 | 0 | 0 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Other Asphalt Surfaces | 14.12 | 10.85 | 10.85 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Single Family Housing | 16.05 | 10.85 | 11.14 | 45.60 | 19.00 | 35.40 | 100 | 0 | 0 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.552787 | 0.055429 | 0.175422 | 0.126588 | 0.020626 | 0.005781 | 0.013059 | 0.024880 | 0.000595 | 0.000297 | 0.020966 | 0.001153 | 0.002414 |
| Elementary School | 0.552787 | 0.055429 | 0.175422 | 0.126588 | 0.020626 | 0.005781 | 0.013059 | 0.024880 | 0.000595 | 0.000297 | 0.020966 | 0.001153 | 0.002414 |
| Other Asphalt Surfaces | 0.552787 | 0.055429 | 0.175422 | 0.126588 | 0.020626 | 0.005781 | 0.013059 | 0.024880 | 0.000595 | 0.000297 | 0.020966 | 0.001153 | 0.002414 |
| Single Family Housing | 0.552787 | 0.055429 | 0.175422 | 0.126588 | 0.020626 | 0.005781 | 0.013059 | 0.024880 | 0.000595 | 0.000297 | 0.020966 | 0.001153 | 0.002414 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.5322 | 4.5566 | 1.9979 | 0.0290 | | 0.3677 | 0.3677 | | 0.3677 | 0.3677 | | 5,806.0259 | 5,806.0259 | 0.1113 | 0.1064 | 5,840.5282 |
| NaturalGas Unmitigated | 0.5322 | 4.5566 | 1.9979 | 0.0290 | | 0.3677 | 0.3677 | | 0.3677 | 0.3677 | | 5,806.0259 | 5,806.0259 | 0.1113 | 0.1064 | 5,840.5282 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Elementary School | 1450.23 | 0.0156 | 0.1422 | 0.1194 | 8.5000e-004 | | 0.0108 | 0.0108 | | 0.0108 | 0.0108 | | 170.6155 | 170.6155 | 3.2700e-003 | 3.1300e-003 | 171.6294 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 47901 | 0.5166 | 4.4144 | 1.8785 | 0.0282 | | 0.3569 | 0.3569 | | 0.3569 | 0.3569 | | 5,635.4103 | 5,635.4103 | 0.1080 | 0.1033 | 5,668.8988 |
| **Total** | | **0.5322** | **4.5566** | **1.9979** | **0.0290** | | **0.3677** | **0.3677** | | **0.3677** | **0.3677** | | **5,806.0259** | **5,806.0259** | **0.1113** | **0.1065** | **5,840.5282** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Elementary School | 1.45023 | 0.0156 | 0.1422 | 0.1194 | 8.5000e-004 | | 0.0108 | 0.0108 | | 0.0108 | 0.0108 | | 170.6155 | 170.6155 | 3.2700e-003 | 3.1300e-003 | 171.6294 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 47.901 | 0.5166 | 4.4144 | 1.8785 | 0.0282 | | 0.3569 | 0.3569 | | 0.3569 | 0.3569 | | 5,635.4103 | 5,635.4103 | 0.1080 | 0.1033 | 5,668.8988 |
| **Total** | | **0.5322** | **4.5566** | **1.9979** | **0.0290** | | **0.3677** | **0.3677** | | **0.3677** | **0.3677** | | **5,806.0259** | **5,806.0259** | **0.1113** | **0.1065** | **5,840.5282** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Cleaning Supplies

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 37.2542 | 7.3004 | 49.0701 | 0.0451 | | 0.7975 | 0.7975 | | 0.7975 | 0.7975 | 0.0000 | 8,684.0825 | 8,684.0825 | 0.2199 | 0.1578 | 8,736.6033 |
| Unmitigated | 40.3298 | 7.4439 | 63.6981 | 0.0463 | | 0.8835 | 0.8835 | | 0.8835 | 0.8835 | 0.0000 | 8,717.1181 | 8,717.1181 | 0.2699 | 0.1578 | 8,770.8892 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 7.2881 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 30.4293 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.7890 | 6.7423 | 2.8691 | 0.0430 | | 0.5451 | 0.5451 | | 0.5451 | 0.5451 | 0.0000 | 8,607.1765 | 8,607.1765 | 0.1650 | 0.1578 | 8,658.3246 |
| Landscaping | 1.8234 | 0.7016 | 60.8290 | 3.2300e-003 | | 0.3384 | 0.3384 | | 0.3384 | 0.3384 | | 109.9416 | 109.9416 | 0.1049 | | 112.5646 |
| **Total** | **40.3298** | **7.4439** | **63.6981** | **0.0463** | | **0.8835** | **0.8835** | | **0.8835** | **0.8835** | **0.0000** | **8,717.1181** | **8,717.1181** | **0.2699** | **0.1578** | **8,770.8893** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 7.2881 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 28.2107 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.7890 | 6.7423 | 2.8691 | 0.0430 | | 0.5451 | 0.5451 | | 0.5451 | 0.5451 | 0.0000 | 8,607.1765 | 8,607.1765 | 0.1650 | 0.1578 | 8,658.3246 |
| Landscaping | 0.9664 | 0.5581 | 46.2011 | 2.0900e-003 | | 0.2524 | 0.2524 | | 0.2524 | 0.2524 | | 76.9060 | 76.9060 | 0.0549 | | 78.2787 |
| **Total** | **37.2542** | **7.3004** | **49.0701** | **0.0451** | | **0.7975** | **0.7975** | | **0.7975** | **0.7975** | **0.0000** | **8,684.0825** | **8,684.0825** | **0.2199** | **0.1578** | **8,736.6033** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

# Hat Ranch Project

**San Joaquin Valley Unified APCD Air District, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Elementary School | 675.00 | Student | 16.40 | 56,432.27 | 0 |
| Other Asphalt Surfaces | 46.60 | Acre | 46.60 | 2,029,896.00 | 0 |
| City Park | 16.20 | Acre | 16.20 | 705,672.00 | 0 |
| Single Family Housing | 739.00 | Dwelling Unit | 105.40 | 1,330,200.00 | 2344 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.7 | **Precipitation Freq (Days)** | 45 |
| **Climate Zone** | 2 | | | **Operational Year** | 2035 |
| **Utility Company** | Pacific Gas and Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 116.67 | **CH4 Intensity (lb/MWhr)** | 0.033 | **N2O Intensity (lb/MWhr)** | 0.004 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor adjusted per PG&E's compliance with RPS.

Land Use - Lot acrages adjusted according to site plan.

Construction Phase - Architectural coating phase timing adjusted to occur during building construction.

Vehicle Trips - Trip generation rates and trip lengths updated based on Fehr and Peers Traffic Analaysis.

Mobile Land Use Mitigation -

Water Mitigation - Water conservation strategy applied to reflect compliance with MWELO.

Area Mitigation - All electric landscaping equipment would be used, pursuant to AB 1346
Low VOC cleaning supplies required, per SJVAPCD Rule 4663

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstructionPhase | NumDays | 220.00 | 3,100.00 |
| tblLandUse | LotAcreage | 1.30 | 16.40 |
| tblLandUse | LotAcreage | 239.94 | 105.40 |
| tblProjectCharacteristics | CO2IntensityFactor | 203.98 | 116.67 |
| tblVehicleTrips | CC_TL | 7.30 | 10.85 |
| tblVehicleTrips | CC_TL | 7.30 | 10.85 |
| tblVehicleTrips | CC_TL | 7.30 | 10.85 |
| tblVehicleTrips | CNW_TL | 7.30 | 10.85 |
| tblVehicleTrips | CNW_TL | 7.30 | 10.85 |
| tblVehicleTrips | CNW_TL | 7.30 | 10.85 |
| tblVehicleTrips | CW_TL | 9.50 | 14.12 |
| tblVehicleTrips | CW_TL | 9.50 | 14.12 |
| tblVehicleTrips | CW_TL | 9.50 | 14.12 |
| tblVehicleTrips | DV_TP | 28.00 | 0.00 |
| tblVehicleTrips | DV_TP | 25.00 | 0.00 |
| tblVehicleTrips | DV_TP | 11.00 | 0.00 |
| tblVehicleTrips | HO_TL | 7.50 | 11.14 |
| tblVehicleTrips | HS_TL | 7.30 | 10.85 |
| tblVehicleTrips | HW_TL | 10.80 | 16.05 |
| tblVehicleTrips | PB_TP | 6.00 | 0.00 |
| tblVehicleTrips | PB_TP | 12.00 | 0.00 |
| tblVehicleTrips | PB_TP | 3.00 | 0.00 |
| tblVehicleTrips | PR_TP | 66.00 | 100.00 |
| tblVehicleTrips | PR_TP | 63.00 | 100.00 |
| tblVehicleTrips | PR_TP | 86.00 | 100.00 |
| tblVehicleTrips | ST_TR | 1.96 | 0.00 |
| tblVehicleTrips | ST_TR | 0.00 | 0.68 |
| tblVehicleTrips | ST_TR | 9.54 | 9.44 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | |
|---|---|---|---|
| tblVehicleTrips | SU_TR | 2.19 | 0.00 |
| tblVehicleTrips | SU_TR | 0.00 | 0.68 |
| tblVehicleTrips | SU_TR | 8.55 | 9.44 |
| tblVehicleTrips | WD_TR | 0.78 | 0.00 |
| tblVehicleTrips | WD_TR | 1.89 | 0.68 |
| tblWoodstoves | NumberCatalytic | 105.40 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 105.40 | 0.00 |

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2022 | 3.6953 | 38.8964 | 29.5795 | 0.0635 | 19.8049 | 1.6358 | 21.4183 | 10.1417 | 1.5049 | 11.6260 | 0.0000 | 6,153.2112 | 6,153.2112 | 1.9495 | 4.8200e-003 | 6,203.3863 |
| 2023 | 3.3865 | 34.5618 | 28.5434 | 0.0634 | 9.3679 | 1.4253 | 10.7932 | 3.6973 | 1.3113 | 5.0086 | 0.0000 | 6,149.5683 | 6,149.5683 | 1.9490 | 4.4200e-003 | 6,199.6107 |
| 2024 | 15.9561 | 42.5089 | 64.5768 | 0.2493 | 17.8277 | 0.8987 | 18.7263 | 4.8114 | 0.8500 | 5.6614 | 0.0000 | 25,736.6265 | 25,736.6265 | 1.0355 | 2.0390 | 26,370.1281 |
| 2025 | 15.4559 | 40.9842 | 61.5780 | 0.2436 | 17.8277 | 0.8001 | 18.6278 | 4.8114 | 0.7568 | 5.5683 | 0.0000 | 25,251.3405 | 25,251.3405 | 0.9937 | 1.9818 | 25,866.7511 |
| 2026 | 15.1257 | 40.5320 | 59.2960 | 0.2383 | 17.8277 | 0.7964 | 18.6241 | 4.8114 | 0.7534 | 5.5648 | 0.0000 | 24,786.5941 | 24,786.5941 | 0.9616 | 1.9287 | 25,385.3716 |
| 2027 | 14.8282 | 40.1064 | 57.2163 | 0.2331 | 17.8277 | 0.7917 | 18.6194 | 4.8114 | 0.7490 | 5.5605 | 0.0000 | 24,320.5478 | 24,320.5478 | 0.9334 | 1.8770 | 24,903.2368 |
| 2028 | 14.5563 | 39.7673 | 55.4958 | 0.2283 | 17.8277 | 0.7870 | 18.6147 | 4.8114 | 0.7446 | 5.5561 | 0.0000 | 23,891.7804 | 23,891.7804 | 0.9093 | 1.8297 | 24,459.7760 |
| 2029 | 14.3014 | 39.4473 | 54.0075 | 0.2238 | 17.8277 | 0.7823 | 18.6100 | 4.8114 | 0.7402 | 5.5517 | 0.0000 | 23,493.2381 | 23,493.2381 | 0.8883 | 1.7859 | 24,047.6490 |
| 2030 | 13.9678 | 34.3684 | 52.8229 | 0.2238 | 17.8277 | 0.3674 | 18.1952 | 4.8115 | 0.3570 | 5.1685 | 0.0000 | 23,478.4435 | 23,478.4435 | 0.3812 | 1.7471 | 24,008.5996 |
| 2031 | 13.7399 | 34.1651 | 51.7379 | 0.2203 | 17.8277 | 0.3636 | 18.1914 | 4.8115 | 0.3535 | 5.1649 | 0.0000 | 23,162.0847 | 23,162.0847 | 0.3649 | 1.7131 | 23,681.7139 |
| 2032 | 13.5436 | 33.9984 | 50.8341 | 0.2172 | 17.8277 | 0.3601 | 18.1879 | 4.8115 | 0.3502 | 5.1617 | 0.0000 | 22,883.9153 | 22,883.9153 | 0.3508 | 1.6839 | 23,394.4839 |
| 2033 | 13.3674 | 33.8631 | 50.0656 | 0.2144 | 17.8278 | 0.3569 | 18.1846 | 4.8115 | 0.3472 | 5.1587 | 0.0000 | 22,639.0565 | 22,639.0565 | 0.3386 | 1.6587 | 23,141.7990 |
| 2034 | 13.2142 | 33.7345 | 49.3943 | 0.2119 | 17.8278 | 0.3538 | 18.1815 | 4.8115 | 0.3444 | 5.1558 | 0.0000 | 22,420.6528 | 22,420.6528 | 0.3277 | 1.6364 | 22,916.4793 |
| 2035 | 12.9720 | 32.7403 | 48.7800 | 0.2098 | 17.8278 | 0.2827 | 18.1105 | 4.8115 | 0.2735 | 5.0850 | 0.0000 | 22,229.2410 | 22,229.2410 | 0.3089 | 1.6170 | 22,718.8347 |
| 2036 | 12.9720 | 32.7403 | 48.7800 | 0.2098 | 17.8278 | 0.2827 | 18.1105 | 4.8115 | 0.2735 | 5.0850 | 0.0000 | 22,229.2410 | 22,229.2410 | 0.3089 | 1.6170 | 22,718.8347 |
| **Maximum** | **15.9561** | **42.5089** | **64.5768** | **0.2493** | **19.8049** | **1.6358** | **21.4183** | **10.1417** | **1.5049** | **11.6260** | **0.0000** | **25,736.6265** | **25,736.6265** | **1.9495** | **2.0390** | **26,370.1281** |

## 2.1 Overall Construction (Maximum Daily Emission)

**Mitigated Construction**

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2022 | 3.6953 | 38.8964 | 29.5795 | 0.0635 | 19.8049 | 1.6358 | 21.4183 | 10.1417 | 1.5049 | 11.6260 | 0.0000 | 6,153.2112 | 6,153.2112 | 1.9495 | 4.8200e-003 | 6,203.3863 |
| 2023 | 3.3865 | 34.5618 | 28.5434 | 0.0634 | 9.3679 | 1.4253 | 10.7932 | 3.6973 | 1.3113 | 5.0086 | 0.0000 | 6,149.5683 | 6,149.5683 | 1.9490 | 4.4200e-003 | 6,199.6107 |
| 2024 | 15.9561 | 42.5089 | 64.5768 | 0.2493 | 17.8277 | 0.8987 | 18.7263 | 4.8114 | 0.8500 | 5.6614 | 0.0000 | 25,736.6265 | 25,736.6265 | 1.0355 | 2.0390 | 26,370.1281 |
| 2025 | 15.4559 | 40.9842 | 61.5780 | 0.2436 | 17.8277 | 0.8001 | 18.6278 | 4.8114 | 0.7568 | 5.5683 | 0.0000 | 25,251.3405 | 25,251.3405 | 0.9937 | 1.9818 | 25,866.7511 |
| 2026 | 15.1257 | 40.5320 | 59.2960 | 0.2383 | 17.8277 | 0.7964 | 18.6241 | 4.8114 | 0.7534 | 5.5648 | 0.0000 | 24,786.5941 | 24,786.5941 | 0.9616 | 1.9287 | 25,385.3716 |
| 2027 | 14.8282 | 40.1064 | 57.2163 | 0.2331 | 17.8277 | 0.7917 | 18.6194 | 4.8114 | 0.7490 | 5.5605 | 0.0000 | 24,320.5478 | 24,320.5478 | 0.9334 | 1.8770 | 24,903.2368 |
| 2028 | 14.5563 | 39.7673 | 55.4958 | 0.2283 | 17.8277 | 0.7870 | 18.6147 | 4.8114 | 0.7446 | 5.5561 | 0.0000 | 23,891.7804 | 23,891.7804 | 0.9093 | 1.8297 | 24,459.7760 |
| 2029 | 14.3014 | 39.4473 | 54.0075 | 0.2238 | 17.8277 | 0.7823 | 18.6100 | 4.8114 | 0.7402 | 5.5517 | 0.0000 | 23,493.2381 | 23,493.2381 | 0.8883 | 1.7859 | 24,047.6490 |
| 2030 | 13.9678 | 34.3684 | 52.8229 | 0.2238 | 17.8277 | 0.3674 | 18.1952 | 4.8115 | 0.3570 | 5.1685 | 0.0000 | 23,478.4435 | 23,478.4435 | 0.3812 | 1.7471 | 24,008.5996 |
| 2031 | 13.7399 | 34.1651 | 51.7379 | 0.2203 | 17.8277 | 0.3636 | 18.1914 | 4.8115 | 0.3535 | 5.1649 | 0.0000 | 23,162.0847 | 23,162.0847 | 0.3649 | 1.7131 | 23,681.7139 |
| 2032 | 13.5436 | 33.9984 | 50.8341 | 0.2172 | 17.8277 | 0.3601 | 18.1879 | 4.8115 | 0.3502 | 5.1617 | 0.0000 | 22,883.9153 | 22,883.9153 | 0.3508 | 1.6839 | 23,394.4839 |
| 2033 | 13.3674 | 33.8631 | 50.0656 | 0.2144 | 17.8278 | 0.3569 | 18.1846 | 4.8115 | 0.3472 | 5.1587 | 0.0000 | 22,639.0565 | 22,639.0565 | 0.3386 | 1.6587 | 23,141.7990 |
| 2034 | 13.2142 | 33.7345 | 49.3943 | 0.2119 | 17.8278 | 0.3538 | 18.1815 | 4.8115 | 0.3444 | 5.1558 | 0.0000 | 22,420.6528 | 22,420.6528 | 0.3277 | 1.6364 | 22,916.4793 |
| 2035 | 12.9720 | 32.7403 | 48.7800 | 0.2098 | 17.8278 | 0.2827 | 18.1105 | 4.8115 | 0.2735 | 5.0850 | 0.0000 | 22,229.2410 | 22,229.2410 | 0.3089 | 1.6170 | 22,718.8347 |
| 2036 | 12.9720 | 32.7403 | 48.7800 | 0.2098 | 17.8278 | 0.2827 | 18.1105 | 4.8115 | 0.2735 | 5.0850 | 0.0000 | 22,229.2410 | 22,229.2410 | 0.3089 | 1.6170 | 22,718.8347 |
| **Maximum** | **15.9561** | **42.5089** | **64.5768** | **0.2493** | **19.8049** | **1.6358** | **21.4183** | **10.1417** | **1.5049** | **11.6260** | **0.0000** | **25,736.6265** | **25,736.6265** | **1.9495** | **2.0390** | **26,370.1281** |

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 40.3298 | 7.4439 | 63.6981 | 0.0463 | | 0.8835 | 0.8835 | | 0.8835 | 0.8835 | 0.0000 | 8,717.1181 | 8,717.1181 | 0.2699 | 0.1578 | 8,770.8892 |
| Energy | 0.5322 | 4.5566 | 1.9979 | 0.0290 | | 0.3677 | 0.3677 | | 0.3677 | 0.3677 | | 5,806.0259 | 5,806.0259 | 0.1113 | 0.1064 | 5,840.5282 |
| Mobile | 17.3427 | 37.3644 | 212.8523 | 0.5643 | 76.0754 | 0.4131 | 76.4885 | 20.2909 | 0.3887 | 20.6796 | | 61,791.6581 | 61,791.6581 | 2.5469 | 3.0643 | 62,768.4887 |
| **Total** | **58.2047** | **49.3648** | **278.5483** | **0.6395** | **76.0754** | **1.6643** | **77.7397** | **20.2909** | **1.6399** | **21.9308** | **0.0000** | **76,314.8021** | **76,314.8021** | **2.9281** | **3.3285** | **77,379.9062** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 37.2542 | 7.3004 | 49.0701 | 0.0451 | | 0.7975 | 0.7975 | | 0.7975 | 0.7975 | 0.0000 | 8,684.0825 | 8,684.0825 | 0.2199 | 0.1578 | 8,736.6033 |
| Energy | 0.5322 | 4.5566 | 1.9979 | 0.0290 | | 0.3677 | 0.3677 | | 0.3677 | 0.3677 | | 5,806.0259 | 5,806.0259 | 0.1113 | 0.1064 | 5,840.5282 |
| Mobile | 17.1085 | 36.7453 | 209.3638 | 0.5532 | 74.5539 | 0.4052 | 74.9591 | 19.8851 | 0.3813 | 20.2663 | | 60,579.8355 | 60,579.8355 | 2.5075 | 3.0109 | 61,539.7633 |
| **Total** | **54.8949** | **48.6022** | **260.4318** | **0.6273** | **74.5539** | **1.5704** | **76.1243** | **19.8851** | **1.5465** | **21.4315** | **0.0000** | **75,069.9439** | **75,069.9439** | **2.8387** | **3.2751** | **76,116.8948** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **5.69** | **1.54** | **6.50** | **1.91** | **2.00** | **5.64** | **2.08** | **2.00** | **5.70** | **2.28** | **0.00** | **1.63** | **1.63** | **3.05** | **1.60** | **1.63** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 5/1/2022 | 10/14/2022 | 5 | 120 | |
| 2 | Grading | Grading | 10/15/2022 | 12/22/2023 | 5 | 310 | |
| 3 | Paving | Paving | 12/23/2023 | 10/25/2024 | 5 | 220 | |
| 4 | Building Construction | Building Construction | 10/26/2024 | 9/12/2036 | 5 | 3100 | |
| 5 | Architectural Coating | Architectural Coating | 11/9/2024 | 9/26/2036 | 5 | 3100 | |

**Acres of Grading (Site Preparation Phase): 180**

**Acres of Grading (Grading Phase): 930**

**Acres of Paving: 46.6**

**Residential Indoor: 2,693,655; Residential Outdoor: 897,885; Non-Residential Indoor: 84,648; Non-Residential Outdoor: 28,216; Striped Parking Area: 121,794 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | | | |
|---|---|---|---|---|---|
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 1,439.00 | 537.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 288.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.2 Site Preparation - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 19.6570 | 0.0000 | 19.6570 | 10.1025 | 0.0000 | 10.1025 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.1701 | 33.0835 | 19.6978 | 0.0380 | | 1.6126 | 1.6126 | | 1.4836 | 1.4836 | | 3,686.0619 | 3,686.0619 | 1.1922 | | 3,715.8655 |
| **Total** | **3.1701** | **33.0835** | **19.6978** | **0.0380** | **19.6570** | **1.6126** | **21.2696** | **10.1025** | **1.4836** | **11.5860** | | **3,686.0619** | **3,686.0619** | **1.1922** | | **3,715.8655** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0634 | 0.0476 | 0.4842 | 1.2500e-003 | 0.1479 | 8.1000e-004 | 0.1487 | 0.0392 | 7.5000e-004 | 0.0400 | | 127.6206 | 127.6206 | 4.7700e-003 | 4.3400e-003 | 129.0334 |
| **Total** | **0.0634** | **0.0476** | **0.4842** | **1.2500e-003** | **0.1479** | **8.1000e-004** | **0.1487** | **0.0392** | **7.5000e-004** | **0.0400** | | **127.6206** | **127.6206** | **4.7700e-003** | **4.3400e-003** | **129.0334** |

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.2 Site Preparation - 2022

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 19.6570 | 0.0000 | 19.6570 | 10.1025 | 0.0000 | 10.1025 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.1701 | 33.0835 | 19.6978 | 0.0380 | | 1.6126 | 1.6126 | | 1.4836 | 1.4836 | 0.0000 | 3,686.0619 | 3,686.0619 | 1.1922 | | 3,715.8655 |
| **Total** | **3.1701** | **33.0835** | **19.6978** | **0.0380** | **19.6570** | **1.6126** | **21.2696** | **10.1025** | **1.4836** | **11.5860** | **0.0000** | **3,686.0619** | **3,686.0619** | **1.1922** | | **3,715.8655** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0634 | 0.0476 | 0.4842 | 1.2500e-003 | 0.1479 | 8.1000e-004 | 0.1487 | 0.0392 | 7.5000e-004 | 0.0400 | | 127.6206 | 127.6206 | 4.7700e-003 | 4.3400e-003 | 129.0334 |
| **Total** | **0.0634** | **0.0476** | **0.4842** | **1.2500e-003** | **0.1479** | **8.1000e-004** | **0.1487** | **0.0392** | **7.5000e-004** | **0.0400** | | **127.6206** | **127.6206** | **4.7700e-003** | **4.3400e-003** | **129.0334** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.6248 | 38.8435 | 29.0415 | 0.0621 | | 1.6349 | 1.6349 | | 1.5041 | 1.5041 | | 6,011.4105 | 6,011.4105 | 1.9442 | | 6,060.0158 |
| **Total** | **3.6248** | **38.8435** | **29.0415** | **0.0621** | **9.2036** | **1.6349** | **10.8385** | **3.6538** | **1.5041** | **5.1579** | | **6,011.4105** | **6,011.4105** | **1.9442** | | **6,060.0158** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0705 | 0.0529 | 0.5380 | 1.3900e-003 | 0.1643 | 9.0000e-004 | 0.1652 | 0.0436 | 8.3000e-004 | 0.0444 | | 141.8007 | 141.8007 | 5.3000e-003 | 4.8200e-003 | 143.3704 |
| **Total** | **0.0705** | **0.0529** | **0.5380** | **1.3900e-003** | **0.1643** | **9.0000e-004** | **0.1652** | **0.0436** | **8.3000e-004** | **0.0444** | | **141.8007** | **141.8007** | **5.3000e-003** | **4.8200e-003** | **143.3704** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2022

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.6248 | 38.8435 | 29.0415 | 0.0621 | | 1.6349 | 1.6349 | | 1.5041 | 1.5041 | 0.0000 | 6,011.4105 | 6,011.4105 | 1.9442 | | 6,060.0158 |
| **Total** | **3.6248** | **38.8435** | **29.0415** | **0.0621** | **9.2036** | **1.6349** | **10.8385** | **3.6538** | **1.5041** | **5.1579** | **0.0000** | **6,011.4105** | **6,011.4105** | **1.9442** | | **6,060.0158** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0705 | 0.0529 | 0.5380 | 1.3900e-003 | 0.1643 | 9.0000e-004 | 0.1652 | 0.0436 | 8.3000e-004 | 0.0444 | | 141.8007 | 141.8007 | 5.3000e-003 | 4.8200e-003 | 143.3704 |
| **Total** | **0.0705** | **0.0529** | **0.5380** | **1.3900e-003** | **0.1643** | **9.0000e-004** | **0.1652** | **0.0436** | **8.3000e-004** | **0.0444** | | **141.8007** | **141.8007** | **5.3000e-003** | **4.8200e-003** | **143.3704** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.3217 | 34.5156 | 28.0512 | 0.0621 | | 1.4245 | 1.4245 | | 1.3105 | 1.3105 | | 6,011.4777 | 6,011.4777 | 1.9442 | | 6,060.0836 |
| **Total** | **3.3217** | **34.5156** | **28.0512** | **0.0621** | **9.2036** | **1.4245** | **10.6281** | **3.6538** | **1.3105** | **4.9643** | | **6,011.4777** | **6,011.4777** | **1.9442** | | **6,060.0836** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0647 | 0.0462 | 0.4922 | 1.3500e-003 | 0.1643 | 8.5000e-004 | 0.1651 | 0.0436 | 7.8000e-004 | 0.0444 | | 138.0905 | 138.0905 | 4.7500e-003 | 4.4200e-003 | 139.5271 |
| **Total** | **0.0647** | **0.0462** | **0.4922** | **1.3500e-003** | **0.1643** | **8.5000e-004** | **0.1651** | **0.0436** | **7.8000e-004** | **0.0444** | | **138.0905** | **138.0905** | **4.7500e-003** | **4.4200e-003** | **139.5271** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2023

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.3217 | 34.5156 | 28.0512 | 0.0621 | | 1.4245 | 1.4245 | | 1.3105 | 1.3105 | 0.0000 | 6,011.4777 | 6,011.4777 | 1.9442 | | 6,060.0836 |
| **Total** | **3.3217** | **34.5156** | **28.0512** | **0.0621** | **9.2036** | **1.4245** | **10.6281** | **3.6538** | **1.3105** | **4.9643** | **0.0000** | **6,011.4777** | **6,011.4777** | **1.9442** | | **6,060.0836** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0647 | 0.0462 | 0.4922 | 1.3500e-003 | 0.1643 | 8.5000e-004 | 0.1651 | 0.0436 | 7.8000e-004 | 0.0444 | | 138.0905 | 138.0905 | 4.7500e-003 | 4.4200e-003 | 139.5271 |
| **Total** | **0.0647** | **0.0462** | **0.4922** | **1.3500e-003** | **0.1643** | **8.5000e-004** | **0.1651** | **0.0436** | **7.8000e-004** | **0.0444** | | **138.0905** | **138.0905** | **4.7500e-003** | **4.4200e-003** | **139.5271** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Paving - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.5550 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.5877** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0486 | 0.0347 | 0.3692 | 1.0100e-003 | 0.1232 | 6.4000e-004 | 0.1239 | 0.0327 | 5.8000e-004 | 0.0333 | | 103.5679 | 103.5679 | 3.5700e-003 | 3.3200e-003 | 104.6453 |
| **Total** | **0.0486** | **0.0347** | **0.3692** | **1.0100e-003** | **0.1232** | **6.4000e-004** | **0.1239** | **0.0327** | **5.8000e-004** | **0.0333** | | **103.5679** | **103.5679** | **3.5700e-003** | **3.3200e-003** | **104.6453** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Paving - 2023

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | 0.0000 | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.5550 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.5877** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | **0.0000** | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0486 | 0.0347 | 0.3692 | 1.0100e-003 | 0.1232 | 6.4000e-004 | 0.1239 | 0.0327 | 5.8000e-004 | 0.0333 | | 103.5679 | 103.5679 | 3.5700e-003 | 3.3200e-003 | 104.6453 |
| **Total** | **0.0486** | **0.0347** | **0.3692** | **1.0100e-003** | **0.1232** | **6.4000e-004** | **0.1239** | **0.0327** | **5.8000e-004** | **0.0333** | | **103.5679** | **103.5679** | **3.5700e-003** | **3.3200e-003** | **104.6453** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Paving - 2024

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.9882 | 9.5246 | 14.6258 | 0.0228 | | 0.4685 | 0.4685 | | 0.4310 | 0.4310 | | 2,207.5472 | 2,207.5472 | 0.7140 | | 2,225.3963 |
| Paving | 0.5550 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.5431** | **9.5246** | **14.6258** | **0.0228** | | **0.4685** | **0.4685** | | **0.4310** | **0.4310** | | **2,207.5472** | **2,207.5472** | **0.7140** | | **2,225.3963** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0448 | 0.0305 | 0.3420 | 9.8000e-004 | 0.1232 | 6.0000e-004 | 0.1238 | 0.0327 | 5.5000e-004 | 0.0332 | | 100.9808 | 100.9808 | 3.2100e-003 | 3.0600e-003 | 101.9734 |
| **Total** | **0.0448** | **0.0305** | **0.3420** | **9.8000e-004** | **0.1232** | **6.0000e-004** | **0.1238** | **0.0327** | **5.5000e-004** | **0.0332** | | **100.9808** | **100.9808** | **3.2100e-003** | **3.0600e-003** | **101.9734** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Paving - 2024

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.9882 | 9.5246 | 14.6258 | 0.0228 | | 0.4685 | 0.4685 | | 0.4310 | 0.4310 | 0.0000 | 2,207.5472 | 2,207.5472 | 0.7140 | | 2,225.3963 |
| Paving | 0.5550 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.5431** | **9.5246** | **14.6258** | **0.0228** | | **0.4685** | **0.4685** | | **0.4310** | **0.4310** | **0.0000** | **2,207.5472** | **2,207.5472** | **0.7140** | | **2,225.3963** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0448 | 0.0305 | 0.3420 | 9.8000e-004 | 0.1232 | 6.0000e-004 | 0.1238 | 0.0327 | 5.5000e-004 | 0.0332 | | 100.9808 | 100.9808 | 3.2100e-003 | 3.0600e-003 | 101.9734 |
| **Total** | **0.0448** | **0.0305** | **0.3420** | **9.8000e-004** | **0.1232** | **6.0000e-004** | **0.1238** | **0.0327** | **5.5000e-004** | **0.0332** | | **100.9808** | **100.9808** | **3.2100e-003** | **3.0600e-003** | **101.9734** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2024

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4716 | 13.4438 | 16.1668 | 0.0270 | | 0.6133 | 0.6133 | | 0.5769 | 0.5769 | | 2,555.6989 | 2,555.6989 | 0.6044 | | 2,570.8077 |
| **Total** | **1.4716** | **13.4438** | **16.1668** | **0.0270** | | **0.6133** | **0.6133** | | **0.5769** | **0.5769** | | **2,555.6989** | **2,555.6989** | **0.6044** | | **2,570.8077** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5598 | 24.3306 | 7.2289 | 0.1067 | 3.6408 | 0.1550 | 3.7958 | 1.0484 | 0.1483 | 1.1967 | | 11,273.2226 | 11,273.2226 | 0.0456 | 1.6865 | 11,776.9394 |
| Worker | 4.3018 | 2.9295 | 32.8053 | 0.0939 | 11.8210 | 0.0578 | 11.8789 | 3.1355 | 0.0532 | 3.1887 | | 9,687.4254 | 9,687.4254 | 0.3081 | 0.2937 | 9,782.6476 |
| **Total** | **4.8616** | **27.2601** | **40.0342** | **0.2006** | **15.4618** | **0.2129** | **15.6747** | **4.1839** | **0.2015** | **4.3854** | | **20,960.6480** | **20,960.6480** | **0.3537** | **1.9802** | **21,559.5870** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2024

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4716 | 13.4438 | 16.1668 | 0.0270 | | 0.6133 | 0.6133 | | 0.5769 | 0.5769 | 0.0000 | 2,555.6989 | 2,555.6989 | 0.6044 | | 2,570.8077 |
| **Total** | **1.4716** | **13.4438** | **16.1668** | **0.0270** | | **0.6133** | **0.6133** | | **0.5769** | **0.5769** | **0.0000** | **2,555.6989** | **2,555.6989** | **0.6044** | | **2,570.8077** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5598 | 24.3306 | 7.2289 | 0.1067 | 3.6408 | 0.1550 | 3.7958 | 1.0484 | 0.1483 | 1.1967 | | 11,273.2226 | 11,273.2226 | 0.0456 | 1.6865 | 11,776.9394 |
| Worker | 4.3018 | 2.9295 | 32.8053 | 0.0939 | 11.8210 | 0.0578 | 11.8789 | 3.1355 | 0.0532 | 3.1887 | | 9,687.4254 | 9,687.4254 | 0.3081 | 0.2937 | 9,782.6476 |
| **Total** | **4.8616** | **27.2601** | **40.0342** | **0.2006** | **15.4618** | **0.2129** | **15.6747** | **4.1839** | **0.2015** | **4.3854** | | **20,960.6480** | **20,960.6480** | **0.3537** | **1.9802** | **21,559.5870** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5460 | 24.2466 | 7.0792 | 0.1048 | 3.6408 | 0.1550 | 3.7957 | 1.0484 | 0.1482 | 1.1966 | | 11,068.0319 | 11,068.0319 | 0.0437 | 1.6544 | 11,562.1225 |
| Worker | 3.9916 | 2.6017 | 30.5006 | 0.0907 | 11.8210 | 0.0551 | 11.8761 | 3.1355 | 0.0507 | 3.1862 | | 9,453.3936 | 9,453.3936 | 0.2780 | 0.2728 | 9,541.6437 |
| **Total** | **4.5376** | **26.8483** | **37.5798** | **0.1955** | **15.4618** | **0.2100** | **15.6718** | **4.1839** | **0.1989** | **4.3828** | | **20,521.4255** | **20,521.4255** | **0.3217** | **1.9272** | **21,103.7663** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2025

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5460 | 24.2466 | 7.0792 | 0.1048 | 3.6408 | 0.1550 | 3.7957 | 1.0484 | 0.1482 | 1.1966 | | 11,068.0319 | 11,068.0319 | 0.0437 | 1.6544 | 11,562.1225 |
| Worker | 3.9916 | 2.6017 | 30.5006 | 0.0907 | 11.8210 | 0.0551 | 11.8761 | 3.1355 | 0.0507 | 3.1862 | | 9,453.3936 | 9,453.3936 | 0.2780 | 0.2728 | 9,541.6437 |
| **Total** | **4.5376** | **26.8483** | **37.5798** | **0.1955** | **15.4618** | **0.2100** | **15.6718** | **4.1839** | **0.1989** | **4.3828** | | **20,521.4255** | **20,521.4255** | **0.3217** | **1.9272** | **21,103.7663** |

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2026

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5340 | 24.1140 | 6.9569 | 0.1028 | 3.6408 | 0.1542 | 3.7950 | 1.0484 | 0.1475 | 1.1959 | | 10,860.0215 | 10,860.0215 | 0.0422 | 1.6217 | 11,344.3404 |
| Worker | 3.7265 | 2.3354 | 28.7011 | 0.0880 | 11.8210 | 0.0526 | 11.8737 | 3.1355 | 0.0484 | 3.1839 | | 9,239.4716 | 9,239.4716 | 0.2525 | 0.2558 | 9,322.0047 |
| **Total** | **4.2604** | **26.4494** | **35.6580** | **0.1907** | **15.4618** | **0.2068** | **15.6686** | **4.1839** | **0.1959** | **4.3798** | | **20,099.4932** | **20,099.4932** | **0.2947** | **1.8775** | **20,666.3451** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2026

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5340 | 24.1140 | 6.9569 | 0.1028 | 3.6408 | 0.1542 | 3.7950 | 1.0484 | 0.1475 | 1.1959 | | 10,860.0215 | 10,860.0215 | 0.0422 | 1.6217 | 11,344.3404 |
| Worker | 3.7265 | 2.3354 | 28.7011 | 0.0880 | 11.8210 | 0.0526 | 11.8737 | 3.1355 | 0.0484 | 3.1839 | | 9,239.4716 | 9,239.4716 | 0.2525 | 0.2558 | 9,322.0047 |
| **Total** | **4.2604** | **26.4494** | **35.6580** | **0.1907** | **15.4618** | **0.2068** | **15.6686** | **4.1839** | **0.1959** | **4.3798** | | **20,099.4932** | **20,099.4932** | **0.2947** | **1.8775** | **20,666.3451** |

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2027

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5237 | 23.9551 | 6.8553 | 0.1007 | 3.6408 | 0.1531 | 3.7939 | 1.0484 | 0.1464 | 1.1949 | | 10,637.8095 | 10,637.8095 | 0.0408 | 1.5872 | 11,111.8245 |
| Worker | 3.4871 | 2.1132 | 27.0529 | 0.0854 | 11.8210 | 0.0496 | 11.8707 | 3.1355 | 0.0457 | 3.1812 | | 9,036.3000 | 9,036.3000 | 0.2302 | 0.2415 | 9,114.0130 |
| **Total** | **4.0109** | **26.0683** | **33.9082** | **0.1861** | **15.4618** | **0.2027** | **15.6646** | **4.1839** | **0.1921** | **4.3760** | | **19,674.1095** | **19,674.1095** | **0.2710** | **1.8287** | **20,225.8375** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2027

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5237 | 23.9551 | 6.8553 | 0.1007 | 3.6408 | 0.1531 | 3.7939 | 1.0484 | 0.1464 | 1.1949 | | 10,637.8095 | 10,637.8095 | 0.0408 | 1.5872 | 11,111.8245 |
| Worker | 3.4871 | 2.1132 | 27.0529 | 0.0854 | 11.8210 | 0.0496 | 11.8707 | 3.1355 | 0.0457 | 3.1812 | | 9,036.3000 | 9,036.3000 | 0.2302 | 0.2415 | 9,114.0130 |
| **Total** | **4.0109** | **26.0683** | **33.9082** | **0.1861** | **15.4618** | **0.2027** | **15.6646** | **4.1839** | **0.1921** | **4.3760** | | **19,674.1095** | **19,674.1095** | **0.2710** | **1.8287** | **20,225.8375** |

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2028

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5151 | 23.8370 | 6.7746 | 0.0987 | 3.6408 | 0.1521 | 3.7929 | 1.0484 | 0.1455 | 1.1939 | | 10,425.5844 | 10,425.5844 | 0.0396 | 1.5542 | 10,889.7177 |
| Worker | 3.2678 | 1.9291 | 25.6866 | 0.0830 | 11.8210 | 0.0465 | 11.8676 | 3.1355 | 0.0428 | 3.1783 | | 8,855.8689 | 8,855.8689 | 0.2112 | 0.2296 | 8,929.5727 |
| **Total** | **3.7829** | **25.7661** | **32.4612** | **0.1817** | **15.4619** | **0.1986** | **15.6605** | **4.1839** | **0.1883** | **4.3722** | | **19,281.4533** | **19,281.4533** | **0.2508** | **1.7838** | **19,819.2904** |

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2028

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5151 | 23.8370 | 6.7746 | 0.0987 | 3.6408 | 0.1521 | 3.7929 | 1.0484 | 0.1455 | 1.1939 | | 10,425.5844 | 10,425.5844 | 0.0396 | 1.5542 | 10,889.7177 |
| Worker | 3.2678 | 1.9291 | 25.6866 | 0.0830 | 11.8210 | 0.0465 | 11.8676 | 3.1355 | 0.0428 | 3.1783 | | 8,855.8689 | 8,855.8689 | 0.2112 | 0.2296 | 8,929.5727 |
| **Total** | **3.7829** | **25.7661** | **32.4612** | **0.1817** | **15.4619** | **0.1986** | **15.6605** | **4.1839** | **0.1883** | **4.3722** | | **19,281.4533** | **19,281.4533** | **0.2508** | **1.7838** | **19,819.2904** |

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2029

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5073 | 23.7035 | 6.7049 | 0.0967 | 3.6408 | 0.1509 | 3.7918 | 1.0484 | 0.1444 | 1.1928 | | 10,220.5203 | 10,220.5203 | 0.0386 | 1.5223 | 10,675.1221 |
| Worker | 3.0619 | 1.7737 | 24.5045 | 0.0810 | 11.8210 | 0.0436 | 11.8646 | 3.1355 | 0.0401 | 3.1756 | | 8,694.6558 | 8,694.6558 | 0.1944 | 0.2197 | 8,764.9823 |
| **Total** | **3.5692** | **25.4772** | **31.2094** | **0.1777** | **15.4619** | **0.1945** | **15.6564** | **4.1839** | **0.1845** | **4.3684** | | **18,915.1761** | **18,915.1761** | **0.2330** | **1.7420** | **19,440.1044** |

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2029

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5073 | 23.7035 | 6.7049 | 0.0967 | 3.6408 | 0.1509 | 3.7918 | 1.0484 | 0.1444 | 1.1928 | | 10,220.5203 | 10,220.5203 | 0.0386 | 1.5223 | 10,675.1221 |
| Worker | 3.0619 | 1.7737 | 24.5045 | 0.0810 | 11.8210 | 0.0436 | 11.8646 | 3.1355 | 0.0401 | 3.1756 | | 8,694.6558 | 8,694.6558 | 0.1944 | 0.2197 | 8,764.9823 |
| **Total** | **3.5692** | **25.4772** | **31.2094** | **0.1777** | **15.4619** | **0.1945** | **15.6564** | **4.1839** | **0.1845** | **4.3684** | | **18,915.1761** | **18,915.1761** | **0.2330** | **1.7420** | **19,440.1044** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2030

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5010 | 23.6059 | 6.6520 | 0.0950 | 3.6408 | 0.1500 | 3.7909 | 1.0484 | 0.1435 | 1.1920 | | 10,034.4905 | 10,034.4905 | 0.0378 | 1.4934 | 10,480.4572 |
| Worker | 2.8711 | 1.6428 | 23.5108 | 0.0791 | 11.8210 | 0.0408 | 11.8618 | 3.1355 | 0.0375 | 3.1730 | | 8,553.1412 | 8,553.1412 | 0.1798 | 0.2114 | 8,620.6321 |
| **Total** | **3.3721** | **25.2487** | **30.1628** | **0.1741** | **15.4619** | **0.1908** | **15.6527** | **4.1839** | **0.1811** | **4.3650** | | **18,587.6317** | **18,587.6317** | **0.2176** | **1.7048** | **19,101.0894** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2030

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.5010 | 23.6059 | 6.6520 | 0.0950 | 3.6408 | 0.1500 | 3.7909 | 1.0484 | 0.1435 | 1.1920 | | 10,034.4905 | 10,034.4905 | 0.0378 | 1.4934 | 10,480.4572 |
| Worker | 2.8711 | 1.6428 | 23.5108 | 0.0791 | 11.8210 | 0.0408 | 11.8618 | 3.1355 | 0.0375 | 3.1730 | | 8,553.1412 | 8,553.1412 | 0.1798 | 0.2114 | 8,620.6321 |
| **Total** | **3.3721** | **25.2487** | **30.1628** | **0.1741** | **15.4619** | **0.1908** | **15.6527** | **4.1839** | **0.1811** | **4.3650** | | **18,587.6317** | **18,587.6317** | **0.2176** | **1.7048** | **19,101.0894** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2031

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.4961 | 23.5406 | 6.6181 | 0.0934 | 3.6408 | 0.1493 | 3.7902 | 1.0484 | 0.1429 | 1.1913 | | 9,869.2251 | 9,869.2251 | 0.0372 | 1.4679 | 10,307.5938 |
| Worker | 2.6853 | 1.5278 | 22.6350 | 0.0775 | 11.8210 | 0.0382 | 11.8592 | 3.1355 | 0.0351 | 3.1706 | | 8,427.2446 | 8,427.2446 | 0.1668 | 0.2043 | 8,492.2951 |
| **Total** | **3.1814** | **25.0685** | **29.2530** | **0.1709** | **15.4619** | **0.1875** | **15.6494** | **4.1839** | **0.1780** | **4.3619** | | **18,296.4697** | **18,296.4697** | **0.2039** | **1.6722** | **18,799.8889** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2031

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.4961 | 23.5406 | 6.6181 | 0.0934 | 3.6408 | 0.1493 | 3.7902 | 1.0484 | 0.1429 | 1.1913 | | 9,869.2251 | 9,869.2251 | 0.0372 | 1.4679 | 10,307.5938 |
| Worker | 2.6853 | 1.5278 | 22.6350 | 0.0775 | 11.8210 | 0.0382 | 11.8592 | 3.1355 | 0.0351 | 3.1706 | | 8,427.2446 | 8,427.2446 | 0.1668 | 0.2043 | 8,492.2951 |
| **Total** | **3.1814** | **25.0685** | **29.2530** | **0.1709** | **15.4619** | **0.1875** | **15.6494** | **4.1839** | **0.1780** | **4.3619** | | **18,296.4697** | **18,296.4697** | **0.2039** | **1.6722** | **18,799.8889** |

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2032

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.4926 | 23.4846 | 6.6021 | 0.0920 | 3.6409 | 0.1487 | 3.7895 | 1.0484 | 0.1422 | 1.1907 | | 9,723.4306 | 9,723.4306 | 0.0366 | 1.4456 | 10,155.1220 |
| Worker | 2.5247 | 1.4355 | 21.8952 | 0.0760 | 11.8210 | 0.0358 | 11.8569 | 3.1355 | 0.0330 | 3.1685 | | 8,316.9450 | 8,316.9450 | 0.1555 | 0.1986 | 8,380.0096 |
| **Total** | **3.0173** | **24.9202** | **28.4973** | **0.1680** | **15.4619** | **0.1845** | **15.6464** | **4.1839** | **0.1752** | **4.3591** | | **18,040.3756** | **18,040.3756** | **0.1921** | **1.6441** | **18,535.1316** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2032

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.4926 | 23.4846 | 6.6021 | 0.0920 | 3.6409 | 0.1487 | 3.7895 | 1.0484 | 0.1422 | 1.1907 | | 9,723.4306 | 9,723.4306 | 0.0366 | 1.4456 | 10,155.1220 |
| Worker | 2.5247 | 1.4355 | 21.8952 | 0.0760 | 11.8210 | 0.0358 | 11.8569 | 3.1355 | 0.0330 | 3.1685 | | 8,316.9450 | 8,316.9450 | 0.1555 | 0.1986 | 8,380.0096 |
| **Total** | **3.0173** | **24.9202** | **28.4973** | **0.1680** | **15.4619** | **0.1845** | **15.6464** | **4.1839** | **0.1752** | **4.3591** | | **18,040.3756** | **18,040.3756** | **0.1921** | **1.6441** | **18,535.1316** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2033

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.4903 | 23.4408 | 6.6007 | 0.0908 | 3.6409 | 0.1481 | 3.7889 | 1.0484 | 0.1416 | 1.1901 | | 9,595.2166 | 9,595.2166 | 0.0363 | 1.4260 | 10,021.0554 |
| Worker | 2.3798 | 1.3594 | 21.2560 | 0.0747 | 11.8210 | 0.0336 | 11.8547 | 3.1355 | 0.0310 | 3.1664 | | 8,219.7522 | 8,219.7522 | 0.1455 | 0.1939 | 8,281.1725 |
| **Total** | **2.8701** | **24.8001** | **27.8567** | **0.1655** | **15.4619** | **0.1817** | **15.6436** | **4.1839** | **0.1726** | **4.3565** | | **17,814.9688** | **17,814.9688** | **0.1818** | **1.6199** | **18,302.2278** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2033

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.4903 | 23.4408 | 6.6007 | 0.0908 | 3.6409 | 0.1481 | 3.7889 | 1.0484 | 0.1416 | 1.1901 | | 9,595.2166 | 9,595.2166 | 0.0363 | 1.4260 | 10,021.0554 |
| Worker | 2.3798 | 1.3594 | 21.2560 | 0.0747 | 11.8210 | 0.0336 | 11.8547 | 3.1355 | 0.0310 | 3.1664 | | 8,219.7522 | 8,219.7522 | 0.1455 | 0.1939 | 8,281.1725 |
| **Total** | **2.8701** | **24.8001** | **27.8567** | **0.1655** | **15.4619** | **0.1817** | **15.6436** | **4.1839** | **0.1726** | **4.3565** | | **17,814.9688** | **17,814.9688** | **0.1818** | **1.6199** | **18,302.2278** |

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2034

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.4885 | 23.3856 | 6.6042 | 0.0897 | 3.6409 | 0.1474 | 3.7882 | 1.0484 | 0.1410 | 1.1894 | | 9,479.0755 | 9,479.0755 | 0.0360 | 1.4082 | 9,899.6155 |
| Worker | 2.2535 | 1.2982 | 20.6938 | 0.0736 | 11.8210 | 0.0316 | 11.8527 | 3.1355 | 0.0291 | 3.1646 | | 8,134.5432 | 8,134.5432 | 0.1367 | 0.1901 | 8,194.6160 |
| **Total** | **2.7421** | **24.6838** | **27.2980** | **0.1633** | **15.4619** | **0.1790** | **15.6409** | **4.1839** | **0.1701** | **4.3540** | | **17,613.6188** | **17,613.6188** | **0.1727** | **1.5983** | **18,094.2315** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2034

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.4885 | 23.3856 | 6.6042 | 0.0897 | 3.6409 | 0.1474 | 3.7882 | 1.0484 | 0.1410 | 1.1894 | | 9,479.0755 | 9,479.0755 | 0.0360 | 1.4082 | 9,899.6155 |
| Worker | 2.2535 | 1.2982 | 20.6938 | 0.0736 | 11.8210 | 0.0316 | 11.8527 | 3.1355 | 0.0291 | 3.1646 | | 8,134.5432 | 8,134.5432 | 0.1367 | 0.1901 | 8,194.6160 |
| **Total** | **2.7421** | **24.6838** | **27.2980** | **0.1633** | **15.4619** | **0.1790** | **15.6409** | **4.1839** | **0.1701** | **4.3540** | | **17,613.6188** | **17,613.6188** | **0.1727** | **1.5983** | **18,094.2315** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2035

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.2168 | 7.1613 | 16.1178 | 0.0310 | | 0.0904 | 0.0904 | | 0.0904 | 0.0904 | | 2,897.5468 | 2,897.5468 | 0.1079 | | 2,900.2448 |
| **Total** | **1.2168** | **7.1613** | **16.1178** | **0.0310** | | **0.0904** | **0.0904** | | **0.0904** | **0.0904** | | **2,897.5468** | **2,897.5468** | **0.1079** | | **2,900.2448** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.4866 | 23.3201 | 6.6078 | 0.0888 | 3.6409 | 0.1466 | 3.7875 | 1.0484 | 0.1402 | 1.1887 | | 9,375.7571 | 9,375.7571 | 0.0357 | 1.3924 | 9,791.5842 |
| Worker | 2.1411 | 1.2508 | 20.2145 | 0.0726 | 11.8210 | 0.0298 | 11.8509 | 3.1355 | 0.0275 | 3.1629 | | 8,061.1406 | 8,061.1406 | 0.1290 | 0.1872 | 8,120.1409 |
| **Total** | **2.6277** | **24.5709** | **26.8223** | **0.1613** | **15.4619** | **0.1764** | **15.6384** | **4.1839** | **0.1677** | **4.3516** | | **17,436.8977** | **17,436.8977** | **0.1648** | **1.5796** | **17,911.7251** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2035

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.2168 | 7.1613 | 16.1178 | 0.0310 | | 0.0904 | 0.0904 | | 0.0904 | 0.0904 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1079 | | 2,900.2448 |
| **Total** | **1.2168** | **7.1613** | **16.1178** | **0.0310** | | **0.0904** | **0.0904** | | **0.0904** | **0.0904** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1079** | | **2,900.2448** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.4866 | 23.3201 | 6.6078 | 0.0888 | 3.6409 | 0.1466 | 3.7875 | 1.0484 | 0.1402 | 1.1887 | | 9,375.7571 | 9,375.7571 | 0.0357 | 1.3924 | 9,791.5842 |
| Worker | 2.1411 | 1.2508 | 20.2145 | 0.0726 | 11.8210 | 0.0298 | 11.8509 | 3.1355 | 0.0275 | 3.1629 | | 8,061.1406 | 8,061.1406 | 0.1290 | 0.1872 | 8,120.1409 |
| **Total** | **2.6277** | **24.5709** | **26.8223** | **0.1613** | **15.4619** | **0.1764** | **15.6384** | **4.1839** | **0.1677** | **4.3516** | | **17,436.8977** | **17,436.8977** | **0.1648** | **1.5796** | **17,911.7251** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2036

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.2168 | 7.1613 | 16.1178 | 0.0310 | | 0.0904 | 0.0904 | | 0.0904 | 0.0904 | | 2,897.5468 | 2,897.5468 | 0.1079 | | 2,900.2448 |
| **Total** | **1.2168** | **7.1613** | **16.1178** | **0.0310** | | **0.0904** | **0.0904** | | **0.0904** | **0.0904** | | **2,897.5468** | **2,897.5468** | **0.1079** | | **2,900.2448** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.4866 | 23.3201 | 6.6078 | 0.0888 | 3.6409 | 0.1466 | 3.7875 | 1.0484 | 0.1402 | 1.1887 | | 9,375.7571 | 9,375.7571 | 0.0357 | 1.3924 | 9,791.5842 |
| Worker | 2.1411 | 1.2508 | 20.2145 | 0.0726 | 11.8210 | 0.0298 | 11.8509 | 3.1355 | 0.0275 | 3.1629 | | 8,061.1406 | 8,061.1406 | 0.1290 | 0.1872 | 8,120.1409 |
| **Total** | **2.6277** | **24.5709** | **26.8223** | **0.1613** | **15.4619** | **0.1764** | **15.6384** | **4.1839** | **0.1677** | **4.3516** | | **17,436.8977** | **17,436.8977** | **0.1648** | **1.5796** | **17,911.7251** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2036

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.2168 | 7.1613 | 16.1178 | 0.0310 | | 0.0904 | 0.0904 | | 0.0904 | 0.0904 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1079 | | 2,900.2448 |
| **Total** | **1.2168** | **7.1613** | **16.1178** | **0.0310** | | **0.0904** | **0.0904** | | **0.0904** | **0.0904** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1079** | | **2,900.2448** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.4866 | 23.3201 | 6.6078 | 0.0888 | 3.6409 | 0.1466 | 3.7875 | 1.0484 | 0.1402 | 1.1887 | | 9,375.7571 | 9,375.7571 | 0.0357 | 1.3924 | 9,791.5842 |
| Worker | 2.1411 | 1.2508 | 20.2145 | 0.0726 | 11.8210 | 0.0298 | 11.8509 | 3.1355 | 0.0275 | 3.1629 | | 8,061.1406 | 8,061.1406 | 0.1290 | 0.1872 | 8,120.1409 |
| **Total** | **2.6277** | **24.5709** | **26.8223** | **0.1613** | **15.4619** | **0.1764** | **15.6384** | **4.1839** | **0.1677** | **4.3516** | | **17,436.8977** | **17,436.8977** | **0.1648** | **1.5796** | **17,911.7251** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2024

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1808 | 1.2188 | 1.8101 | 2.9700e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | | 281.4481 | 281.4481 | 0.0159 | | 281.8443 |
| **Total** | **8.7619** | **1.2188** | **1.8101** | **2.9700e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | | **281.4481** | **281.4481** | **0.0159** | | **281.8443** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.8610 | 0.5863 | 6.5656 | 0.0188 | 2.3659 | 0.0116 | 2.3774 | 0.6275 | 0.0107 | 0.6382 | | 1,938.8315 | 1,938.8315 | 0.0617 | 0.0588 | 1,957.8892 |
| **Total** | **0.8610** | **0.5863** | **6.5656** | **0.0188** | **2.3659** | **0.0116** | **2.3774** | **0.6275** | **0.0107** | **0.6382** | | **1,938.8315** | **1,938.8315** | **0.0617** | **0.0588** | **1,957.8892** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2024

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1808 | 1.2188 | 1.8101 | 2.9700e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | 0.0000 | 281.4481 | 281.4481 | 0.0159 | | 281.8443 |
| **Total** | **8.7619** | **1.2188** | **1.8101** | **2.9700e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | **0.0000** | **281.4481** | **281.4481** | **0.0159** | | **281.8443** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.8610 | 0.5863 | 6.5656 | 0.0188 | 2.3659 | 0.0116 | 2.3774 | 0.6275 | 0.0107 | 0.6382 | | 1,938.8315 | 1,938.8315 | 0.0617 | 0.0588 | 1,957.8892 |
| **Total** | **0.8610** | **0.5863** | **6.5656** | **0.0188** | **2.3659** | **0.0116** | **2.3774** | **0.6275** | **0.0107** | **0.6382** | | **1,938.8315** | **1,938.8315** | **0.0617** | **0.0588** | **1,957.8892** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **8.7520** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.7989 | 0.5207 | 6.1044 | 0.0182 | 2.3659 | 0.0110 | 2.3769 | 0.6275 | 0.0101 | 0.6377 | | 1,891.9926 | 1,891.9926 | 0.0556 | 0.0546 | 1,909.6549 |
| **Total** | **0.7989** | **0.5207** | **6.1044** | **0.0182** | **2.3659** | **0.0110** | **2.3769** | **0.6275** | **0.0101** | **0.6377** | | **1,891.9926** | **1,891.9926** | **0.0556** | **0.0546** | **1,909.6549** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2025

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **8.7520** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.7989 | 0.5207 | 6.1044 | 0.0182 | 2.3659 | 0.0110 | 2.3769 | 0.6275 | 0.0101 | 0.6377 | | 1,891.9926 | 1,891.9926 | 0.0556 | 0.0546 | 1,909.6549 |
| **Total** | **0.7989** | **0.5207** | **6.1044** | **0.0182** | **2.3659** | **0.0110** | **2.3769** | **0.6275** | **0.0101** | **0.6377** | | **1,891.9926** | **1,891.9926** | **0.0556** | **0.0546** | **1,909.6549** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2026

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **8.7520** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.7458 | 0.4674 | 5.7442 | 0.0176 | 2.3659 | 0.0105 | 2.3764 | 0.6275 | 9.6900e-003 | 0.6372 | | 1,849.1785 | 1,849.1785 | 0.0505 | 0.0512 | 1,865.6966 |
| **Total** | **0.7458** | **0.4674** | **5.7442** | **0.0176** | **2.3659** | **0.0105** | **2.3764** | **0.6275** | **9.6900e-003** | **0.6372** | | **1,849.1785** | **1,849.1785** | **0.0505** | **0.0512** | **1,865.6966** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2026

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **8.7520** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.7458 | 0.4674 | 5.7442 | 0.0176 | 2.3659 | 0.0105 | 2.3764 | 0.6275 | 9.6900e-003 | 0.6372 | | 1,849.1785 | 1,849.1785 | 0.0505 | 0.0512 | 1,865.6966 |
| **Total** | **0.7458** | **0.4674** | **5.7442** | **0.0176** | **2.3659** | **0.0105** | **2.3764** | **0.6275** | **9.6900e-003** | **0.6372** | | **1,849.1785** | **1,849.1785** | **0.0505** | **0.0512** | **1,865.6966** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2027

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **8.7520** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.6979 | 0.4229 | 5.4143 | 0.0171 | 2.3659 | 9.9400e-003 | 2.3758 | 0.6275 | 9.1400e-003 | 0.6367 | | 1,808.5159 | 1,808.5159 | 0.0461 | 0.0483 | 1,824.0693 |
| **Total** | **0.6979** | **0.4229** | **5.4143** | **0.0171** | **2.3659** | **9.9400e-003** | **2.3758** | **0.6275** | **9.1400e-003** | **0.6367** | | **1,808.5159** | **1,808.5159** | **0.0461** | **0.0483** | **1,824.0693** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2027

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **8.7520** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.6979 | 0.4229 | 5.4143 | 0.0171 | 2.3659 | 9.9400e-003 | 2.3758 | 0.6275 | 9.1400e-003 | 0.6367 | | 1,808.5159 | 1,808.5159 | 0.0461 | 0.0483 | 1,824.0693 |
| **Total** | **0.6979** | **0.4229** | **5.4143** | **0.0171** | **2.3659** | **9.9400e-003** | **2.3758** | **0.6275** | **9.1400e-003** | **0.6367** | | **1,808.5159** | **1,808.5159** | **0.0461** | **0.0483** | **1,824.0693** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2028

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **8.7520** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.6540 | 0.3861 | 5.1409 | 0.0166 | 2.3659 | 9.3100e-003 | 2.3752 | 0.6275 | 8.5700e-003 | 0.6361 | | 1,772.4046 | 1,772.4046 | 0.0423 | 0.0460 | 1,787.1556 |
| **Total** | **0.6540** | **0.3861** | **5.1409** | **0.0166** | **2.3659** | **9.3100e-003** | **2.3752** | **0.6275** | **8.5700e-003** | **0.6361** | | **1,772.4046** | **1,772.4046** | **0.0423** | **0.0460** | **1,787.1556** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2028

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **8.7520** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.6540 | 0.3861 | 5.1409 | 0.0166 | 2.3659 | 9.3100e-003 | 2.3752 | 0.6275 | 8.5700e-003 | 0.6361 | | 1,772.4046 | 1,772.4046 | 0.0423 | 0.0460 | 1,787.1556 |
| **Total** | **0.6540** | **0.3861** | **5.1409** | **0.0166** | **2.3659** | **9.3100e-003** | **2.3752** | **0.6275** | **8.5700e-003** | **0.6361** | | **1,772.4046** | **1,772.4046** | **0.0423** | **0.0460** | **1,787.1556** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2029

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **8.7520** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.6128 | 0.3550 | 4.9043 | 0.0162 | 2.3659 | 8.7200e-003 | 2.3746 | 0.6275 | 8.0200e-003 | 0.6356 | | 1,740.1396 | 1,740.1396 | 0.0389 | 0.0440 | 1,754.2147 |
| **Total** | **0.6128** | **0.3550** | **4.9043** | **0.0162** | **2.3659** | **8.7200e-003** | **2.3746** | **0.6275** | **8.0200e-003** | **0.6356** | | **1,740.1396** | **1,740.1396** | **0.0389** | **0.0440** | **1,754.2147** |

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2029

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **8.7520** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.6128 | 0.3550 | 4.9043 | 0.0162 | 2.3659 | 8.7200e-003 | 2.3746 | 0.6275 | 8.0200e-003 | 0.6356 | | 1,740.1396 | 1,740.1396 | 0.0389 | 0.0440 | 1,754.2147 |
| **Total** | **0.6128** | **0.3550** | **4.9043** | **0.0162** | **2.3659** | **8.7200e-003** | **2.3746** | **0.6275** | **8.0200e-003** | **0.6356** | | **1,740.1396** | **1,740.1396** | **0.0389** | **0.0440** | **1,754.2147** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2030

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **8.7119** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.5746 | 0.3288 | 4.7054 | 0.0158 | 2.3659 | 8.1600e-003 | 2.3740 | 0.6275 | 7.5100e-003 | 0.6350 | | 1,711.8170 | 1,711.8170 | 0.0360 | 0.0423 | 1,725.3246 |
| **Total** | **0.5746** | **0.3288** | **4.7054** | **0.0158** | **2.3659** | **8.1600e-003** | **2.3740** | **0.6275** | **7.5100e-003** | **0.6350** | | **1,711.8170** | **1,711.8170** | **0.0360** | **0.0423** | **1,725.3246** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2030

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | 0.0000 | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **8.7119** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | **0.0000** | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.5746 | 0.3288 | 4.7054 | 0.0158 | 2.3659 | 8.1600e-003 | 2.3740 | 0.6275 | 7.5100e-003 | 0.6350 | | 1,711.8170 | 1,711.8170 | 0.0360 | 0.0423 | 1,725.3246 |
| **Total** | **0.5746** | **0.3288** | **4.7054** | **0.0158** | **2.3659** | **8.1600e-003** | **2.3740** | **0.6275** | **7.5100e-003** | **0.6350** | | **1,711.8170** | **1,711.8170** | **0.0360** | **0.0423** | **1,725.3246** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2031

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **8.7119** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.5374 | 0.3058 | 4.5301 | 0.0155 | 2.3659 | 7.6400e-003 | 2.3735 | 0.6275 | 7.0300e-003 | 0.6346 | | 1,686.6202 | 1,686.6202 | 0.0334 | 0.0409 | 1,699.6393 |
| **Total** | **0.5374** | **0.3058** | **4.5301** | **0.0155** | **2.3659** | **7.6400e-003** | **2.3735** | **0.6275** | **7.0300e-003** | **0.6346** | | **1,686.6202** | **1,686.6202** | **0.0334** | **0.0409** | **1,699.6393** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2031

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | 0.0000 | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **8.7119** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | **0.0000** | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.5374 | 0.3058 | 4.5301 | 0.0155 | 2.3659 | 7.6400e-003 | 2.3735 | 0.6275 | 7.0300e-003 | 0.6346 | | 1,686.6202 | 1,686.6202 | 0.0334 | 0.0409 | 1,699.6393 |
| **Total** | **0.5374** | **0.3058** | **4.5301** | **0.0155** | **2.3659** | **7.6400e-003** | **2.3735** | **0.6275** | **7.0300e-003** | **0.6346** | | **1,686.6202** | **1,686.6202** | **0.0334** | **0.0409** | **1,699.6393** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2032

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **8.7119** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.5053 | 0.2873 | 4.3821 | 0.0152 | 2.3659 | 7.1700e-003 | 2.3730 | 0.6275 | 6.6000e-003 | 0.6341 | | 1,664.5449 | 1,664.5449 | 0.0311 | 0.0397 | 1,677.1666 |
| **Total** | **0.5053** | **0.2873** | **4.3821** | **0.0152** | **2.3659** | **7.1700e-003** | **2.3730** | **0.6275** | **6.6000e-003** | **0.6341** | | **1,664.5449** | **1,664.5449** | **0.0311** | **0.0397** | **1,677.1666** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2032

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | 0.0000 | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **8.7119** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | **0.0000** | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.5053 | 0.2873 | 4.3821 | 0.0152 | 2.3659 | 7.1700e-003 | 2.3730 | 0.6275 | 6.6000e-003 | 0.6341 | | 1,664.5449 | 1,664.5449 | 0.0311 | 0.0397 | 1,677.1666 |
| **Total** | **0.5053** | **0.2873** | **4.3821** | **0.0152** | **2.3659** | **7.1700e-003** | **2.3730** | **0.6275** | **6.6000e-003** | **0.6341** | | **1,664.5449** | **1,664.5449** | **0.0311** | **0.0397** | **1,677.1666** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2033

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **8.7119** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.4763 | 0.2721 | 4.2542 | 0.0150 | 2.3659 | 6.7300e-003 | 2.3726 | 0.6275 | 6.1900e-003 | 0.6337 | | 1,645.0929 | 1,645.0929 | 0.0291 | 0.0388 | 1,657.3855 |
| **Total** | **0.4763** | **0.2721** | **4.2542** | **0.0150** | **2.3659** | **6.7300e-003** | **2.3726** | **0.6275** | **6.1900e-003** | **0.6337** | | **1,645.0929** | **1,645.0929** | **0.0291** | **0.0388** | **1,657.3855** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2033

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | 0.0000 | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **8.7119** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | **0.0000** | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.4763 | 0.2721 | 4.2542 | 0.0150 | 2.3659 | 6.7300e-003 | 2.3726 | 0.6275 | 6.1900e-003 | 0.6337 | | 1,645.0929 | 1,645.0929 | 0.0291 | 0.0388 | 1,657.3855 |
| **Total** | **0.4763** | **0.2721** | **4.2542** | **0.0150** | **2.3659** | **6.7300e-003** | **2.3726** | **0.6275** | **6.1900e-003** | **0.6337** | | **1,645.0929** | **1,645.0929** | **0.0291** | **0.0388** | **1,657.3855** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2034

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **8.7119** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.4510 | 0.2598 | 4.1416 | 0.0147 | 2.3659 | 6.3300e-003 | 2.3722 | 0.6275 | 5.8300e-003 | 0.6334 | | 1,628.0392 | 1,628.0392 | 0.0274 | 0.0381 | 1,640.0621 |
| **Total** | **0.4510** | **0.2598** | **4.1416** | **0.0147** | **2.3659** | **6.3300e-003** | **2.3722** | **0.6275** | **5.8300e-003** | **0.6334** | | **1,628.0392** | **1,628.0392** | **0.0274** | **0.0381** | **1,640.0621** |

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2034

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | 0.0000 | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **8.7119** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | **0.0000** | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.4510 | 0.2598 | 4.1416 | 0.0147 | 2.3659 | 6.3300e-003 | 2.3722 | 0.6275 | 5.8300e-003 | 0.6334 | | 1,628.0392 | 1,628.0392 | 0.0274 | 0.0381 | 1,640.0621 |
| **Total** | **0.4510** | **0.2598** | **4.1416** | **0.0147** | **2.3659** | **6.3300e-003** | **2.3722** | **0.6275** | **5.8300e-003** | **0.6334** | | **1,628.0392** | **1,628.0392** | **0.0274** | **0.0381** | **1,640.0621** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2035

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1179 | 0.7577 | 1.7943 | 2.9700e-003 | | 9.9000e-003 | 9.9000e-003 | | 9.9000e-003 | 9.9000e-003 | | 281.4481 | 281.4481 | 0.0104 | | 281.7081 |
| **Total** | **8.6990** | **0.7577** | **1.7943** | **2.9700e-003** | | **9.9000e-003** | **9.9000e-003** | | **9.9000e-003** | **9.9000e-003** | | **281.4481** | **281.4481** | **0.0104** | | **281.7081** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.4285 | 0.2503 | 4.0457 | 0.0145 | 2.3659 | 5.9700e-003 | 2.3718 | 0.6275 | 5.4900e-003 | 0.6330 | | 1,613.3485 | 1,613.3485 | 0.0258 | 0.0375 | 1,625.1568 |
| **Total** | **0.4285** | **0.2503** | **4.0457** | **0.0145** | **2.3659** | **5.9700e-003** | **2.3718** | **0.6275** | **5.4900e-003** | **0.6330** | | **1,613.3485** | **1,613.3485** | **0.0258** | **0.0375** | **1,625.1568** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2035

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1179 | 0.7577 | 1.7943 | 2.9700e-003 | | 9.9000e-003 | 9.9000e-003 | | 9.9000e-003 | 9.9000e-003 | 0.0000 | 281.4481 | 281.4481 | 0.0104 | | 281.7081 |
| **Total** | **8.6990** | **0.7577** | **1.7943** | **2.9700e-003** | | **9.9000e-003** | **9.9000e-003** | | **9.9000e-003** | **9.9000e-003** | **0.0000** | **281.4481** | **281.4481** | **0.0104** | | **281.7081** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.4285 | 0.2503 | 4.0457 | 0.0145 | 2.3659 | 5.9700e-003 | 2.3718 | 0.6275 | 5.4900e-003 | 0.6330 | | 1,613.3485 | 1,613.3485 | 0.0258 | 0.0375 | 1,625.1568 |
| **Total** | **0.4285** | **0.2503** | **4.0457** | **0.0145** | **2.3659** | **5.9700e-003** | **2.3718** | **0.6275** | **5.4900e-003** | **0.6330** | | **1,613.3485** | **1,613.3485** | **0.0258** | **0.0375** | **1,625.1568** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2036

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1179 | 0.7577 | 1.7943 | 2.9700e-003 | | 9.9000e-003 | 9.9000e-003 | | 9.9000e-003 | 9.9000e-003 | | 281.4481 | 281.4481 | 0.0104 | | 281.7081 |
| **Total** | **8.6990** | **0.7577** | **1.7943** | **2.9700e-003** | | **9.9000e-003** | **9.9000e-003** | | **9.9000e-003** | **9.9000e-003** | | **281.4481** | **281.4481** | **0.0104** | | **281.7081** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.4285 | 0.2503 | 4.0457 | 0.0145 | 2.3659 | 5.9700e-003 | 2.3718 | 0.6275 | 5.4900e-003 | 0.6330 | | 1,613.3485 | 1,613.3485 | 0.0258 | 0.0375 | 1,625.1568 |
| **Total** | **0.4285** | **0.2503** | **4.0457** | **0.0145** | **2.3659** | **5.9700e-003** | **2.3718** | **0.6275** | **5.4900e-003** | **0.6330** | | **1,613.3485** | **1,613.3485** | **0.0258** | **0.0375** | **1,625.1568** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2036

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 8.5812 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1179 | 0.7577 | 1.7943 | 2.9700e-003 | | 9.9000e-003 | 9.9000e-003 | | 9.9000e-003 | 9.9000e-003 | 0.0000 | 281.4481 | 281.4481 | 0.0104 | | 281.7081 |
| **Total** | **8.6990** | **0.7577** | **1.7943** | **2.9700e-003** | | **9.9000e-003** | **9.9000e-003** | | **9.9000e-003** | **9.9000e-003** | **0.0000** | **281.4481** | **281.4481** | **0.0104** | | **281.7081** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.4285 | 0.2503 | 4.0457 | 0.0145 | 2.3659 | 5.9700e-003 | 2.3718 | 0.6275 | 5.4900e-003 | 0.6330 | | 1,613.3485 | 1,613.3485 | 0.0258 | 0.0375 | 1,625.1568 |
| **Total** | **0.4285** | **0.2503** | **4.0457** | **0.0145** | **2.3659** | **5.9700e-003** | **2.3718** | **0.6275** | **5.4900e-003** | **0.6330** | | **1,613.3485** | **1,613.3485** | **0.0258** | **0.0375** | **1,625.1568** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

# 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 17.1085 | 36.7453 | 209.3638 | 0.5532 | 74.5539 | 0.4052 | 74.9591 | 19.8851 | 0.3813 | 20.2663 | | 60,579.8355 | 60,579.8355 | 2.5075 | 3.0109 | 61,539.7633 |
| Unmitigated | 17.3427 | 37.3644 | 212.8523 | 0.5643 | 76.0754 | 0.4131 | 76.4885 | 20.2909 | 0.3887 | 20.6796 | | 61,791.6581 | 61,791.6581 | 2.5469 | 3.0643 | 62,768.4887 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 0.00 | 0.00 | 0.00 | | |
| Elementary School | 459.00 | 459.00 | 459.00 | 2,167,895 | 2,124,537 |
| Other Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Single Family Housing | 6,976.16 | 6,976.16 | 6976.16 | 33,833,574 | 33,156,903 |
| Total | 7,435.16 | 7,435.16 | 7,435.16 | 36,001,469 | 35,281,439 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 14.12 | 10.85 | 10.85 | 33.00 | 48.00 | 19.00 | 100 | 0 | 0 |
| Elementary School | 14.12 | 10.85 | 10.85 | 65.00 | 30.00 | 5.00 | 100 | 0 | 0 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Other Asphalt Surfaces | 14.12 | 10.85 | 10.85 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Single Family Housing | 16.05 | 10.85 | 11.14 | 45.60 | 19.00 | 35.40 | 100 | 0 | 0 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.552787 | 0.055429 | 0.175422 | 0.126588 | 0.020626 | 0.005781 | 0.013059 | 0.024880 | 0.000595 | 0.000297 | 0.020966 | 0.001153 | 0.002414 |
| Elementary School | 0.552787 | 0.055429 | 0.175422 | 0.126588 | 0.020626 | 0.005781 | 0.013059 | 0.024880 | 0.000595 | 0.000297 | 0.020966 | 0.001153 | 0.002414 |
| Other Asphalt Surfaces | 0.552787 | 0.055429 | 0.175422 | 0.126588 | 0.020626 | 0.005781 | 0.013059 | 0.024880 | 0.000595 | 0.000297 | 0.020966 | 0.001153 | 0.002414 |
| Single Family Housing | 0.552787 | 0.055429 | 0.175422 | 0.126588 | 0.020626 | 0.005781 | 0.013059 | 0.024880 | 0.000595 | 0.000297 | 0.020966 | 0.001153 | 0.002414 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.5322 | 4.5566 | 1.9979 | 0.0290 | | 0.3677 | 0.3677 | | 0.3677 | 0.3677 | | 5,806.0259 | 5,806.0259 | 0.1113 | 0.1064 | 5,840.5282 |
| NaturalGas Unmitigated | 0.5322 | 4.5566 | 1.9979 | 0.0290 | | 0.3677 | 0.3677 | | 0.3677 | 0.3677 | | 5,806.0259 | 5,806.0259 | 0.1113 | 0.1064 | 5,840.5282 |

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Elementary School | 1450.23 | 0.0156 | 0.1422 | 0.1194 | 8.5000e-004 | | 0.0108 | 0.0108 | | 0.0108 | 0.0108 | | 170.6155 | 170.6155 | 3.2700e-003 | 3.1300e-003 | 171.6294 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 47901 | 0.5166 | 4.4144 | 1.8785 | 0.0282 | | 0.3569 | 0.3569 | | 0.3569 | 0.3569 | | 5,635.4103 | 5,635.4103 | 0.1080 | 0.1033 | 5,668.8988 |
| **Total** | | **0.5322** | **4.5566** | **1.9979** | **0.0290** | | **0.3677** | **0.3677** | | **0.3677** | **0.3677** | | **5,806.0259** | **5,806.0259** | **0.1113** | **0.1065** | **5,840.5282** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Elementary School | 1.45023 | 0.0156 | 0.1422 | 0.1194 | 8.5000e-004 | | 0.0108 | 0.0108 | | 0.0108 | 0.0108 | | 170.6155 | 170.6155 | 3.2700e-003 | 3.1300e-003 | 171.6294 |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 47.901 | 0.5166 | 4.4144 | 1.8785 | 0.0282 | | 0.3569 | 0.3569 | | 0.3569 | 0.3569 | | 5,635.4103 | 5,635.4103 | 0.1080 | 0.1033 | 5,668.8988 |
| **Total** | | **0.5322** | **4.5566** | **1.9979** | **0.0290** | | **0.3677** | **0.3677** | | **0.3677** | **0.3677** | | **5,806.0259** | **5,806.0259** | **0.1113** | **0.1065** | **5,840.5282** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Cleaning Supplies

Hat Ranch Project - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 37.2542 | 7.3004 | 49.0701 | 0.0451 | | 0.7975 | 0.7975 | | 0.7975 | 0.7975 | 0.0000 | 8,684.0825 | 8,684.0825 | 0.2199 | 0.1578 | 8,736.6033 |
| Unmitigated | 40.3298 | 7.4439 | 63.6981 | 0.0463 | | 0.8835 | 0.8835 | | 0.8835 | 0.8835 | 0.0000 | 8,717.1181 | 8,717.1181 | 0.2699 | 0.1578 | 8,770.8892 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 7.2881 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 30.4293 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.7890 | 6.7423 | 2.8691 | 0.0430 | | 0.5451 | 0.5451 | | 0.5451 | 0.5451 | 0.0000 | 8,607.1765 | 8,607.1765 | 0.1650 | 0.1578 | 8,658.3246 |
| Landscaping | 1.8234 | 0.7016 | 60.8290 | 3.2300e-003 | | 0.3384 | 0.3384 | | 0.3384 | 0.3384 | | 109.9416 | 109.9416 | 0.1049 | | 112.5646 |
| **Total** | **40.3298** | **7.4439** | **63.6981** | **0.0463** | | **0.8835** | **0.8835** | | **0.8835** | **0.8835** | **0.0000** | **8,717.1181** | **8,717.1181** | **0.2699** | **0.1578** | **8,770.8893** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 7.2881 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 28.2107 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.7890 | 6.7423 | 2.8691 | 0.0430 | | 0.5451 | 0.5451 | | 0.5451 | 0.5451 | 0.0000 | 8,607.1765 | 8,607.1765 | 0.1650 | 0.1578 | 8,658.3246 |
| Landscaping | 0.9664 | 0.5581 | 46.2011 | 2.0900e-003 | | 0.2524 | 0.2524 | | 0.2524 | 0.2524 | | 76.9060 | 76.9060 | 0.0549 | | 78.2787 |
| **Total** | **37.2542** | **7.3004** | **49.0701** | **0.0451** | | **0.7975** | **0.7975** | | **0.7975** | **0.7975** | **0.0000** | **8,684.0825** | **8,684.0825** | **0.2199** | **0.1578** | **8,736.6033** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# Hat Ranch Project

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**San Joaquin Valley Unified APCD Air District, Mitigation Report**

## Construction Mitigation Summary

| Phase | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | | | | | | | | | | | | |
| Architectural Coating | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Building Construction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Grading | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Site Preparation | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## OFFROAD Equipment Mitigation

# Hat Ranch Project

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

| Equipment Type | Fuel Type | Tier | Number Mitigated | Total Number of Equipment | DPF | Oxidation Catalyst |
|---|---|---|---|---|---|---|
| Air Compressors | Diesel | No Change | 0 | 1 | No Change | 0.00 |
| Cranes | Diesel | No Change | 0 | 1 | No Change | 0.00 |
| Excavators | Diesel | No Change | 0 | 2 | No Change | 0.00 |
| Forklifts | Diesel | No Change | 0 | 3 | No Change | 0.00 |
| Generator Sets | Diesel | No Change | 0 | 1 | No Change | 0.00 |
| Graders | Diesel | No Change | 0 | 1 | No Change | 0.00 |
| Pavers | Diesel | No Change | 0 | 2 | No Change | 0.00 |
| Paving Equipment | Diesel | No Change | 0 | 2 | No Change | 0.00 |
| Rollers | Diesel | No Change | 0 | 2 | No Change | 0.00 |
| Rubber Tired Dozers | Diesel | No Change | 0 | 4 | No Change | 0.00 |
| Scrapers | Diesel | No Change | 0 | 2 | No Change | 0.00 |
| Tractors/Loaders/Backhoes | Diesel | No Change | 0 | 9 | No Change | 0.00 |
| Welders | Diesel | No Change | 0 | 1 | No Change | 0.00 |

# Hat Ranch Project

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

| Equipment Type | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unmitigated tons/yr | | | | | | Unmitigated mt/yr | | | | | |
| Air Compressors | 2.26810E-001 | 1.50010E+000 | 2.79337E+000 | 4.61000E-003 | 5.02000E-002 | 5.02000E-002 | 0.00000E+000 | 3.95754E+002 | 3.95754E+002 | 1.82300E-002 | 0.00000E+000 | 3.96210E+002 |
| Cranes | 3.82960E-001 | 2.49005E+000 | 2.06319E+000 | 8.84000E-003 | 9.96800E-002 | 9.32900E-002 | 0.00000E+000 | 7.65739E+002 | 7.65739E+002 | 1.12900E-001 | 0.00000E+000 | 7.68562E+002 |
| Excavators | 5.92500E-002 | 4.92630E-001 | 1.00976E+000 | 1.60000E-003 | 2.40600E-002 | 2.21300E-002 | 0.00000E+000 | 1.40639E+002 | 1.40639E+002 | 4.54900E-002 | 0.00000E+000 | 1.41776E+002 |
| Forklifts | 4.08000E-001 | 2.93150E+000 | 5.42435E+000 | 8.04000E-003 | 1.05560E-001 | 9.84100E-002 | 0.00000E+000 | 6.96759E+002 | 6.96759E+002 | 1.06510E-001 | 0.00000E+000 | 6.99422E+002 |
| Generator Sets | 3.45680E-001 | 3.15312E+000 | 5.64977E+000 | 1.02000E-002 | 9.30000E-002 | 9.30000E-002 | 0.00000E+000 | 8.76072E+002 | 8.76072E+002 | 2.76300E-002 | 0.00000E+000 | 8.76762E+002 |
| Graders | 6.03000E-002 | 7.37850E-001 | 2.63160E-001 | 1.03000E-003 | 2.38200E-002 | 2.19100E-002 | 0.00000E+000 | 9.01236E+001 | 9.01236E+001 | 2.91500E-002 | 0.00000E+000 | 9.08522E+001 |
| Pavers | 4.04400E-002 | 3.83910E-001 | 6.36410E-001 | 1.03000E-003 | 1.79300E-002 | 1.65000E-002 | 0.00000E+000 | 9.08418E+001 | 9.08418E+001 | 2.93800E-002 | 0.00000E+000 | 9.15763E+001 |
| Paving Equipment | 3.62800E-002 | 3.29680E-001 | 5.65300E-001 | 9.00000E-004 | 1.59200E-002 | 1.46500E-002 | 0.00000E+000 | 7.87277E+001 | 7.87277E+001 | 2.54600E-002 | 0.00000E+000 | 7.93643E+001 |
| Rollers | 3.21000E-002 | 3.35780E-001 | 4.07020E-001 | 5.80000E-004 | 1.77900E-002 | 1.63600E-002 | 0.00000E+000 | 5.07224E+001 | 5.07224E+001 | 1.64000E-002 | 0.00000E+000 | 5.11325E+001 |
| Rubber Tired Dozers | 2.60990E-001 | 2.73340E+000 | 1.13932E+000 | 2.86000E-003 | 1.27520E-001 | 1.17320E-001 | 0.00000E+000 | 2.51338E+002 | 2.51338E+002 | 8.12900E-002 | 0.00000E+000 | 2.53370E+002 |
| Scrapers | 2.45680E-001 | 2.60416E+000 | 1.91561E+000 | 4.71000E-003 | 1.02020E-001 | 9.38600E-002 | 0.00000E+000 | 4.13449E+002 | 4.13449E+002 | 1.33720E-001 | 0.00000E+000 | 4.16791E+002 |
| Tractors/Loaders/ Backhoes | 7.12260E-001 | 5.58197E+000 | 1.05660E+001 | 1.59600E-002 | 1.82500E-001 | 1.71090E-001 | 0.00000E+000 | 1.38539E+003 | 1.38539E+003 | 2.37080E-001 | 0.00000E+000 | 1.39132E+003 |
| Welders | 2.88700E-001 | 1.94219E+000 | 2.51351E+000 | 3.96000E-003 | 4.02700E-002 | 4.02700E-002 | 0.00000E+000 | 2.91742E+002 | 2.91742E+002 | 2.34000E-002 | 0.00000E+000 | 2.92327E+002 |

# Hat Ranch Project

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

| Equipment Type | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mitigated tons/yr | | | | | | Mitigated mt/yr | | | | | |
| Air Compressors | 2.26810E-001 | 1.50009E+000 | 2.79337E+000 | 4.61000E-003 | 5.02000E-002 | 5.02000E-002 | 0.00000E+000 | 3.95754E+002 | 3.95754E+002 | 1.82300E-002 | 0.00000E+000 | 3.96210E+002 |
| Cranes | 3.82960E-001 | 2.49005E+000 | 2.06319E+000 | 8.84000E-003 | 9.96800E-002 | 9.32900E-002 | 0.00000E+000 | 7.65738E+002 | 7.65738E+002 | 1.12900E-001 | 0.00000E+000 | 7.68561E+002 |
| Excavators | 5.92500E-002 | 4.92630E-001 | 1.00976E+000 | 1.60000E-003 | 2.40600E-002 | 2.21300E-002 | 0.00000E+000 | 1.40639E+002 | 1.40639E+002 | 4.54900E-002 | 0.00000E+000 | 1.41776E+002 |
| Forklifts | 4.08000E-001 | 2.93150E+000 | 5.42434E+000 | 8.04000E-003 | 1.05560E-001 | 9.84100E-002 | 0.00000E+000 | 6.96758E+002 | 6.96758E+002 | 1.06510E-001 | 0.00000E+000 | 6.99421E+002 |
| Generator Sets | 3.45680E-001 | 3.15312E+000 | 5.64976E+000 | 1.02000E-002 | 9.30000E-002 | 9.30000E-002 | 0.00000E+000 | 8.76071E+002 | 8.76071E+002 | 2.76300E-002 | 0.00000E+000 | 8.76761E+002 |
| Graders | 6.03000E-002 | 7.37840E-001 | 2.63160E-001 | 1.03000E-003 | 2.38200E-002 | 2.19100E-002 | 0.00000E+000 | 9.01234E+001 | 9.01234E+001 | 2.91500E-002 | 0.00000E+000 | 9.08521E+001 |
| Pavers | 4.04400E-002 | 3.83910E-001 | 6.36410E-001 | 1.03000E-003 | 1.79300E-002 | 1.65000E-002 | 0.00000E+000 | 9.08417E+001 | 9.08417E+001 | 2.93800E-002 | 0.00000E+000 | 9.15762E+001 |
| Paving Equipment | 3.62800E-002 | 3.29680E-001 | 5.65300E-001 | 9.00000E-004 | 1.59200E-002 | 1.46500E-002 | 0.00000E+000 | 7.87276E+001 | 7.87276E+001 | 2.54600E-002 | 0.00000E+000 | 7.93642E+001 |
| Rollers | 3.21000E-002 | 3.35780E-001 | 4.07020E-001 | 5.80000E-004 | 1.77900E-002 | 1.63600E-002 | 0.00000E+000 | 5.07223E+001 | 5.07223E+001 | 1.64000E-002 | 0.00000E+000 | 5.11325E+001 |
| Rubber Tired Dozers | 2.60990E-001 | 2.73339E+000 | 1.13932E+000 | 2.86000E-003 | 1.27520E-001 | 1.17320E-001 | 0.00000E+000 | 2.51337E+002 | 2.51337E+002 | 8.12900E-002 | 0.00000E+000 | 2.53370E+002 |
| Scrapers | 2.45680E-001 | 2.60416E+000 | 1.91561E+000 | 4.71000E-003 | 1.02020E-001 | 9.38600E-002 | 0.00000E+000 | 4.13448E+002 | 4.13448E+002 | 1.33720E-001 | 0.00000E+000 | 4.16791E+002 |
| Tractors/Loaders/Backhoes | 7.12260E-001 | 5.58196E+000 | 1.05660E+001 | 1.59600E-002 | 1.82500E-001 | 1.71090E-001 | 0.00000E+000 | 1.38539E+003 | 1.38539E+003 | 2.37080E-001 | 0.00000E+000 | 1.39131E+003 |
| Welders | 2.88700E-001 | 1.94219E+000 | 2.51351E+000 | 3.96000E-003 | 4.02700E-002 | 4.02700E-002 | 0.00000E+000 | 2.91742E+002 | 2.91742E+002 | 2.34000E-002 | 0.00000E+000 | 2.92327E+002 |

# Hat Ranch Project

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

| Equipment Type | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | | | | | | | | | | | | |
| Air Compressors | 0.00000E+000 | 6.66622E-006 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 1.18761E-006 | 1.18761E-006 | 0.00000E+000 | 0.00000E+000 | 1.18624E-006 |
| Cranes | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 1.18839E-006 | 1.18839E-006 | 0.00000E+000 | 0.00000E+000 | 1.19704E-006 |
| Excavators | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 1.13767E-006 | 1.13767E-006 | 0.00000E+000 | 0.00000E+000 | 1.19907E-006 |
| Forklifts | 0.00000E+000 | 0.00000E+000 | 1.84354E-006 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 1.19123E-006 | 1.19123E-006 | 0.00000E+000 | 0.00000E+000 | 1.18669E-006 |
| Generator Sets | 0.00000E+000 | 0.00000E+000 | 1.76998E-006 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 1.18712E-006 | 1.18712E-006 | 0.00000E+000 | 0.00000E+000 | 1.18618E-006 |
| Graders | 0.00000E+000 | 1.35529E-005 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 1.22055E-006 | 1.22055E-006 | 0.00000E+000 | 0.00000E+000 | 1.21076E-006 |
| Pavers | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 1.21090E-006 | 1.21090E-006 | 0.00000E+000 | 0.00000E+000 | 1.20118E-006 |
| Paving Equipment | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 1.14318E-006 | 1.14318E-006 | 0.00000E+000 | 0.00000E+000 | 1.26001E-006 |
| Rollers | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 1.18291E-006 | 1.18291E-006 | 0.00000E+000 | 0.00000E+000 | 1.17342E-006 |
| Rubber Tired Dozers | 0.00000E+000 | 3.65845E-006 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 1.19361E-006 | 1.19361E-006 | 0.00000E+000 | 0.00000E+000 | 1.18404E-006 |
| Scrapers | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 1.20934E-006 | 1.20934E-006 | 0.00000E+000 | 0.00000E+000 | 1.19964E-006 |
| Tractors/Loaders/Backhoes | 0.00000E+000 | 1.79148E-006 | 9.46428E-007 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 1.19100E-006 | 1.19100E-006 | 0.00000E+000 | 0.00000E+000 | 1.19311E-006 |
| Welders | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 1.16541E-006 | 1.16541E-006 | 0.00000E+000 | 0.00000E+000 | 1.19729E-006 |

## Fugitive Dust Mitigation

| Yes/No | Mitigation Measure | Mitigation Input | | Mitigation Input | | Mitigation Input | |
|---|---|---|---|---|---|---|---|
| No | Soil Stabilizer for unpaved Roads | PM10 Reduction | | PM2.5 Reduction | | | |

# Hat Ranch Project

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| No | Replace Ground Cover of Area Disturbed | PM10 Reduction | | PM2.5 Reduction | | | |
| No | Water Exposed Area | PM10 Reduction | | PM2.5 Reduction | | Frequency (per day) | |
| No | Unpaved Road Mitigation | Moisture Content % | | Vehicle Speed (mph) | 0.00 | | |
| No | Clean Paved Road | % PM Reduction | 0.00 | | | | |

| | | Unmitigated | | Mitigated | | Percent Reduction | |
|---|---|---|---|---|---|---|---|
| Phase | Source | PM10 | PM2.5 | PM10 | PM2.5 | PM10 | PM2.5 |
| Architectural Coating | Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Architectural Coating | Roads | 3.57 | 0.95 | 3.57 | 0.95 | 0.00 | 0.00 |
| Building Construction | Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Building Construction | Roads | 23.35 | 6.33 | 23.35 | 6.33 | 0.00 | 0.00 |
| Grading | Fugitive Dust | 1.92 | 0.62 | 1.92 | 0.62 | 0.00 | 0.00 |
| Grading | Roads | 0.02 | 0.01 | 0.02 | 0.01 | 0.00 | 0.00 |
| Paving | Fugitive Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving | Roads | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 |
| Site Preparation | Fugitive Dust | 1.18 | 0.61 | 1.18 | 0.61 | 0.00 | 0.00 |
| Site Preparation | Roads | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 |

## Operational Percent Reduction Summary

# Hat Ranch Project

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

| Category | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | | | | | | | | | | | | |
| Architectural Coating | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | 7.29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hearth | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | 47.00 | 20.45 | 24.05 | 34.48 | 25.42 | 25.42 | 0.00 | 30.05 | 30.05 | 47.72 | 0.00 | 30.46 |
| Mobile | 1.27 | 1.66 | 1.69 | 1.96 | 1.91 | 1.91 | 0.00 | 1.96 | 1.96 | 1.59 | 1.75 | 1.96 |
| Natural Gas | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Water Indoor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.23 | 4.99 | 0.03 | 0.15 | 2.20 |
| Water Outdoor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## Operational Mobile Mitigation

Project Setting: Suburban Center

| Mitigation | Category | Measure | % Reduction | Input Value 1 | Input Value 2 | Input Value 3 |
|---|---|---|---|---|---|---|
| No | Land Use | Increase Density | 0.00 | | | |
| No | Land Use | Increase Diversity | 0.20 | 0.48 | | |
| No | Land Use | Improve Walkability Design | 0.00 | | | |
| No | Land Use | Improve Destination Accessibility | 0.00 | | | |
| No | Land Use | Increase Transit Accessibility | 0.25 | | | |
| No | Land Use | Integrate Below Market Rate Housing | 0.00 | | | |
| | Land Use | Land Use SubTotal | 0.00 | | | |

## Hat Ranch Project

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | | | | |
|---|---|---|---|---|---|---|
| Yes | Neighborhood Enhancements | Improve Pedestrian Network | 2.00 | Project Site and Connecting Off-Site | | |
| No | Neighborhood Enhancements | Provide Traffic Calming Measures | | | | |
| No | Neighborhood Enhancements | Implement NEV Network | 0.00 | | | |
| | Neighborhood Enhancements | Neighborhood Enhancements Subtotal | 0.02 | | | |
| No | Parking Policy Pricing | Limit Parking Supply | 0.00 | | | |
| No | Parking Policy Pricing | Unbundle Parking Costs | 0.00 | | | |
| No | Parking Policy Pricing | On-street Market Pricing | 0.00 | | | |
| | Parking Policy Pricing | Parking Policy Pricing Subtotal | 0.00 | | | |
| No | Transit Improvements | Provide BRT System | 0.00 | | | |
| No | Transit Improvements | Expand Transit Network | 0.00 | | | |
| No | Transit Improvements | Increase Transit Frequency | 0.00 | | | |
| | Transit Improvements | Transit Improvements Subtotal | 0.00 | | | |
| | | Land Use and Site Enhancement Subtotal | 0.02 | | | |
| No | Commute | Implement Trip Reduction Program | | | | |
| No | Commute | Transit Subsidy | | | | |
| No | Commute | Implement Employee Parking "Cash Out" | 4.50 | | | |
| No | Commute | Workplace Parking Charge | | | | |
| No | Commute | Encourage Telecommuting and Alternative Work Schedules | 0.00 | | | |
| No | Commute | Market Commute Trip Reduction Option | 0.00 | | | |
| No | Commute | Employee Vanpool/Shuttle | 0.00 | | 2.00 | |

# Hat Ranch Project

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | | | | |
|---|---|---|---|---|---|---|
| No | Commute | Provide Ride Sharing Program | 10.00 | | | |
| | Commute | Commute Subtotal | 0.00 | | | |
| No | School Trip | Implement School Bus Program | 0.00 | | | |
| | | Total VMT Reduction | 0.02 | | | |

## Area Mitigation

| Measure Implemented | Mitigation Measure | Input Value |
|---|---|---|
| No | Only Natural Gas Hearth | |
| No | No Hearth | |
| Yes | Use Low VOC Cleaning Supplies | |
| No | Use Low VOC Paint (Residential Interior) | 150.00 |
| No | Use Low VOC Paint (Residential Exterior) | 150.00 |
| No | Use Low VOC Paint (Non-residential Interior) | 150.00 |
| No | Use Low VOC Paint (Non-residential Exterior) | 150.00 |
| No | Use Low VOC Paint (Parking) | 150.00 |
| Yes | % Electric Lawnmower | 100.00 |
| Yes | % Electric Leafblower | 100.00 |
| Yes | % Electric Chainsaw | 100.00 |

## Energy Mitigation Measures

| Measure Implemented | Mitigation Measure | Input Value 1 | Input Value 2 |
|---|---|---|---|
| No | Exceed Title 24 | | |

# Hat Ranch Project

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | |
|---|---|---|---|
| No | Install High Efficiency Lighting | | |
| No | On-site Renewable | | |

| Appliance Type | Land Use Subtype | % Improvement |
|---|---|---|
| ClothWasher | | 30.00 |
| DishWasher | | 15.00 |
| Fan | | 50.00 |
| Refrigerator | | 15.00 |

## Water Mitigation Measures

| Measure Implemented | Mitigation Measure | Input Value 1 | Input Value 2 |
|---|---|---|---|
| Yes | Apply Water Conservation on Strategy | 0.00 | 20.00 |
| No | Use Reclaimed Water | 0.00 | 0.00 |
| No | Use Grey Water | 0.00 | |
| No | Install low-flow bathroom faucet | 32.00 | |
| No | Install low-flow Kitchen faucet | 18.00 | |
| No | Install low-flow Toilet | 20.00 | |
| No | Install low-flow Shower | 20.00 | |
| No | Turf Reduction | 0.00 | |
| No | Use Water Efficient Irrigation Systems | 6.10 | |
| No | Water Efficient Landscape | 0.00 | 0.00 |

## Solid Waste Mitigation

# Hat Ranch Project

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

| Mitigation Measures | Input Value |
|---|---|
| Institute Recycling and Composting Services<br>Percent Reduction in Waste Disposed | |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

# Hat Ranch Project - Reduced Density Alternative

**San Joaquin Valley Unified APCD Air District, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| City Park | 16.20 | Acre | 16.20 | 705,672.00 | 0 |
| Single Family Housing | 354.00 | Dwelling Unit | 168.60 | 637,200.00 | 1123 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.7 | **Precipitation Freq (Days)** | 45 |
| **Climate Zone** | 2 | | | **Operational Year** | 2035 |
| **Utility Company** | Pacific Gas and Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 116.67 | **CH4 Intensity (lb/MWhr)** | 0.033 | **N2O Intensity (lb/MWhr)** | 0.004 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor adjusted per PG&E's compliance with RPS.

Land Use - Lot acrages adjusted according to site plan.

Construction Phase - Architectural coating phase timing adjusted to occur during building construction.

Vehicle Trips -

Mobile Land Use Mitigation -

Area Mitigation - All electric landscaping equipment would be used, pursuant to AB 1346
Low VOC cleaning supplies required, per SJVAPCD Rule 4663

Water Mitigation - Water conservation strategy applied to reflect compliance with MWELO.

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstructionPhase | NumDays | 220.00 | 3,100.00 |
| tblConstructionPhase | PhaseEndDate | 7/17/2037 | 9/27/2035 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | |
|---|---|---|---|
| tblConstructionPhase | PhaseEndDate | 11/9/2035 | 9/13/2035 |
| tblConstructionPhase | PhaseEndDate | 9/12/2036 | 10/26/2023 |
| tblConstructionPhase | PhaseStartDate | 9/13/2036 | 11/10/2023 |
| tblConstructionPhase | PhaseStartDate | 12/23/2023 | 10/27/2023 |
| tblConstructionPhase | PhaseStartDate | 11/10/2035 | 12/23/2022 |
| tblLandUse | LotAcreage | 114.94 | 168.60 |
| tblProjectCharacteristics | CO2IntensityFactor | 203.98 | 116.67 |

## 2.0 Emissions Summary

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 2.1 Overall Construction

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2022 | 0.2989 | 3.0906 | 2.0699 | 4.1800e-003 | 1.8516 | 0.1435 | 1.9950 | 0.7540 | 0.1320 | 0.8860 | 0.0000 | 367.7513 | 367.7513 | 0.1157 | 3.4000e-004 | 370.7467 |
| 2023 | 0.6955 | 6.0346 | 5.9754 | 0.0128 | 1.4079 | 0.2553 | 1.6631 | 0.5149 | 0.2353 | 0.7502 | 0.0000 | 1,135.9351 | 1,135.9351 | 0.3106 | 0.0132 | 1,147.6182 |
| 2024 | 0.9366 | 2.9369 | 4.1556 | 0.0124 | 0.6669 | 0.0968 | 0.7637 | 0.1803 | 0.0916 | 0.2719 | 0.0000 | 1,141.7958 | 1,141.7958 | 0.0874 | 0.0690 | 1,164.5376 |
| 2025 | 0.9036 | 2.7722 | 4.0133 | 0.0122 | 0.6643 | 0.0839 | 0.7482 | 0.1797 | 0.0794 | 0.2590 | 0.0000 | 1,120.4056 | 1,120.4056 | 0.0853 | 0.0668 | 1,142.4491 |
| 2026 | 0.8910 | 2.7562 | 3.9235 | 0.0119 | 0.6643 | 0.0838 | 0.7481 | 0.1797 | 0.0792 | 0.2589 | 0.0000 | 1,104.0665 | 1,104.0665 | 0.0843 | 0.0650 | 1,125.5544 |
| 2027 | 0.8798 | 2.7410 | 3.8416 | 0.0117 | 0.6643 | 0.0836 | 0.7479 | 0.1797 | 0.0791 | 0.2587 | 0.0000 | 1,087.7184 | 1,087.7184 | 0.0833 | 0.0633 | 1,108.6677 |
| 2028 | 0.8662 | 2.7185 | 3.7595 | 0.0115 | 0.6618 | 0.0831 | 0.7448 | 0.1790 | 0.0786 | 0.2576 | 0.0000 | 1,068.5899 | 1,068.5899 | 0.0822 | 0.0615 | 1,088.9685 |
| 2029 | 0.8599 | 2.7175 | 3.7157 | 0.0114 | 0.6643 | 0.0832 | 0.7475 | 0.1797 | 0.0787 | 0.2584 | 0.0000 | 1,058.7623 | 1,058.7623 | 0.0819 | 0.0603 | 1,078.7636 |
| 2030 | 0.8382 | 2.0789 | 3.6749 | 0.0118 | 0.6643 | 0.0295 | 0.6938 | 0.1797 | 0.0291 | 0.2087 | 0.0000 | 1,086.7059 | 1,086.7059 | 0.0234 | 0.0590 | 1,104.8569 |
| 2031 | 0.8297 | 2.0717 | 3.6324 | 0.0116 | 0.6643 | 0.0293 | 0.6936 | 0.1797 | 0.0289 | 0.2086 | 0.0000 | 1,075.6541 | 1,075.6541 | 0.0229 | 0.0578 | 1,093.4518 |
| 2032 | 0.8254 | 2.0736 | 3.6109 | 0.0115 | 0.6669 | 0.0293 | 0.6962 | 0.1803 | 0.0289 | 0.2093 | 0.0000 | 1,070.0234 | 1,070.0234 | 0.0225 | 0.0570 | 1,087.5838 |
| 2033 | 0.8125 | 2.0530 | 3.5535 | 0.0113 | 0.6618 | 0.0290 | 0.6907 | 0.1790 | 0.0286 | 0.2076 | 0.0000 | 1,053.3369 | 1,053.3369 | 0.0219 | 0.0558 | 1,070.5013 |
| 2034 | 0.8068 | 2.0484 | 3.5275 | 0.0113 | 0.6618 | 0.0288 | 0.6906 | 0.1790 | 0.0285 | 0.2075 | 0.0000 | 1,045.7429 | 1,045.7429 | 0.0216 | 0.0550 | 1,062.6756 |
| 2035 | 0.5781 | 1.3704 | 2.4918 | 7.9400e-003 | 0.4717 | 0.0141 | 0.4859 | 0.1276 | 0.0139 | 0.1414 | 0.0000 | 738.8651 | 738.8651 | 0.0143 | 0.0385 | 750.7025 |
| **Maximum** | **0.9366** | **6.0346** | **5.9754** | **0.0128** | **1.8516** | **0.2553** | **1.9950** | **0.7540** | **0.2353** | **0.8860** | **0.0000** | **1,141.7958** | **1,141.7958** | **0.3106** | **0.0690** | **1,164.5376** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 2.1 Overall Construction

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2022 | 0.2989 | 3.0906 | 2.0699 | 4.1800e-003 | 1.8516 | 0.1435 | 1.9950 | 0.7540 | 0.1320 | 0.8860 | 0.0000 | 367.7509 | 367.7509 | 0.1157 | 3.4000e-004 | 370.7462 |
| 2023 | 0.6955 | 6.0346 | 5.9754 | 0.0128 | 1.4079 | 0.2553 | 1.6631 | 0.5149 | 0.2353 | 0.7502 | 0.0000 | 1,135.9340 | 1,135.9340 | 0.3106 | 0.0132 | 1,147.6170 |
| 2024 | 0.9366 | 2.9369 | 4.1556 | 0.0124 | 0.6669 | 0.0968 | 0.7637 | 0.1803 | 0.0916 | 0.2719 | 0.0000 | 1,141.7954 | 1,141.7954 | 0.0874 | 0.0690 | 1,164.5372 |
| 2025 | 0.9036 | 2.7722 | 4.0133 | 0.0122 | 0.6643 | 0.0839 | 0.7482 | 0.1797 | 0.0794 | 0.2590 | 0.0000 | 1,120.4052 | 1,120.4052 | 0.0853 | 0.0668 | 1,142.4487 |
| 2026 | 0.8910 | 2.7562 | 3.9235 | 0.0119 | 0.6643 | 0.0838 | 0.7481 | 0.1797 | 0.0792 | 0.2589 | 0.0000 | 1,104.0661 | 1,104.0661 | 0.0843 | 0.0650 | 1,125.5540 |
| 2027 | 0.8798 | 2.7410 | 3.8416 | 0.0117 | 0.6643 | 0.0836 | 0.7479 | 0.1797 | 0.0791 | 0.2587 | 0.0000 | 1,087.7180 | 1,087.7180 | 0.0833 | 0.0633 | 1,108.6673 |
| 2028 | 0.8662 | 2.7185 | 3.7595 | 0.0115 | 0.6618 | 0.0831 | 0.7448 | 0.1790 | 0.0786 | 0.2576 | 0.0000 | 1,068.5895 | 1,068.5895 | 0.0822 | 0.0615 | 1,088.9681 |
| 2029 | 0.8599 | 2.7175 | 3.7157 | 0.0114 | 0.6643 | 0.0832 | 0.7475 | 0.1797 | 0.0787 | 0.2584 | 0.0000 | 1,058.7619 | 1,058.7619 | 0.0819 | 0.0603 | 1,078.7632 |
| 2030 | 0.8382 | 2.0789 | 3.6749 | 0.0118 | 0.6643 | 0.0295 | 0.6938 | 0.1797 | 0.0291 | 0.2087 | 0.0000 | 1,086.7055 | 1,086.7055 | 0.0234 | 0.0590 | 1,104.8565 |
| 2031 | 0.8297 | 2.0717 | 3.6324 | 0.0116 | 0.6643 | 0.0293 | 0.6936 | 0.1797 | 0.0289 | 0.2086 | 0.0000 | 1,075.6537 | 1,075.6537 | 0.0229 | 0.0578 | 1,093.4514 |
| 2032 | 0.8254 | 2.0736 | 3.6109 | 0.0115 | 0.6669 | 0.0293 | 0.6962 | 0.1803 | 0.0289 | 0.2093 | 0.0000 | 1,070.0229 | 1,070.0229 | 0.0225 | 0.0570 | 1,087.5833 |
| 2033 | 0.8125 | 2.0530 | 3.5535 | 0.0113 | 0.6618 | 0.0290 | 0.6907 | 0.1790 | 0.0286 | 0.2076 | 0.0000 | 1,053.3365 | 1,053.3365 | 0.0219 | 0.0558 | 1,070.5009 |
| 2034 | 0.8068 | 2.0484 | 3.5275 | 0.0113 | 0.6618 | 0.0288 | 0.6906 | 0.1790 | 0.0285 | 0.2075 | 0.0000 | 1,045.7425 | 1,045.7425 | 0.0216 | 0.0550 | 1,062.6752 |
| 2035 | 0.5781 | 1.3704 | 2.4918 | 7.9400e-003 | 0.4717 | 0.0141 | 0.4859 | 0.1276 | 0.0139 | 0.1414 | 0.0000 | 738.8648 | 738.8648 | 0.0143 | 0.0385 | 750.7022 |
| **Maximum** | **0.9366** | **6.0346** | **5.9754** | **0.0128** | **1.8516** | **0.2553** | **1.9950** | **0.7540** | **0.2353** | **0.8860** | **0.0000** | **1,141.7954** | **1,141.7954** | **0.3106** | **0.0690** | **1,164.5372** |

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## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| 1 | 5-1-2022 | 7-31-2022 | 1.1949 | 1.1949 |
| 2 | 8-1-2022 | 10-31-2022 | 1.2327 | 1.2327 |
| 3 | 11-1-2022 | 1-31-2023 | 1.5128 | 1.5128 |
| 4 | 2-1-2023 | 4-30-2023 | 1.5656 | 1.5656 |
| 5 | 5-1-2023 | 7-31-2023 | 1.6185 | 1.6185 |
| 6 | 8-1-2023 | 10-31-2023 | 1.6437 | 1.6437 |
| 7 | 11-1-2023 | 1-31-2024 | 1.6980 | 1.6980 |
| 8 | 2-1-2024 | 4-30-2024 | 0.9555 | 0.9555 |
| 9 | 5-1-2024 | 7-31-2024 | 0.9672 | 0.9672 |
| 10 | 8-1-2024 | 10-31-2024 | 0.9720 | 0.9720 |
| 11 | 11-1-2024 | 1-31-2025 | 0.9658 | 0.9658 |
| 12 | 2-1-2025 | 4-30-2025 | 0.8998 | 0.8998 |
| 13 | 5-1-2025 | 7-31-2025 | 0.9208 | 0.9208 |
| 14 | 8-1-2025 | 10-31-2025 | 0.9256 | 0.9256 |
| 15 | 11-1-2025 | 1-31-2026 | 0.9324 | 0.9324 |
| 16 | 2-1-2026 | 4-30-2026 | 0.8926 | 0.8926 |
| 17 | 5-1-2026 | 7-31-2026 | 0.9134 | 0.9134 |
| 18 | 8-1-2026 | 10-31-2026 | 0.9181 | 0.9181 |
| 19 | 11-1-2026 | 1-31-2027 | 0.9250 | 0.9250 |
| 20 | 2-1-2027 | 4-30-2027 | 0.8859 | 0.8859 |
| 21 | 5-1-2027 | 7-31-2027 | 0.9065 | 0.9065 |
| 22 | 8-1-2027 | 10-31-2027 | 0.9112 | 0.9112 |
| 23 | 11-1-2027 | 1-31-2028 | 0.9184 | 0.9184 |
| 24 | 2-1-2028 | 4-30-2028 | 0.8901 | 0.8901 |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | | |
|---|---|---|---|---|
| **25** | **5-1-2028** | **7-31-2028** | 0.9007 | 0.9007 |
| **26** | **8-1-2028** | **10-31-2028** | 0.9053 | 0.9053 |
| **27** | **11-1-2028** | **1-31-2029** | 0.9127 | 0.9127 |
| **28** | **2-1-2029** | **4-30-2029** | 0.8749 | 0.8749 |
| **29** | **5-1-2029** | **7-31-2029** | 0.8952 | 0.8952 |
| **30** | **8-1-2029** | **10-31-2029** | 0.8998 | 0.8998 |
| **31** | **11-1-2029** | **1-31-2030** | 0.8529 | 0.8529 |
| **32** | **2-1-2030** | **4-30-2030** | 0.7138 | 0.7138 |
| **33** | **5-1-2030** | **7-31-2030** | 0.7287 | 0.7287 |
| **34** | **8-1-2030** | **10-31-2030** | 0.7333 | 0.7333 |
| **35** | **11-1-2030** | **1-31-2031** | 0.7411 | 0.7411 |
| **36** | **2-1-2031** | **4-30-2031** | 0.7098 | 0.7098 |
| **37** | **5-1-2031** | **7-31-2031** | 0.7245 | 0.7245 |
| **38** | **8-1-2031** | **10-31-2031** | 0.7292 | 0.7292 |
| **39** | **11-1-2031** | **1-31-2032** | 0.7372 | 0.7372 |
| **40** | **2-1-2032** | **4-30-2032** | 0.7144 | 0.7144 |
| **41** | **5-1-2032** | **7-31-2032** | 0.7209 | 0.7209 |
| **42** | **8-1-2032** | **10-31-2032** | 0.7256 | 0.7256 |
| **43** | **11-1-2032** | **1-31-2033** | 0.7339 | 0.7339 |
| **44** | **2-1-2033** | **4-30-2033** | 0.7034 | 0.7034 |
| **45** | **5-1-2033** | **7-31-2033** | 0.7178 | 0.7178 |
| **46** | **8-1-2033** | **10-31-2033** | 0.7225 | 0.7225 |
| **47** | **11-1-2033** | **1-31-2034** | 0.7310 | 0.7310 |
| **48** | **2-1-2034** | **4-30-2034** | 0.7008 | 0.7008 |
| **49** | **5-1-2034** | **7-31-2034** | 0.7150 | 0.7150 |
| **50** | **8-1-2034** | **10-31-2034** | 0.7198 | 0.7198 |
| **51** | **11-1-2034** | **1-31-2035** | 0.7175 | 0.7175 |
| **52** | **2-1-2035** | **4-30-2035** | 0.6673 | 0.6673 |
| **53** | **5-1-2035** | **7-31-2035** | 0.6803 | 0.6803 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | | |
|---|---|---|---|---|
| **54** | **8-1-2035** | **9-30-2035** | 0.3500 | 0.3500 |
| | | **Highest** | 1.6980 | 1.6980 |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 3.5478 | 0.2161 | 5.9516 | 0.0117 | | 0.5597 | 0.5597 | | 0.5597 | 0.5597 | 71.5562 | 157.6493 | 229.2055 | 0.3415 | 2.8100e-003 | 238.5818 |
| Energy | 0.0452 | 0.3859 | 0.1642 | 2.4600e-003 | | 0.0312 | 0.0312 | | 0.0312 | 0.0312 | 0.0000 | 595.0698 | 595.0698 | 0.0505 | 0.0133 | 600.2867 |
| Mobile | 1.0877 | 1.9313 | 11.1297 | 0.0284 | 3.5972 | 0.0206 | 3.6178 | 0.9615 | 0.0194 | 0.9809 | 0.0000 | 2,820.7924 | 2,820.7924 | 0.1225 | 0.1423 | 2,866.2622 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 86.0519 | 0.0000 | 86.0519 | 5.0855 | 0.0000 | 213.1900 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 7.3173 | 12.8730 | 20.1903 | 0.7552 | 0.0182 | 44.4901 |
| **Total** | **4.6807** | **2.5333** | **17.2455** | **0.0425** | **3.5972** | **0.6115** | **4.2087** | **0.9615** | **0.6103** | **1.5718** | **164.9254** | **3,586.3845** | **3,751.3100** | **6.3553** | **0.1766** | **3,962.8108** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 2.2 Overall Operational

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 3.3250 | 0.2099 | 5.3223 | 0.0116 | | 0.5560 | 0.5560 | | 0.5560 | 0.5560 | 71.5562 | 156.3600 | 227.9162 | 0.3396 | 2.8100e-003 | 237.2438 |
| Energy | 0.0452 | 0.3859 | 0.1642 | 2.4600e-003 | | 0.0312 | 0.0312 | | 0.0312 | 0.0312 | 0.0000 | 595.0698 | 595.0698 | 0.0505 | 0.0133 | 600.2867 |
| Mobile | 1.0766 | 1.9024 | 10.9595 | 0.0278 | 3.5252 | 0.0202 | 3.5455 | 0.9423 | 0.0190 | 0.9613 | 0.0000 | 2,766.1167 | 2,766.1167 | 0.1208 | 0.1400 | 2,810.8581 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 86.0519 | 0.0000 | 86.0519 | 5.0855 | 0.0000 | 213.1900 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 7.3173 | 11.6193 | 18.9367 | 0.7548 | 0.0181 | 43.2148 |
| **Total** | **4.4467** | **2.4982** | **16.4460** | **0.0419** | **3.5252** | **0.6074** | **4.1326** | **0.9423** | **0.6062** | **1.5485** | **164.9254** | **3,529.1659** | **3,694.0914** | **6.3513** | **0.1742** | **3,904.7934** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **5.00** | **1.38** | **4.64** | **1.41** | **2.00** | **0.67** | **1.81** | **2.00** | **0.67** | **1.48** | **0.00** | **1.60** | **1.53** | **0.06** | **1.33** | **1.46** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 5/1/2022 | 10/14/2022 | 5 | 120 | |
| 2 | Grading | Grading | 10/15/2022 | 12/22/2023 | 5 | 310 | |
| 3 | Building Construction | Building Construction | 10/27/2023 | 9/13/2035 | 5 | 3100 | |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 4 | Paving | Paving | 12/23/2022 | 10/26/2023 | 5 | 220 | |
| 5 | Architectural Coating | Architectural Coating | 11/10/2023 | 9/27/2035 | 5 | 3100 | |

**Acres of Grading (Site Preparation Phase): 180**

**Acres of Grading (Grading Phase): 930**

**Acres of Paving: 0**

**Residential Indoor: 1,290,330; Residential Outdoor: 430,110; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

## OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

## Trips and VMT

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 424.00 | 154.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 85.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Site Preparation - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 1.1794 | 0.0000 | 1.1794 | 0.6062 | 0.0000 | 0.6062 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.1902 | 1.9850 | 1.1819 | 2.2800e-003 | | 0.0968 | 0.0968 | | 0.0890 | 0.0890 | 0.0000 | 200.6363 | 200.6363 | 0.0649 | 0.0000 | 202.2586 |
| **Total** | **0.1902** | **1.9850** | **1.1819** | **2.2800e-003** | **1.1794** | **0.0968** | **1.2762** | **0.6062** | **0.0890** | **0.6952** | **0.0000** | **200.6363** | **200.6363** | **0.0649** | **0.0000** | **202.2586** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.2 Site Preparation - 2022

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 3.7000e-003 | 2.6000e-003 | 0.0295 | 8.0000e-005 | 8.6300e-003 | 5.0000e-005 | 8.6800e-003 | 2.2900e-003 | 4.0000e-005 | 2.3400e-003 | 0.0000 | 7.1806 | 7.1806 | 2.4000e-004 | 2.2000e-004 | 7.2528 |
| **Total** | **3.7000e-003** | **2.6000e-003** | **0.0295** | **8.0000e-005** | **8.6300e-003** | **5.0000e-005** | **8.6800e-003** | **2.2900e-003** | **4.0000e-005** | **2.3400e-003** | **0.0000** | **7.1806** | **7.1806** | **2.4000e-004** | **2.2000e-004** | **7.2528** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 1.1794 | 0.0000 | 1.1794 | 0.6062 | 0.0000 | 0.6062 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.1902 | 1.9850 | 1.1819 | 2.2800e-003 | | 0.0968 | 0.0968 | | 0.0890 | 0.0890 | 0.0000 | 200.6361 | 200.6361 | 0.0649 | 0.0000 | 202.2584 |
| **Total** | **0.1902** | **1.9850** | **1.1819** | **2.2800e-003** | **1.1794** | **0.0968** | **1.2762** | **0.6062** | **0.0890** | **0.6952** | **0.0000** | **200.6361** | **200.6361** | **0.0649** | **0.0000** | **202.2584** |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.2 Site Preparation - 2022

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 3.7000e-003 | 2.6000e-003 | 0.0295 | 8.0000e-005 | 8.6300e-003 | 5.0000e-005 | 8.6800e-003 | 2.2900e-003 | 4.0000e-005 | 2.3400e-003 | 0.0000 | 7.1806 | 7.1806 | 2.4000e-004 | 2.2000e-004 | 7.2528 |
| **Total** | **3.7000e-003** | **2.6000e-003** | **0.0295** | **8.0000e-005** | **8.6300e-003** | **5.0000e-005** | **8.6800e-003** | **2.2900e-003** | **4.0000e-005** | **2.3400e-003** | **0.0000** | **7.1806** | **7.1806** | **2.4000e-004** | **2.2000e-004** | **7.2528** |

## 3.3 Grading - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.6587 | 0.0000 | 0.6587 | 0.1443 | 0.0000 | 0.1443 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0997 | 1.0682 | 0.7986 | 1.7100e-003 | | 0.0450 | 0.0450 | | 0.0414 | 0.0414 | 0.0000 | 149.9702 | 149.9702 | 0.0485 | 0.0000 | 151.1827 |
| **Total** | **0.0997** | **1.0682** | **0.7986** | **1.7100e-003** | **0.6587** | **0.0450** | **0.7037** | **0.1443** | **0.0414** | **0.1856** | **0.0000** | **149.9702** | **149.9702** | **0.0485** | **0.0000** | **151.1827** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2022

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.8800e-003 | 1.3300e-003 | 0.0150 | 4.0000e-005 | 4.4000e-003 | 2.0000e-005 | 4.4200e-003 | 1.1700e-003 | 2.0000e-005 | 1.1900e-003 | 0.0000 | 3.6568 | 3.6568 | 1.2000e-004 | 1.1000e-004 | 3.6935 |
| **Total** | **1.8800e-003** | **1.3300e-003** | **0.0150** | **4.0000e-005** | **4.4000e-003** | **2.0000e-005** | **4.4200e-003** | **1.1700e-003** | **2.0000e-005** | **1.1900e-003** | **0.0000** | **3.6568** | **3.6568** | **1.2000e-004** | **1.1000e-004** | **3.6935** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.6587 | 0.0000 | 0.6587 | 0.1443 | 0.0000 | 0.1443 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0997 | 1.0682 | 0.7986 | 1.7100e-003 | | 0.0450 | 0.0450 | | 0.0414 | 0.0414 | 0.0000 | 149.9700 | 149.9700 | 0.0485 | 0.0000 | 151.1826 |
| **Total** | **0.0997** | **1.0682** | **0.7986** | **1.7100e-003** | **0.6587** | **0.0450** | **0.7037** | **0.1443** | **0.0414** | **0.1856** | **0.0000** | **149.9700** | **149.9700** | **0.0485** | **0.0000** | **151.1826** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2022

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.8800e-003 | 1.3300e-003 | 0.0150 | 4.0000e-005 | 4.4000e-003 | 2.0000e-005 | 4.4200e-003 | 1.1700e-003 | 2.0000e-005 | 1.1900e-003 | 0.0000 | 3.6568 | 3.6568 | 1.2000e-004 | 1.1000e-004 | 3.6935 |
| **Total** | **1.8800e-003** | **1.3300e-003** | **0.0150** | **4.0000e-005** | **4.4000e-003** | **2.0000e-005** | **4.4200e-003** | **1.1700e-003** | **2.0000e-005** | **1.1900e-003** | **0.0000** | **3.6568** | **3.6568** | **1.2000e-004** | **1.1000e-004** | **3.6935** |

## 3.3 Grading - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 1.2610 | 0.0000 | 1.2610 | 0.4753 | 0.0000 | 0.4753 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.4235 | 4.4007 | 3.5765 | 7.9200e-003 | | 0.1816 | 0.1816 | | 0.1671 | 0.1671 | 0.0000 | 695.3239 | 695.3239 | 0.2249 | 0.0000 | 700.9460 |
| **Total** | **0.4235** | **4.4007** | **3.5765** | **7.9200e-003** | **1.2610** | **0.1816** | **1.4426** | **0.4753** | **0.1671** | **0.6424** | **0.0000** | **695.3239** | **695.3239** | **0.2249** | **0.0000** | **700.9460** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2023

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 8.0100e-003 | 5.3700e-003 | 0.0635 | 1.8000e-004 | 0.0204 | 1.1000e-004 | 0.0205 | 5.4200e-003 | 1.0000e-004 | 5.5200e-003 | 0.0000 | 16.5088 | 16.5088 | 5.1000e-004 | 4.8000e-004 | 16.6648 |
| **Total** | **8.0100e-003** | **5.3700e-003** | **0.0635** | **1.8000e-004** | **0.0204** | **1.1000e-004** | **0.0205** | **5.4200e-003** | **1.0000e-004** | **5.5200e-003** | **0.0000** | **16.5088** | **16.5088** | **5.1000e-004** | **4.8000e-004** | **16.6648** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 1.2610 | 0.0000 | 1.2610 | 0.4753 | 0.0000 | 0.4753 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.4235 | 4.4007 | 3.5765 | 7.9200e-003 | | 0.1816 | 0.1816 | | 0.1671 | 0.1671 | 0.0000 | 695.3231 | 695.3231 | 0.2249 | 0.0000 | 700.9451 |
| **Total** | **0.4235** | **4.4007** | **3.5765** | **7.9200e-003** | **1.2610** | **0.1816** | **1.4426** | **0.4753** | **0.1671** | **0.6424** | **0.0000** | **695.3231** | **695.3231** | **0.2249** | **0.0000** | **700.9451** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2023

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 8.0100e-003 | 5.3700e-003 | 0.0635 | 1.8000e-004 | 0.0204 | 1.1000e-004 | 0.0205 | 5.4200e-003 | 1.0000e-004 | 5.5200e-003 | 0.0000 | 16.5088 | 16.5088 | 5.1000e-004 | 4.8000e-004 | 16.6648 |
| **Total** | **8.0100e-003** | **5.3700e-003** | **0.0635** | **1.8000e-004** | **0.0204** | **1.1000e-004** | **0.0205** | **5.4200e-003** | **1.0000e-004** | **5.5200e-003** | **0.0000** | **16.5088** | **16.5088** | **5.1000e-004** | **4.8000e-004** | **16.6648** |

## 3.4 Building Construction - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0362 | 0.3309 | 0.3736 | 6.2000e-004 | | 0.0161 | 0.0161 | | 0.0151 | 0.0151 | 0.0000 | 53.3151 | 53.3151 | 0.0127 | 0.0000 | 53.6322 |
| **Total** | **0.0362** | **0.3309** | **0.3736** | **6.2000e-004** | | **0.0161** | **0.0161** | | **0.0151** | **0.0151** | **0.0000** | **53.3151** | **53.3151** | **0.0127** | **0.0000** | **53.6322** |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2023

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 3.9100e-003 | 0.1566 | 0.0480 | 7.1000e-004 | 0.0235 | 1.0100e-003 | 0.0245 | 6.7900e-003 | 9.7000e-004 | 7.7500e-003 | 0.0000 | 68.4728 | 68.4728 | 2.9000e-004 | 0.0102 | 71.5330 |
| Worker | 0.0306 | 0.0205 | 0.2427 | 6.8000e-004 | 0.0780 | 4.1000e-004 | 0.0784 | 0.0207 | 3.8000e-004 | 0.0211 | 0.0000 | 63.1350 | 63.1350 | 1.9700e-003 | 1.8400e-003 | 63.7315 |
| **Total** | **0.0345** | **0.1771** | **0.2907** | **1.3900e-003** | **0.1015** | **1.4200e-003** | **0.1029** | **0.0275** | **1.3500e-003** | **0.0289** | **0.0000** | **131.6078** | **131.6078** | **2.2600e-003** | **0.0121** | **135.2645** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0362 | 0.3309 | 0.3736 | 6.2000e-004 | | 0.0161 | 0.0161 | | 0.0151 | 0.0151 | 0.0000 | 53.3150 | 53.3150 | 0.0127 | 0.0000 | 53.6321 |
| **Total** | **0.0362** | **0.3309** | **0.3736** | **6.2000e-004** | | **0.0161** | **0.0161** | | **0.0151** | **0.0151** | **0.0000** | **53.3150** | **53.3150** | **0.0127** | **0.0000** | **53.6321** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2023

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 3.9100e-003 | 0.1566 | 0.0480 | 7.1000e-004 | 0.0235 | 1.0100e-003 | 0.0245 | 6.7900e-003 | 9.7000e-004 | 7.7500e-003 | 0.0000 | 68.4728 | 68.4728 | 2.9000e-004 | 0.0102 | 71.5330 |
| Worker | 0.0306 | 0.0205 | 0.2427 | 6.8000e-004 | 0.0780 | 4.1000e-004 | 0.0784 | 0.0207 | 3.8000e-004 | 0.0211 | 0.0000 | 63.1350 | 63.1350 | 1.9700e-003 | 1.8400e-003 | 63.7315 |
| **Total** | **0.0345** | **0.1771** | **0.2907** | **1.3900e-003** | **0.1015** | **1.4200e-003** | **0.1029** | **0.0275** | **1.3500e-003** | **0.0289** | **0.0000** | **131.6078** | **131.6078** | **2.2600e-003** | **0.0121** | **135.2645** |

## 3.4 Building Construction - 2024

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1928 | 1.7611 | 2.1179 | 3.5300e-003 | | 0.0803 | 0.0803 | | 0.0756 | 0.0756 | 0.0000 | 303.7223 | 303.7223 | 0.0718 | 0.0000 | 305.5179 |
| **Total** | **0.1928** | **1.7611** | **2.1179** | **3.5300e-003** | | **0.0803** | **0.0803** | | **0.0756** | **0.0756** | **0.0000** | **303.7223** | **303.7223** | **0.0718** | **0.0000** | **305.5179** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2024

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0217 | 0.8924 | 0.2665 | 4.0000e-003 | 0.1338 | 5.8100e-003 | 0.1396 | 0.0387 | 5.5600e-003 | 0.0442 | 0.0000 | 383.7657 | 383.7657 | 1.5900e-003 | 0.0574 | 400.9075 |
| Worker | 0.1608 | 0.1031 | 1.2779 | 3.7500e-003 | 0.4441 | 2.2300e-003 | 0.4463 | 0.1180 | 2.0500e-003 | 0.1201 | 0.0000 | 350.5790 | 350.5790 | 0.0101 | 9.6600e-003 | 353.7089 |
| **Total** | **0.1825** | **0.9954** | **1.5444** | **7.7500e-003** | **0.5778** | **8.0400e-003** | **0.5859** | **0.1567** | **7.6100e-003** | **0.1643** | **0.0000** | **734.3447** | **734.3447** | **0.0117** | **0.0671** | **754.6164** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1928 | 1.7611 | 2.1179 | 3.5300e-003 | | 0.0803 | 0.0803 | | 0.0756 | 0.0756 | 0.0000 | 303.7220 | 303.7220 | 0.0718 | 0.0000 | 305.5175 |
| **Total** | **0.1928** | **1.7611** | **2.1179** | **3.5300e-003** | | **0.0803** | **0.0803** | | **0.0756** | **0.0756** | **0.0000** | **303.7220** | **303.7220** | **0.0718** | **0.0000** | **305.5175** |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2024

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0217 | 0.8924 | 0.2665 | 4.0000e-003 | 0.1338 | 5.8100e-003 | 0.1396 | 0.0387 | 5.5600e-003 | 0.0442 | 0.0000 | 383.7657 | 383.7657 | 1.5900e-003 | 0.0574 | 400.9075 |
| Worker | 0.1608 | 0.1031 | 1.2779 | 3.7500e-003 | 0.4441 | 2.2300e-003 | 0.4463 | 0.1180 | 2.0500e-003 | 0.1201 | 0.0000 | 350.5790 | 350.5790 | 0.0101 | 9.6600e-003 | 353.7089 |
| **Total** | **0.1825** | **0.9954** | **1.5444** | **7.7500e-003** | **0.5778** | **8.0400e-003** | **0.5859** | **0.1567** | **7.6100e-003** | **0.1643** | **0.0000** | **734.3447** | **734.3447** | **0.0117** | **0.0671** | **754.6164** |

## 3.4 Building Construction - 2025

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1785 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6549 | 302.6549 | 0.0711 | 0.0000 | 304.4335 |
| **Total** | **0.1785** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6549** | **302.6549** | **0.0711** | **0.0000** | **304.4335** |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2025

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0211 | 0.8860 | 0.2599 | 3.9200e-003 | 0.1333 | 5.7900e-003 | 0.1391 | 0.0385 | 5.5400e-003 | 0.0440 | 0.0000 | 375.3408 | 375.3408 | 1.5200e-003 | 0.0561 | 392.0911 |
| Worker | 0.1484 | 0.0912 | 1.1814 | 3.6100e-003 | 0.4424 | 2.1200e-003 | 0.4445 | 0.1176 | 1.9500e-003 | 0.1195 | 0.0000 | 340.7744 | 340.7744 | 9.0300e-003 | 8.9400e-003 | 343.6641 |
| **Total** | **0.1695** | **0.9771** | **1.4413** | **7.5300e-003** | **0.5756** | **7.9100e-003** | **0.5835** | **0.1561** | **7.4900e-003** | **0.1636** | **0.0000** | **716.1152** | **716.1152** | **0.0106** | **0.0650** | **735.7552** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1784 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6545 | 302.6545 | 0.0711 | 0.0000 | 304.4331 |
| **Total** | **0.1784** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6545** | **302.6545** | **0.0711** | **0.0000** | **304.4331** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2025

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0211 | 0.8860 | 0.2599 | 3.9200e-003 | 0.1333 | 5.7900e-003 | 0.1391 | 0.0385 | 5.5400e-003 | 0.0440 | 0.0000 | 375.3408 | 375.3408 | 1.5200e-003 | 0.0561 | 392.0911 |
| Worker | 0.1484 | 0.0912 | 1.1814 | 3.6100e-003 | 0.4424 | 2.1200e-003 | 0.4445 | 0.1176 | 1.9500e-003 | 0.1195 | 0.0000 | 340.7744 | 340.7744 | 9.0300e-003 | 8.9400e-003 | 343.6641 |
| **Total** | **0.1695** | **0.9771** | **1.4413** | **7.5300e-003** | **0.5756** | **7.9100e-003** | **0.5835** | **0.1561** | **7.4900e-003** | **0.1636** | **0.0000** | **716.1152** | **716.1152** | **0.0106** | **0.0650** | **735.7552** |

## 3.4 Building Construction - 2026

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1785 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6549 | 302.6549 | 0.0711 | 0.0000 | 304.4335 |
| **Total** | **0.1785** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6549** | **302.6549** | **0.0711** | **0.0000** | **304.4335** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2026

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0206 | 0.8811 | 0.2554 | 3.8400e-003 | 0.1333 | 5.7600e-003 | 0.1390 | 0.0385 | 5.5100e-003 | 0.0440 | 0.0000 | 368.2856 | 368.2856 | 1.4600e-003 | 0.0550 | 384.7048 |
| Worker | 0.1384 | 0.0818 | 1.1104 | 3.5000e-003 | 0.4424 | 2.0200e-003 | 0.4444 | 0.1176 | 1.8600e-003 | 0.1194 | 0.0000 | 333.0409 | 333.0409 | 8.1900e-003 | 8.3800e-003 | 335.7436 |
| **Total** | **0.1590** | **0.9630** | **1.3658** | **7.3400e-003** | **0.5756** | **7.7800e-003** | **0.5834** | **0.1561** | **7.3700e-003** | **0.1635** | **0.0000** | **701.3264** | **701.3264** | **9.6500e-003** | **0.0634** | **720.4484** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1784 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6545 | 302.6545 | 0.0711 | 0.0000 | 304.4331 |
| **Total** | **0.1784** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6545** | **302.6545** | **0.0711** | **0.0000** | **304.4331** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2026

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0206 | 0.8811 | 0.2554 | 3.8400e-003 | 0.1333 | 5.7600e-003 | 0.1390 | 0.0385 | 5.5100e-003 | 0.0440 | 0.0000 | 368.2856 | 368.2856 | 1.4600e-003 | 0.0550 | 384.7048 |
| Worker | 0.1384 | 0.0818 | 1.1104 | 3.5000e-003 | 0.4424 | 2.0200e-003 | 0.4444 | 0.1176 | 1.8600e-003 | 0.1194 | 0.0000 | 333.0409 | 333.0409 | 8.1900e-003 | 8.3800e-003 | 335.7436 |
| **Total** | **0.1590** | **0.9630** | **1.3658** | **7.3400e-003** | **0.5756** | **7.7800e-003** | **0.5834** | **0.1561** | **7.3700e-003** | **0.1635** | **0.0000** | **701.3264** | **701.3264** | **9.6500e-003** | **0.0634** | **720.4484** |

## 3.4 Building Construction - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1785 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6549 | 302.6549 | 0.0711 | 0.0000 | 304.4335 |
| **Total** | **0.1785** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6549** | **302.6549** | **0.0711** | **0.0000** | **304.4335** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2027

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0203 | 0.8753 | 0.2516 | 3.7600e-003 | 0.1333 | 5.7200e-003 | 0.1390 | 0.0385 | 5.4700e-003 | 0.0440 | 0.0000 | 360.7481 | 360.7481 | 1.4200e-003 | 0.0538 | 376.8181 |
| Worker | 0.1293 | 0.0741 | 1.0453 | 3.3900e-003 | 0.4424 | 1.9100e-003 | 0.4443 | 0.1176 | 1.7600e-003 | 0.1193 | 0.0000 | 325.7015 | 325.7015 | 7.4600e-003 | 7.9100e-003 | 328.2466 |
| **Total** | **0.1496** | **0.9494** | **1.2970** | **7.1500e-003** | **0.5756** | **7.6300e-003** | **0.5833** | **0.1561** | **7.2300e-003** | **0.1633** | **0.0000** | **686.4496** | **686.4496** | **8.8800e-003** | **0.0617** | **705.0647** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1784 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6545 | 302.6545 | 0.0711 | 0.0000 | 304.4331 |
| **Total** | **0.1784** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6545** | **302.6545** | **0.0711** | **0.0000** | **304.4331** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2027

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0203 | 0.8753 | 0.2516 | 3.7600e-003 | 0.1333 | 5.7200e-003 | 0.1390 | 0.0385 | 5.4700e-003 | 0.0440 | 0.0000 | 360.7481 | 360.7481 | 1.4200e-003 | 0.0538 | 376.8181 |
| Worker | 0.1293 | 0.0741 | 1.0453 | 3.3900e-003 | 0.4424 | 1.9100e-003 | 0.4443 | 0.1176 | 1.7600e-003 | 0.1193 | 0.0000 | 325.7015 | 325.7015 | 7.4600e-003 | 7.9100e-003 | 328.2466 |
| **Total** | **0.1496** | **0.9494** | **1.2970** | **7.1500e-003** | **0.5756** | **7.6300e-003** | **0.5833** | **0.1561** | **7.2300e-003** | **0.1633** | **0.0000** | **686.4496** | **686.4496** | **8.8800e-003** | **0.0617** | **705.0647** |

## 3.4 Building Construction - 2028

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1778 | 1.6211 | 2.0910 | 3.5000e-003 | | 0.0686 | 0.0686 | | 0.0645 | 0.0645 | 0.0000 | 301.4953 | 301.4953 | 0.0709 | 0.0000 | 303.2671 |
| **Total** | **0.1778** | **1.6211** | **2.0910** | **3.5000e-003** | | **0.0686** | **0.0686** | | **0.0645** | **0.0645** | **0.0000** | **301.4953** | **301.4953** | **0.0709** | **0.0000** | **303.2671** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2028

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0199 | 0.8677 | 0.2477 | 3.6700e-003 | 0.1328 | 5.6600e-003 | 0.1384 | 0.0384 | 5.4200e-003 | 0.0438 | 0.0000 | 352.1953 | 352.1953 | 1.3700e-003 | 0.0525 | 367.8700 |
| Worker | 0.1206 | 0.0674 | 0.9877 | 3.2900e-003 | 0.4407 | 1.7800e-003 | 0.4425 | 0.1171 | 1.6400e-003 | 0.1188 | 0.0000 | 317.9642 | 317.9642 | 6.8100e-003 | 7.5000e-003 | 320.3689 |
| **Total** | **0.1404** | **0.9350** | **1.2354** | **6.9600e-003** | **0.5734** | **7.4400e-003** | **0.5809** | **0.1555** | **7.0600e-003** | **0.1625** | **0.0000** | **670.1595** | **670.1595** | **8.1800e-003** | **0.0600** | **688.2389** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1778 | 1.6211 | 2.0910 | 3.5000e-003 | | 0.0686 | 0.0686 | | 0.0645 | 0.0645 | 0.0000 | 301.4949 | 301.4949 | 0.0709 | 0.0000 | 303.2667 |
| **Total** | **0.1778** | **1.6211** | **2.0910** | **3.5000e-003** | | **0.0686** | **0.0686** | | **0.0645** | **0.0645** | **0.0000** | **301.4949** | **301.4949** | **0.0709** | **0.0000** | **303.2667** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2028

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0199 | 0.8677 | 0.2477 | 3.6700e-003 | 0.1328 | 5.6600e-003 | 0.1384 | 0.0384 | 5.4200e-003 | 0.0438 | 0.0000 | 352.1953 | 352.1953 | 1.3700e-003 | 0.0525 | 367.8700 |
| Worker | 0.1206 | 0.0674 | 0.9877 | 3.2900e-003 | 0.4407 | 1.7800e-003 | 0.4425 | 0.1171 | 1.6400e-003 | 0.1188 | 0.0000 | 317.9642 | 317.9642 | 6.8100e-003 | 7.5000e-003 | 320.3689 |
| **Total** | **0.1404** | **0.9350** | **1.2354** | **6.9600e-003** | **0.5734** | **7.4400e-003** | **0.5809** | **0.1555** | **7.0600e-003** | **0.1625** | **0.0000** | **670.1595** | **670.1595** | **8.1800e-003** | **0.0600** | **688.2389** |

## 3.4 Building Construction - 2029

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1785 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6549 | 302.6549 | 0.0711 | 0.0000 | 304.4335 |
| **Total** | **0.1785** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6549** | **302.6549** | **0.0711** | **0.0000** | **304.4335** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2029

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0197 | 0.8661 | 0.2461 | 3.6200e-003 | 0.1333 | 5.6400e-003 | 0.1389 | 0.0385 | 5.4000e-003 | 0.0439 | 0.0000 | 346.5949 | 346.5949 | 1.3400e-003 | 0.0516 | 362.0068 |
| Worker | 0.1133 | 0.0622 | 0.9450 | 3.2200e-003 | 0.4424 | 1.6700e-003 | 0.4440 | 0.1176 | 1.5400e-003 | 0.1191 | 0.0000 | 313.3706 | 313.3706 | 6.2800e-003 | 7.2000e-003 | 315.6742 |
| **Total** | **0.1329** | **0.9283** | **1.1911** | **6.8400e-003** | **0.5756** | **7.3100e-003** | **0.5830** | **0.1561** | **6.9400e-003** | **0.1630** | **0.0000** | **659.9655** | **659.9655** | **7.6200e-003** | **0.0588** | **677.6810** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1784 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6545 | 302.6545 | 0.0711 | 0.0000 | 304.4331 |
| **Total** | **0.1784** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6545** | **302.6545** | **0.0711** | **0.0000** | **304.4331** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2029

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0197 | 0.8661 | 0.2461 | 3.6200e-003 | 0.1333 | 5.6400e-003 | 0.1389 | 0.0385 | 5.4000e-003 | 0.0439 | 0.0000 | 346.5949 | 346.5949 | 1.3400e-003 | 0.0516 | 362.0068 |
| Worker | 0.1133 | 0.0622 | 0.9450 | 3.2200e-003 | 0.4424 | 1.6700e-003 | 0.4440 | 0.1176 | 1.5400e-003 | 0.1191 | 0.0000 | 313.3706 | 313.3706 | 6.2800e-003 | 7.2000e-003 | 315.6742 |
| **Total** | **0.1329** | **0.9283** | **1.1911** | **6.8400e-003** | **0.5756** | **7.3100e-003** | **0.5830** | **0.1561** | **6.9400e-003** | **0.1630** | **0.0000** | **659.9655** | **659.9655** | **7.6200e-003** | **0.0588** | **677.6810** |

## 3.4 Building Construction - 2030

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1708 | 1.0355 | 2.1085 | 4.0400e-003 | | 0.0193 | 0.0193 | | 0.0193 | 0.0193 | 0.0000 | 343.0336 | 343.0336 | 0.0138 | 0.0000 | 343.3777 |
| **Total** | **0.1708** | **1.0355** | **2.1085** | **4.0400e-003** | | **0.0193** | **0.0193** | | **0.0193** | **0.0193** | **0.0000** | **343.0336** | **343.0336** | **0.0138** | **0.0000** | **343.3777** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2030

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0194 | 0.8625 | 0.2441 | 3.5500e-003 | 0.1333 | 5.6100e-003 | 0.1389 | 0.0385 | 5.3600e-003 | 0.0439 | 0.0000 | 340.2854 | 340.2854 | 1.3200e-003 | 0.0506 | 355.4046 |
| Worker | 0.1061 | 0.0576 | 0.9060 | 3.1400e-003 | 0.4424 | 1.5700e-003 | 0.4439 | 0.1176 | 1.4400e-003 | 0.1190 | 0.0000 | 308.2679 | 308.2679 | 5.8000e-003 | 6.9300e-003 | 310.4788 |
| **Total** | **0.1255** | **0.9201** | **1.1501** | **6.6900e-003** | **0.5756** | **7.1800e-003** | **0.5828** | **0.1561** | **6.8000e-003** | **0.1629** | **0.0000** | **648.5533** | **648.5533** | **7.1200e-003** | **0.0576** | **665.8834** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1708 | 1.0355 | 2.1085 | 4.0400e-003 | | 0.0193 | 0.0193 | | 0.0193 | 0.0193 | 0.0000 | 343.0332 | 343.0332 | 0.0138 | 0.0000 | 343.3773 |
| **Total** | **0.1708** | **1.0355** | **2.1085** | **4.0400e-003** | | **0.0193** | **0.0193** | | **0.0193** | **0.0193** | **0.0000** | **343.0332** | **343.0332** | **0.0138** | **0.0000** | **343.3773** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2030

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0194 | 0.8625 | 0.2441 | 3.5500e-003 | 0.1333 | 5.6100e-003 | 0.1389 | 0.0385 | 5.3600e-003 | 0.0439 | 0.0000 | 340.2854 | 340.2854 | 1.3200e-003 | 0.0506 | 355.4046 |
| Worker | 0.1061 | 0.0576 | 0.9060 | 3.1400e-003 | 0.4424 | 1.5700e-003 | 0.4439 | 0.1176 | 1.4400e-003 | 0.1190 | 0.0000 | 308.2679 | 308.2679 | 5.8000e-003 | 6.9300e-003 | 310.4788 |
| **Total** | **0.1255** | **0.9201** | **1.1501** | **6.6900e-003** | **0.5756** | **7.1800e-003** | **0.5828** | **0.1561** | **6.8000e-003** | **0.1629** | **0.0000** | **648.5533** | **648.5533** | **7.1200e-003** | **0.0576** | **665.8834** |

## 3.4 Building Construction - 2031

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1708 | 1.0355 | 2.1085 | 4.0400e-003 | | 0.0193 | 0.0193 | | 0.0193 | 0.0193 | 0.0000 | 343.0336 | 343.0336 | 0.0138 | 0.0000 | 343.3777 |
| **Total** | **0.1708** | **1.0355** | **2.1085** | **4.0400e-003** | | **0.0193** | **0.0193** | | **0.0193** | **0.0193** | **0.0000** | **343.0336** | **343.0336** | **0.0138** | **0.0000** | **343.3777** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2031

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0193 | 0.8602 | 0.2429 | 3.4900e-003 | 0.1333 | 5.5800e-003 | 0.1389 | 0.0385 | 5.3400e-003 | 0.0438 | 0.0000 | 334.6799 | 334.6799 | 1.2900e-003 | 0.0498 | 349.5415 |
| Worker | 0.0991 | 0.0536 | 0.8717 | 3.0800e-003 | 0.4424 | 1.4700e-003 | 0.4438 | 0.1176 | 1.3500e-003 | 0.1189 | 0.0000 | 303.7312 | 303.7312 | 5.3800e-003 | 6.7000e-003 | 305.8623 |
| **Total** | **0.1184** | **0.9137** | **1.1146** | **6.5700e-003** | **0.5756** | **7.0500e-003** | **0.5827** | **0.1561** | **6.6900e-003** | **0.1628** | **0.0000** | **638.4110** | **638.4110** | **6.6700e-003** | **0.0565** | **655.4038** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1708 | 1.0355 | 2.1085 | 4.0400e-003 | | 0.0193 | 0.0193 | | 0.0193 | 0.0193 | 0.0000 | 343.0332 | 343.0332 | 0.0138 | 0.0000 | 343.3773 |
| **Total** | **0.1708** | **1.0355** | **2.1085** | **4.0400e-003** | | **0.0193** | **0.0193** | | **0.0193** | **0.0193** | **0.0000** | **343.0332** | **343.0332** | **0.0138** | **0.0000** | **343.3773** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2031

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0193 | 0.8602 | 0.2429 | 3.4900e-003 | 0.1333 | 5.5800e-003 | 0.1389 | 0.0385 | 5.3400e-003 | 0.0438 | 0.0000 | 334.6799 | 334.6799 | 1.2900e-003 | 0.0498 | 349.5415 |
| Worker | 0.0991 | 0.0536 | 0.8717 | 3.0800e-003 | 0.4424 | 1.4700e-003 | 0.4438 | 0.1176 | 1.3500e-003 | 0.1189 | 0.0000 | 303.7312 | 303.7312 | 5.3800e-003 | 6.7000e-003 | 305.8623 |
| **Total** | **0.1184** | **0.9137** | **1.1146** | **6.5700e-003** | **0.5756** | **7.0500e-003** | **0.5827** | **0.1561** | **6.6900e-003** | **0.1628** | **0.0000** | **638.4110** | **638.4110** | **6.6700e-003** | **0.0565** | **655.4038** |

## 3.4 Building Construction - 2032

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1715 | 1.0394 | 2.1166 | 4.0600e-003 | | 0.0194 | 0.0194 | | 0.0194 | 0.0194 | 0.0000 | 344.3479 | 344.3479 | 0.0138 | 0.0000 | 344.6933 |
| **Total** | **0.1715** | **1.0394** | **2.1166** | **4.0600e-003** | | **0.0194** | **0.0194** | | **0.0194** | **0.0194** | **0.0000** | **344.3479** | **344.3479** | **0.0138** | **0.0000** | **344.6933** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2032

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0192 | 0.8614 | 0.2432 | 3.4500e-003 | 0.1338 | 5.5800e-003 | 0.1394 | 0.0387 | 5.3300e-003 | 0.0440 | 0.0000 | 330.9979 | 330.9979 | 1.2800e-003 | 0.0492 | 345.6891 |
| Worker | 0.0934 | 0.0505 | 0.8461 | 3.0300e-003 | 0.4441 | 1.3800e-003 | 0.4454 | 0.1180 | 1.2700e-003 | 0.1193 | 0.0000 | 300.9067 | 300.9067 | 5.0300e-003 | 6.5400e-003 | 302.9808 |
| **Total** | **0.1126** | **0.9119** | **1.0893** | **6.4800e-003** | **0.5778** | **6.9600e-003** | **0.5848** | **0.1567** | **6.6000e-003** | **0.1633** | **0.0000** | **631.9045** | **631.9045** | **6.3100e-003** | **0.0557** | **648.6699** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1715 | 1.0394 | 2.1166 | 4.0600e-003 | | 0.0194 | 0.0194 | | 0.0194 | 0.0194 | 0.0000 | 344.3475 | 344.3475 | 0.0138 | 0.0000 | 344.6929 |
| **Total** | **0.1715** | **1.0394** | **2.1166** | **4.0600e-003** | | **0.0194** | **0.0194** | | **0.0194** | **0.0194** | **0.0000** | **344.3475** | **344.3475** | **0.0138** | **0.0000** | **344.6929** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2032

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0192 | 0.8614 | 0.2432 | 3.4500e-003 | 0.1338 | 5.5800e-003 | 0.1394 | 0.0387 | 5.3300e-003 | 0.0440 | 0.0000 | 330.9979 | 330.9979 | 1.2800e-003 | 0.0492 | 345.6891 |
| Worker | 0.0934 | 0.0505 | 0.8461 | 3.0300e-003 | 0.4441 | 1.3800e-003 | 0.4454 | 0.1180 | 1.2700e-003 | 0.1193 | 0.0000 | 300.9067 | 300.9067 | 5.0300e-003 | 6.5400e-003 | 302.9808 |
| **Total** | **0.1126** | **0.9119** | **1.0893** | **6.4800e-003** | **0.5778** | **6.9600e-003** | **0.5848** | **0.1567** | **6.6000e-003** | **0.1633** | **0.0000** | **631.9045** | **631.9045** | **6.3100e-003** | **0.0557** | **648.6699** |

## 3.4 Building Construction - 2033

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1702 | 1.0315 | 2.1004 | 4.0200e-003 | | 0.0193 | 0.0193 | | 0.0193 | 0.0193 | 0.0000 | 341.7193 | 341.7193 | 0.0137 | 0.0000 | 342.0621 |
| **Total** | **0.1702** | **1.0315** | **2.1004** | **4.0200e-003** | | **0.0193** | **0.0193** | | **0.0193** | **0.0193** | **0.0000** | **341.7193** | **341.7193** | **0.0137** | **0.0000** | **342.0621** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2033

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0190 | 0.8532 | 0.2413 | 3.3800e-003 | 0.1328 | 5.5100e-003 | 0.1383 | 0.0384 | 5.2700e-003 | 0.0436 | 0.0000 | 324.1383 | 324.1383 | 1.2600e-003 | 0.0482 | 338.5196 |
| Worker | 0.0873 | 0.0475 | 0.8148 | 2.9600e-003 | 0.4407 | 1.2900e-003 | 0.4420 | 0.1171 | 1.1900e-003 | 0.1183 | 0.0000 | 295.1232 | 295.1232 | 4.6700e-003 | 6.3400e-003 | 297.1280 |
| **Total** | **0.1062** | **0.9006** | **1.0561** | **6.3400e-003** | **0.5734** | **6.8000e-003** | **0.5802** | **0.1555** | **6.4600e-003** | **0.1619** | **0.0000** | **619.2614** | **619.2614** | **5.9300e-003** | **0.0545** | **635.6476** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1702 | 1.0315 | 2.1004 | 4.0200e-003 | | 0.0193 | 0.0193 | | 0.0193 | 0.0193 | 0.0000 | 341.7189 | 341.7189 | 0.0137 | 0.0000 | 342.0617 |
| **Total** | **0.1702** | **1.0315** | **2.1004** | **4.0200e-003** | | **0.0193** | **0.0193** | | **0.0193** | **0.0193** | **0.0000** | **341.7189** | **341.7189** | **0.0137** | **0.0000** | **342.0617** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2033

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0190 | 0.8532 | 0.2413 | 3.3800e-003 | 0.1328 | 5.5100e-003 | 0.1383 | 0.0384 | 5.2700e-003 | 0.0436 | 0.0000 | 324.1383 | 324.1383 | 1.2600e-003 | 0.0482 | 338.5196 |
| Worker | 0.0873 | 0.0475 | 0.8148 | 2.9600e-003 | 0.4407 | 1.2900e-003 | 0.4420 | 0.1171 | 1.1900e-003 | 0.1183 | 0.0000 | 295.1232 | 295.1232 | 4.6700e-003 | 6.3400e-003 | 297.1280 |
| **Total** | **0.1062** | **0.9006** | **1.0561** | **6.3400e-003** | **0.5734** | **6.8000e-003** | **0.5802** | **0.1555** | **6.4600e-003** | **0.1619** | **0.0000** | **619.2614** | **619.2614** | **5.9300e-003** | **0.0545** | **635.6476** |

## 3.4 Building Construction - 2034

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1702 | 1.0315 | 2.1004 | 4.0200e-003 | | 0.0193 | 0.0193 | | 0.0193 | 0.0193 | 0.0000 | 341.7193 | 341.7193 | 0.0137 | 0.0000 | 342.0621 |
| **Total** | **0.1702** | **1.0315** | **2.1004** | **4.0200e-003** | | **0.0193** | **0.0193** | | **0.0193** | **0.0193** | **0.0000** | **341.7193** | **341.7193** | **0.0137** | **0.0000** | **342.0621** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2034

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0189 | 0.8511 | 0.2414 | 3.3400e-003 | 0.1328 | 5.4900e-003 | 0.1382 | 0.0384 | 5.2500e-003 | 0.0436 | 0.0000 | 320.2130 | 320.2130 | 1.2500e-003 | 0.0476 | 334.4153 |
| Worker | 0.0825 | 0.0453 | 0.7930 | 2.9100e-003 | 0.4407 | 1.2100e-003 | 0.4419 | 0.1171 | 1.1200e-003 | 0.1182 | 0.0000 | 292.0671 | 292.0671 | 4.3800e-003 | 6.2100e-003 | 294.0281 |
| **Total** | **0.1014** | **0.8965** | **1.0344** | **6.2500e-003** | **0.5734** | **6.7000e-003** | **0.5801** | **0.1555** | **6.3700e-003** | **0.1618** | **0.0000** | **612.2801** | **612.2801** | **5.6300e-003** | **0.0538** | **628.4434** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1702 | 1.0315 | 2.1004 | 4.0200e-003 | | 0.0193 | 0.0193 | | 0.0193 | 0.0193 | 0.0000 | 341.7189 | 341.7189 | 0.0137 | 0.0000 | 342.0617 |
| **Total** | **0.1702** | **1.0315** | **2.1004** | **4.0200e-003** | | **0.0193** | **0.0193** | | **0.0193** | **0.0193** | **0.0000** | **341.7189** | **341.7189** | **0.0137** | **0.0000** | **342.0617** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2034

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0189 | 0.8511 | 0.2414 | 3.3400e-003 | 0.1328 | 5.4900e-003 | 0.1382 | 0.0384 | 5.2500e-003 | 0.0436 | 0.0000 | 320.2130 | 320.2130 | 1.2500e-003 | 0.0476 | 334.4153 |
| Worker | 0.0825 | 0.0453 | 0.7930 | 2.9100e-003 | 0.4407 | 1.2100e-003 | 0.4419 | 0.1171 | 1.1200e-003 | 0.1182 | 0.0000 | 292.0671 | 292.0671 | 4.3800e-003 | 6.2100e-003 | 294.0281 |
| **Total** | **0.1014** | **0.8965** | **1.0344** | **6.2500e-003** | **0.5734** | **6.7000e-003** | **0.5801** | **0.1555** | **6.3700e-003** | **0.1618** | **0.0000** | **612.2801** | **612.2801** | **5.6300e-003** | **0.0538** | **628.4434** |

## 3.4 Building Construction - 2035

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1120 | 0.6588 | 1.4828 | 2.8500e-003 | | 8.3200e-003 | 8.3200e-003 | | 8.3200e-003 | 8.3200e-003 | 0.0000 | 241.8321 | 241.8321 | 9.0100e-003 | 0.0000 | 242.0573 |
| **Total** | **0.1120** | **0.6588** | **1.4828** | **2.8500e-003** | | **8.3200e-003** | **8.3200e-003** | | **8.3200e-003** | **8.3200e-003** | **0.0000** | **241.8321** | **241.8321** | **9.0100e-003** | **0.0000** | **242.0573** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2035

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0134 | 0.6006 | 0.1709 | 2.3400e-003 | 0.0940 | 3.8600e-003 | 0.0978 | 0.0271 | 3.6900e-003 | 0.0308 | 0.0000 | 224.1410 | 224.1410 | 8.8000e-004 | 0.0333 | 234.0792 |
| Worker | 0.0554 | 0.0309 | 0.5481 | 2.0300e-003 | 0.3119 | 8.1000e-004 | 0.3127 | 0.0829 | 7.4000e-004 | 0.0836 | 0.0000 | 204.8309 | 204.8309 | 2.9300e-003 | 4.3300e-003 | 206.1940 |
| **Total** | **0.0687** | **0.6315** | **0.7190** | **4.3700e-003** | **0.4058** | **4.6700e-003** | **0.4105** | **0.1100** | **4.4300e-003** | **0.1145** | **0.0000** | **428.9719** | **428.9719** | **3.8100e-003** | **0.0376** | **440.2732** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1120 | 0.6588 | 1.4828 | 2.8500e-003 | | 8.3200e-003 | 8.3200e-003 | | 8.3200e-003 | 8.3200e-003 | 0.0000 | 241.8319 | 241.8319 | 9.0100e-003 | 0.0000 | 242.0570 |
| **Total** | **0.1120** | **0.6588** | **1.4828** | **2.8500e-003** | | **8.3200e-003** | **8.3200e-003** | | **8.3200e-003** | **8.3200e-003** | **0.0000** | **241.8319** | **241.8319** | **9.0100e-003** | **0.0000** | **242.0570** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2035

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0134 | 0.6006 | 0.1709 | 2.3400e-003 | 0.0940 | 3.8600e-003 | 0.0978 | 0.0271 | 3.6900e-003 | 0.0308 | 0.0000 | 224.1410 | 224.1410 | 8.8000e-004 | 0.0333 | 234.0792 |
| Worker | 0.0554 | 0.0309 | 0.5481 | 2.0300e-003 | 0.3119 | 8.1000e-004 | 0.3127 | 0.0829 | 7.4000e-004 | 0.0836 | 0.0000 | 204.8309 | 204.8309 | 2.9300e-003 | 4.3300e-003 | 206.1940 |
| **Total** | **0.0687** | **0.6315** | **0.7190** | **4.3700e-003** | **0.4058** | **4.6700e-003** | **0.4105** | **0.1100** | **4.4300e-003** | **0.1145** | **0.0000** | **428.9719** | **428.9719** | **3.8100e-003** | **0.0376** | **440.2732** |

## 3.5 Paving - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 3.3100e-003 | 0.0334 | 0.0437 | 7.0000e-005 | | 1.7000e-003 | 1.7000e-003 | | 1.5700e-003 | 1.5700e-003 | 0.0000 | 6.0083 | 6.0083 | 1.9400e-003 | 0.0000 | 6.0569 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **3.3100e-003** | **0.0334** | **0.0437** | **7.0000e-005** | | **1.7000e-003** | **1.7000e-003** | | **1.5700e-003** | **1.5700e-003** | **0.0000** | **6.0083** | **6.0083** | **1.9400e-003** | **0.0000** | **6.0569** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Paving - 2022

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.5000e-004 | 1.1000e-004 | 1.2300e-003 | 0.0000 | 3.6000e-004 | 0.0000 | 3.6000e-004 | 1.0000e-004 | 0.0000 | 1.0000e-004 | 0.0000 | 0.2992 | 0.2992 | 1.0000e-005 | 1.0000e-005 | 0.3022 |
| **Total** | **1.5000e-004** | **1.1000e-004** | **1.2300e-003** | **0.0000** | **3.6000e-004** | **0.0000** | **3.6000e-004** | **1.0000e-004** | **0.0000** | **1.0000e-004** | **0.0000** | **0.2992** | **0.2992** | **1.0000e-005** | **1.0000e-005** | **0.3022** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 3.3100e-003 | 0.0334 | 0.0437 | 7.0000e-005 | | 1.7000e-003 | 1.7000e-003 | | 1.5700e-003 | 1.5700e-003 | 0.0000 | 6.0083 | 6.0083 | 1.9400e-003 | 0.0000 | 6.0568 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **3.3100e-003** | **0.0334** | **0.0437** | **7.0000e-005** | | **1.7000e-003** | **1.7000e-003** | | **1.5700e-003** | **1.5700e-003** | **0.0000** | **6.0083** | **6.0083** | **1.9400e-003** | **0.0000** | **6.0568** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Paving - 2022

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.5000e-004 | 1.1000e-004 | 1.2300e-003 | 0.0000 | 3.6000e-004 | 0.0000 | 3.6000e-004 | 1.0000e-004 | 0.0000 | 1.0000e-004 | 0.0000 | 0.2992 | 0.2992 | 1.0000e-005 | 1.0000e-005 | 0.3022 |
| **Total** | **1.5000e-004** | **1.1000e-004** | **1.2300e-003** | **0.0000** | **3.6000e-004** | **0.0000** | **3.6000e-004** | **1.0000e-004** | **0.0000** | **1.0000e-004** | **0.0000** | **0.2992** | **0.2992** | **1.0000e-005** | **1.0000e-005** | **0.3022** |

## 3.5 Paving - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1105 | 1.0905 | 1.5605 | 2.4400e-003 | | 0.0546 | 0.0546 | | 0.0502 | 0.0502 | 0.0000 | 214.2875 | 214.2875 | 0.0693 | 0.0000 | 216.0201 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.1105** | **1.0905** | **1.5605** | **2.4400e-003** | | **0.0546** | **0.0546** | | **0.0502** | **0.0502** | **0.0000** | **214.2875** | **214.2875** | **0.0693** | **0.0000** | **216.0201** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Paving - 2023

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 5.0400e-003 | 3.3800e-003 | 0.0399 | 1.1000e-004 | 0.0128 | 7.0000e-005 | 0.0129 | 3.4100e-003 | 6.0000e-005 | 3.4700e-003 | 0.0000 | 10.3909 | 10.3909 | 3.2000e-004 | 3.0000e-004 | 10.4890 |
| **Total** | **5.0400e-003** | **3.3800e-003** | **0.0399** | **1.1000e-004** | **0.0128** | **7.0000e-005** | **0.0129** | **3.4100e-003** | **6.0000e-005** | **3.4700e-003** | **0.0000** | **10.3909** | **10.3909** | **3.2000e-004** | **3.0000e-004** | **10.4890** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1105 | 1.0905 | 1.5605 | 2.4400e-003 | | 0.0546 | 0.0546 | | 0.0502 | 0.0502 | 0.0000 | 214.2872 | 214.2872 | 0.0693 | 0.0000 | 216.0198 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.1105** | **1.0905** | **1.5605** | **2.4400e-003** | | **0.0546** | **0.0546** | | **0.0502** | **0.0502** | **0.0000** | **214.2872** | **214.2872** | **0.0693** | **0.0000** | **216.0198** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Paving - 2023

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 5.0400e-003 | 3.3800e-003 | 0.0399 | 1.1000e-004 | 0.0128 | 7.0000e-005 | 0.0129 | 3.4100e-003 | 6.0000e-005 | 3.4700e-003 | 0.0000 | 10.3909 | 10.3909 | 3.2000e-004 | 3.0000e-004 | 10.4890 |
| **Total** | **5.0400e-003** | **3.3800e-003** | **0.0399** | **1.1000e-004** | **0.0128** | **7.0000e-005** | **0.0129** | **3.4100e-003** | **6.0000e-005** | **3.4700e-003** | **0.0000** | **10.3909** | **10.3909** | **3.2000e-004** | **3.0000e-004** | **10.4890** |

## 3.6 Architectural Coating - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.0695 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.4500e-003 | 0.0235 | 0.0326 | 5.0000e-005 | | 1.2700e-003 | 1.2700e-003 | | 1.2700e-003 | 1.2700e-003 | 0.0000 | 4.5959 | 4.5959 | 2.7000e-004 | 0.0000 | 4.6027 |
| **Total** | **0.0729** | **0.0235** | **0.0326** | **5.0000e-005** | | **1.2700e-003** | **1.2700e-003** | | **1.2700e-003** | **1.2700e-003** | **0.0000** | **4.5959** | **4.5959** | **2.7000e-004** | **0.0000** | **4.6027** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2023

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.8000e-003 | 3.2200e-003 | 0.0381 | 1.1000e-004 | 0.0122 | 6.0000e-005 | 0.0123 | 3.2500e-003 | 6.0000e-005 | 3.3100e-003 | 0.0000 | 9.9053 | 9.9053 | 3.1000e-004 | 2.9000e-004 | 9.9989 |
| **Total** | **4.8000e-003** | **3.2200e-003** | **0.0381** | **1.1000e-004** | **0.0122** | **6.0000e-005** | **0.0123** | **3.2500e-003** | **6.0000e-005** | **3.3100e-003** | **0.0000** | **9.9053** | **9.9053** | **3.1000e-004** | **2.9000e-004** | **9.9989** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.0695 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.4500e-003 | 0.0235 | 0.0326 | 5.0000e-005 | | 1.2700e-003 | 1.2700e-003 | | 1.2700e-003 | 1.2700e-003 | 0.0000 | 4.5959 | 4.5959 | 2.7000e-004 | 0.0000 | 4.6027 |
| **Total** | **0.0729** | **0.0235** | **0.0326** | **5.0000e-005** | | **1.2700e-003** | **1.2700e-003** | | **1.2700e-003** | **1.2700e-003** | **0.0000** | **4.5959** | **4.5959** | **2.7000e-004** | **0.0000** | **4.6027** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2023

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.8000e-003 | 3.2200e-003 | 0.0381 | 1.1000e-004 | 0.0122 | 6.0000e-005 | 0.0123 | 3.2500e-003 | 6.0000e-005 | 3.3100e-003 | 0.0000 | 9.9053 | 9.9053 | 3.1000e-004 | 2.9000e-004 | 9.9989 |
| **Total** | **4.8000e-003** | **3.2200e-003** | **0.0381** | **1.1000e-004** | **0.0122** | **6.0000e-005** | **0.0123** | **3.2500e-003** | **6.0000e-005** | **3.3100e-003** | **0.0000** | **9.9053** | **9.9053** | **3.1000e-004** | **2.9000e-004** | **9.9989** |

## 3.6 Architectural Coating - 2024

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.5055 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0237 | 0.1597 | 0.2371 | 3.9000e-004 | | 7.9800e-003 | 7.9800e-003 | | 7.9800e-003 | 7.9800e-003 | 0.0000 | 33.4476 | 33.4476 | 1.8800e-003 | 0.0000 | 33.4947 |
| **Total** | **0.5291** | **0.1597** | **0.2371** | **3.9000e-004** | | **7.9800e-003** | **7.9800e-003** | | **7.9800e-003** | **7.9800e-003** | **0.0000** | **33.4476** | **33.4476** | **1.8800e-003** | **0.0000** | **33.4947** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2024

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0322 | 0.0207 | 0.2562 | 7.5000e-004 | 0.0890 | 4.5000e-004 | 0.0895 | 0.0237 | 4.1000e-004 | 0.0241 | 0.0000 | 70.2812 | 70.2812 | 2.0200e-003 | 1.9400e-003 | 70.9086 |
| **Total** | **0.0322** | **0.0207** | **0.2562** | **7.5000e-004** | **0.0890** | **4.5000e-004** | **0.0895** | **0.0237** | **4.1000e-004** | **0.0241** | **0.0000** | **70.2812** | **70.2812** | **2.0200e-003** | **1.9400e-003** | **70.9086** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.5055 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0237 | 0.1597 | 0.2371 | 3.9000e-004 | | 7.9800e-003 | 7.9800e-003 | | 7.9800e-003 | 7.9800e-003 | 0.0000 | 33.4476 | 33.4476 | 1.8800e-003 | 0.0000 | 33.4947 |
| **Total** | **0.5291** | **0.1597** | **0.2371** | **3.9000e-004** | | **7.9800e-003** | **7.9800e-003** | | **7.9800e-003** | **7.9800e-003** | **0.0000** | **33.4476** | **33.4476** | **1.8800e-003** | **0.0000** | **33.4947** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2024

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0322 | 0.0207 | 0.2562 | 7.5000e-004 | 0.0890 | 4.5000e-004 | 0.0895 | 0.0237 | 4.1000e-004 | 0.0241 | 0.0000 | 70.2812 | 70.2812 | 2.0200e-003 | 1.9400e-003 | 70.9086 |
| **Total** | **0.0322** | **0.0207** | **0.2562** | **7.5000e-004** | **0.0890** | **4.5000e-004** | **0.0895** | **0.0237** | **4.1000e-004** | **0.0241** | **0.0000** | **70.2812** | **70.2812** | **2.0200e-003** | **1.9400e-003** | **70.9086** |

## 3.6 Architectural Coating - 2025

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.5035 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0223 | 0.1495 | 0.2361 | 3.9000e-004 | | 6.7200e-003 | 6.7200e-003 | | 6.7200e-003 | 6.7200e-003 | 0.0000 | 33.3200 | 33.3200 | 1.8200e-003 | 0.0000 | 33.3654 |
| **Total** | **0.5258** | **0.1495** | **0.2361** | **3.9000e-004** | | **6.7200e-003** | **6.7200e-003** | | **6.7200e-003** | **6.7200e-003** | **0.0000** | **33.3200** | **33.3200** | **1.8200e-003** | **0.0000** | **33.3654** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2025

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0298 | 0.0183 | 0.2368 | 7.2000e-004 | 0.0887 | 4.2000e-004 | 0.0891 | 0.0236 | 3.9000e-004 | 0.0240 | 0.0000 | 68.3156 | 68.3156 | 1.8100e-003 | 1.7900e-003 | 68.8949 |
| **Total** | **0.0298** | **0.0183** | **0.2368** | **7.2000e-004** | **0.0887** | **4.2000e-004** | **0.0891** | **0.0236** | **3.9000e-004** | **0.0240** | **0.0000** | **68.3156** | **68.3156** | **1.8100e-003** | **1.7900e-003** | **68.8949** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.5035 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0223 | 0.1495 | 0.2361 | 3.9000e-004 | | 6.7200e-003 | 6.7200e-003 | | 6.7200e-003 | 6.7200e-003 | 0.0000 | 33.3199 | 33.3199 | 1.8200e-003 | 0.0000 | 33.3654 |
| **Total** | **0.5258** | **0.1495** | **0.2361** | **3.9000e-004** | | **6.7200e-003** | **6.7200e-003** | | **6.7200e-003** | **6.7200e-003** | **0.0000** | **33.3199** | **33.3199** | **1.8200e-003** | **0.0000** | **33.3654** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2025

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0298 | 0.0183 | 0.2368 | 7.2000e-004 | 0.0887 | 4.2000e-004 | 0.0891 | 0.0236 | 3.9000e-004 | 0.0240 | 0.0000 | 68.3156 | 68.3156 | 1.8100e-003 | 1.7900e-003 | 68.8949 |
| **Total** | **0.0298** | **0.0183** | **0.2368** | **7.2000e-004** | **0.0887** | **4.2000e-004** | **0.0891** | **0.0236** | **3.9000e-004** | **0.0240** | **0.0000** | **68.3156** | **68.3156** | **1.8100e-003** | **1.7900e-003** | **68.8949** |

## 3.6 Architectural Coating - 2026

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.5035 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0223 | 0.1495 | 0.2361 | 3.9000e-004 | | 6.7200e-003 | 6.7200e-003 | | 6.7200e-003 | 6.7200e-003 | 0.0000 | 33.3200 | 33.3200 | 1.8200e-003 | 0.0000 | 33.3654 |
| **Total** | **0.5258** | **0.1495** | **0.2361** | **3.9000e-004** | | **6.7200e-003** | **6.7200e-003** | | **6.7200e-003** | **6.7200e-003** | **0.0000** | **33.3200** | **33.3200** | **1.8200e-003** | **0.0000** | **33.3654** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2026

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0277 | 0.0164 | 0.2226 | 7.0000e-004 | 0.0887 | 4.1000e-004 | 0.0891 | 0.0236 | 3.7000e-004 | 0.0239 | 0.0000 | 66.7653 | 66.7653 | 1.6400e-003 | 1.6800e-003 | 67.3071 |
| **Total** | **0.0277** | **0.0164** | **0.2226** | **7.0000e-004** | **0.0887** | **4.1000e-004** | **0.0891** | **0.0236** | **3.7000e-004** | **0.0239** | **0.0000** | **66.7653** | **66.7653** | **1.6400e-003** | **1.6800e-003** | **67.3071** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.5035 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0223 | 0.1495 | 0.2361 | 3.9000e-004 | | 6.7200e-003 | 6.7200e-003 | | 6.7200e-003 | 6.7200e-003 | 0.0000 | 33.3199 | 33.3199 | 1.8200e-003 | 0.0000 | 33.3654 |
| **Total** | **0.5258** | **0.1495** | **0.2361** | **3.9000e-004** | | **6.7200e-003** | **6.7200e-003** | | **6.7200e-003** | **6.7200e-003** | **0.0000** | **33.3199** | **33.3199** | **1.8200e-003** | **0.0000** | **33.3654** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2026

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0277 | 0.0164 | 0.2226 | 7.0000e-004 | 0.0887 | 4.1000e-004 | 0.0891 | 0.0236 | 3.7000e-004 | 0.0239 | 0.0000 | 66.7653 | 66.7653 | 1.6400e-003 | 1.6800e-003 | 67.3071 |
| **Total** | **0.0277** | **0.0164** | **0.2226** | **7.0000e-004** | **0.0887** | **4.1000e-004** | **0.0891** | **0.0236** | **3.7000e-004** | **0.0239** | **0.0000** | **66.7653** | **66.7653** | **1.6400e-003** | **1.6800e-003** | **67.3071** |

## 3.6 Architectural Coating - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.5035 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0223 | 0.1495 | 0.2361 | 3.9000e-004 | | 6.7200e-003 | 6.7200e-003 | | 6.7200e-003 | 6.7200e-003 | 0.0000 | 33.3200 | 33.3200 | 1.8200e-003 | 0.0000 | 33.3654 |
| **Total** | **0.5258** | **0.1495** | **0.2361** | **3.9000e-004** | | **6.7200e-003** | **6.7200e-003** | | **6.7200e-003** | **6.7200e-003** | **0.0000** | **33.3200** | **33.3200** | **1.8200e-003** | **0.0000** | **33.3654** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2027

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0259 | 0.0149 | 0.2096 | 6.8000e-004 | 0.0887 | 3.8000e-004 | 0.0891 | 0.0236 | 3.5000e-004 | 0.0239 | 0.0000 | 65.2939 | 65.2939 | 1.5000e-003 | 1.5900e-003 | 65.8042 |
| **Total** | **0.0259** | **0.0149** | **0.2096** | **6.8000e-004** | **0.0887** | **3.8000e-004** | **0.0891** | **0.0236** | **3.5000e-004** | **0.0239** | **0.0000** | **65.2939** | **65.2939** | **1.5000e-003** | **1.5900e-003** | **65.8042** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.5035 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0223 | 0.1495 | 0.2361 | 3.9000e-004 | | 6.7200e-003 | 6.7200e-003 | | 6.7200e-003 | 6.7200e-003 | 0.0000 | 33.3199 | 33.3199 | 1.8200e-003 | 0.0000 | 33.3654 |
| **Total** | **0.5258** | **0.1495** | **0.2361** | **3.9000e-004** | | **6.7200e-003** | **6.7200e-003** | | **6.7200e-003** | **6.7200e-003** | **0.0000** | **33.3199** | **33.3199** | **1.8200e-003** | **0.0000** | **33.3654** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2027

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0259 | 0.0149 | 0.2096 | 6.8000e-004 | 0.0887 | 3.8000e-004 | 0.0891 | 0.0236 | 3.5000e-004 | 0.0239 | 0.0000 | 65.2939 | 65.2939 | 1.5000e-003 | 1.5900e-003 | 65.8042 |
| **Total** | **0.0259** | **0.0149** | **0.2096** | **6.8000e-004** | **0.0887** | **3.8000e-004** | **0.0891** | **0.0236** | **3.5000e-004** | **0.0239** | **0.0000** | **65.2939** | **65.2939** | **1.5000e-003** | **1.5900e-003** | **65.8042** |

## 3.6 Architectural Coating - 2028

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.5016 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0222 | 0.1489 | 0.2352 | 3.9000e-004 | | 6.7000e-003 | 6.7000e-003 | | 6.7000e-003 | 6.7000e-003 | 0.0000 | 33.1923 | 33.1923 | 1.8100e-003 | 0.0000 | 33.2376 |
| **Total** | **0.5238** | **0.1489** | **0.2352** | **3.9000e-004** | | **6.7000e-003** | **6.7000e-003** | | **6.7000e-003** | **6.7000e-003** | **0.0000** | **33.1923** | **33.1923** | **1.8100e-003** | **0.0000** | **33.2376** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2028

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0242 | 0.0135 | 0.1980 | 6.6000e-004 | 0.0883 | 3.6000e-004 | 0.0887 | 0.0235 | 3.3000e-004 | 0.0238 | 0.0000 | 63.7428 | 63.7428 | 1.3600e-003 | 1.5000e-003 | 64.2249 |
| **Total** | **0.0242** | **0.0135** | **0.1980** | **6.6000e-004** | **0.0883** | **3.6000e-004** | **0.0887** | **0.0235** | **3.3000e-004** | **0.0238** | **0.0000** | **63.7428** | **63.7428** | **1.3600e-003** | **1.5000e-003** | **64.2249** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.5016 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0222 | 0.1489 | 0.2352 | 3.9000e-004 | | 6.7000e-003 | 6.7000e-003 | | 6.7000e-003 | 6.7000e-003 | 0.0000 | 33.1923 | 33.1923 | 1.8100e-003 | 0.0000 | 33.2375 |
| **Total** | **0.5238** | **0.1489** | **0.2352** | **3.9000e-004** | | **6.7000e-003** | **6.7000e-003** | | **6.7000e-003** | **6.7000e-003** | **0.0000** | **33.1923** | **33.1923** | **1.8100e-003** | **0.0000** | **33.2375** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2028

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0242 | 0.0135 | 0.1980 | 6.6000e-004 | 0.0883 | 3.6000e-004 | 0.0887 | 0.0235 | 3.3000e-004 | 0.0238 | 0.0000 | 63.7428 | 63.7428 | 1.3600e-003 | 1.5000e-003 | 64.2249 |
| **Total** | **0.0242** | **0.0135** | **0.1980** | **6.6000e-004** | **0.0883** | **3.6000e-004** | **0.0887** | **0.0235** | **3.3000e-004** | **0.0238** | **0.0000** | **63.7428** | **63.7428** | **1.3600e-003** | **1.5000e-003** | **64.2249** |

## 3.6 Architectural Coating - 2029

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.5035 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0223 | 0.1495 | 0.2361 | 3.9000e-004 | | 6.7200e-003 | 6.7200e-003 | | 6.7200e-003 | 6.7200e-003 | 0.0000 | 33.3200 | 33.3200 | 1.8200e-003 | 0.0000 | 33.3654 |
| **Total** | **0.5258** | **0.1495** | **0.2361** | **3.9000e-004** | | **6.7200e-003** | **6.7200e-003** | | **6.7200e-003** | **6.7200e-003** | **0.0000** | **33.3200** | **33.3200** | **1.8200e-003** | **0.0000** | **33.3654** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2029

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0227 | 0.0125 | 0.1895 | 6.4000e-004 | 0.0887 | 3.4000e-004 | 0.0890 | 0.0236 | 3.1000e-004 | 0.0239 | 0.0000 | 62.8219 | 62.8219 | 1.2600e-003 | 1.4400e-003 | 63.2837 |
| **Total** | **0.0227** | **0.0125** | **0.1895** | **6.4000e-004** | **0.0887** | **3.4000e-004** | **0.0890** | **0.0236** | **3.1000e-004** | **0.0239** | **0.0000** | **62.8219** | **62.8219** | **1.2600e-003** | **1.4400e-003** | **63.2837** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.5035 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0223 | 0.1495 | 0.2361 | 3.9000e-004 | | 6.7200e-003 | 6.7200e-003 | | 6.7200e-003 | 6.7200e-003 | 0.0000 | 33.3199 | 33.3199 | 1.8200e-003 | 0.0000 | 33.3654 |
| **Total** | **0.5258** | **0.1495** | **0.2361** | **3.9000e-004** | | **6.7200e-003** | **6.7200e-003** | | **6.7200e-003** | **6.7200e-003** | **0.0000** | **33.3199** | **33.3199** | **1.8200e-003** | **0.0000** | **33.3654** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2029

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0227 | 0.0125 | 0.1895 | 6.4000e-004 | 0.0887 | 3.4000e-004 | 0.0890 | 0.0236 | 3.1000e-004 | 0.0239 | 0.0000 | 62.8219 | 62.8219 | 1.2600e-003 | 1.4400e-003 | 63.2837 |
| **Total** | **0.0227** | **0.0125** | **0.1895** | **6.4000e-004** | **0.0887** | **3.4000e-004** | **0.0890** | **0.0236** | **3.1000e-004** | **0.0239** | **0.0000** | **62.8219** | **62.8219** | **1.2600e-003** | **1.4400e-003** | **63.2837** |

## 3.6 Architectural Coating - 2030

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.5035 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0171 | 0.1117 | 0.2346 | 3.9000e-004 | | 2.6500e-003 | 2.6500e-003 | | 2.6500e-003 | 2.6500e-003 | 0.0000 | 33.3200 | 33.3200 | 1.3500e-003 | 0.0000 | 33.3537 |
| **Total** | **0.5206** | **0.1117** | **0.2346** | **3.9000e-004** | | **2.6500e-003** | **2.6500e-003** | | **2.6500e-003** | **2.6500e-003** | **0.0000** | **33.3200** | **33.3200** | **1.3500e-003** | **0.0000** | **33.3537** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2030

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0213 | 0.0115 | 0.1816 | 6.3000e-004 | 0.0887 | 3.1000e-004 | 0.0890 | 0.0236 | 2.9000e-004 | 0.0239 | 0.0000 | 61.7990 | 61.7990 | 1.1600e-003 | 1.3900e-003 | 62.2422 |
| **Total** | **0.0213** | **0.0115** | **0.1816** | **6.3000e-004** | **0.0887** | **3.1000e-004** | **0.0890** | **0.0236** | **2.9000e-004** | **0.0239** | **0.0000** | **61.7990** | **61.7990** | **1.1600e-003** | **1.3900e-003** | **62.2422** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.5035 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0171 | 0.1117 | 0.2346 | 3.9000e-004 | | 2.6500e-003 | 2.6500e-003 | | 2.6500e-003 | 2.6500e-003 | 0.0000 | 33.3199 | 33.3199 | 1.3500e-003 | 0.0000 | 33.3536 |
| **Total** | **0.5206** | **0.1117** | **0.2346** | **3.9000e-004** | | **2.6500e-003** | **2.6500e-003** | | **2.6500e-003** | **2.6500e-003** | **0.0000** | **33.3199** | **33.3199** | **1.3500e-003** | **0.0000** | **33.3536** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2030

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0213 | 0.0115 | 0.1816 | 6.3000e-004 | 0.0887 | 3.1000e-004 | 0.0890 | 0.0236 | 2.9000e-004 | 0.0239 | 0.0000 | 61.7990 | 61.7990 | 1.1600e-003 | 1.3900e-003 | 62.2422 |
| **Total** | **0.0213** | **0.0115** | **0.1816** | **6.3000e-004** | **0.0887** | **3.1000e-004** | **0.0890** | **0.0236** | **2.9000e-004** | **0.0239** | **0.0000** | **61.7990** | **61.7990** | **1.1600e-003** | **1.3900e-003** | **62.2422** |

## 3.6 Architectural Coating - 2031

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.5035 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0171 | 0.1117 | 0.2346 | 3.9000e-004 | | 2.6500e-003 | 2.6500e-003 | | 2.6500e-003 | 2.6500e-003 | 0.0000 | 33.3200 | 33.3200 | 1.3500e-003 | 0.0000 | 33.3537 |
| **Total** | **0.5206** | **0.1117** | **0.2346** | **3.9000e-004** | | **2.6500e-003** | **2.6500e-003** | | **2.6500e-003** | **2.6500e-003** | **0.0000** | **33.3200** | **33.3200** | **1.3500e-003** | **0.0000** | **33.3537** |

## 3.6 Architectural Coating - 2031

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0199 | 0.0107 | 0.1748 | 6.2000e-004 | 0.0887 | 2.9000e-004 | 0.0890 | 0.0236 | 2.7000e-004 | 0.0238 | 0.0000 | 60.8895 | 60.8895 | 1.0800e-003 | 1.3400e-003 | 61.3167 |
| **Total** | **0.0199** | **0.0107** | **0.1748** | **6.2000e-004** | **0.0887** | **2.9000e-004** | **0.0890** | **0.0236** | **2.7000e-004** | **0.0238** | **0.0000** | **60.8895** | **60.8895** | **1.0800e-003** | **1.3400e-003** | **61.3167** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.5035 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0171 | 0.1117 | 0.2346 | 3.9000e-004 | | 2.6500e-003 | 2.6500e-003 | | 2.6500e-003 | 2.6500e-003 | 0.0000 | 33.3199 | 33.3199 | 1.3500e-003 | 0.0000 | 33.3536 |
| **Total** | **0.5206** | **0.1117** | **0.2346** | **3.9000e-004** | | **2.6500e-003** | **2.6500e-003** | | **2.6500e-003** | **2.6500e-003** | **0.0000** | **33.3199** | **33.3199** | **1.3500e-003** | **0.0000** | **33.3536** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2031

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0199 | 0.0107 | 0.1748 | 6.2000e-004 | 0.0887 | 2.9000e-004 | 0.0890 | 0.0236 | 2.7000e-004 | 0.0238 | 0.0000 | 60.8895 | 60.8895 | 1.0800e-003 | 1.3400e-003 | 61.3167 |
| **Total** | **0.0199** | **0.0107** | **0.1748** | **6.2000e-004** | **0.0887** | **2.9000e-004** | **0.0890** | **0.0236** | **2.7000e-004** | **0.0238** | **0.0000** | **60.8895** | **60.8895** | **1.0800e-003** | **1.3400e-003** | **61.3167** |

## 3.6 Architectural Coating - 2032

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.5055 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0171 | 0.1122 | 0.2355 | 3.9000e-004 | | 2.6600e-003 | 2.6600e-003 | | 2.6600e-003 | 2.6600e-003 | 0.0000 | 33.4476 | 33.4476 | 1.3500e-003 | 0.0000 | 33.4815 |
| **Total** | **0.5226** | **0.1122** | **0.2355** | **3.9000e-004** | | **2.6600e-003** | **2.6600e-003** | | **2.6600e-003** | **2.6600e-003** | **0.0000** | **33.4476** | **33.4476** | **1.3500e-003** | **0.0000** | **33.4815** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2032

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0187 | 0.0101 | 0.1696 | 6.1000e-004 | 0.0890 | 2.8000e-004 | 0.0893 | 0.0237 | 2.6000e-004 | 0.0239 | 0.0000 | 60.3233 | 60.3233 | 1.0100e-003 | 1.3100e-003 | 60.7391 |
| **Total** | **0.0187** | **0.0101** | **0.1696** | **6.1000e-004** | **0.0890** | **2.8000e-004** | **0.0893** | **0.0237** | **2.6000e-004** | **0.0239** | **0.0000** | **60.3233** | **60.3233** | **1.0100e-003** | **1.3100e-003** | **60.7391** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.5055 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0171 | 0.1122 | 0.2355 | 3.9000e-004 | | 2.6600e-003 | 2.6600e-003 | | 2.6600e-003 | 2.6600e-003 | 0.0000 | 33.4476 | 33.4476 | 1.3500e-003 | 0.0000 | 33.4814 |
| **Total** | **0.5226** | **0.1122** | **0.2355** | **3.9000e-004** | | **2.6600e-003** | **2.6600e-003** | | **2.6600e-003** | **2.6600e-003** | **0.0000** | **33.4476** | **33.4476** | **1.3500e-003** | **0.0000** | **33.4814** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2032

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0187 | 0.0101 | 0.1696 | 6.1000e-004 | 0.0890 | 2.8000e-004 | 0.0893 | 0.0237 | 2.6000e-004 | 0.0239 | 0.0000 | 60.3233 | 60.3233 | 1.0100e-003 | 1.3100e-003 | 60.7391 |
| **Total** | **0.0187** | **0.0101** | **0.1696** | **6.1000e-004** | **0.0890** | **2.8000e-004** | **0.0893** | **0.0237** | **2.6000e-004** | **0.0239** | **0.0000** | **60.3233** | **60.3233** | **1.0100e-003** | **1.3100e-003** | **60.7391** |

## 3.6 Architectural Coating - 2033

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.5016 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0170 | 0.1113 | 0.2337 | 3.9000e-004 | | 2.6400e-003 | 2.6400e-003 | | 2.6400e-003 | 2.6400e-003 | 0.0000 | 33.1923 | 33.1923 | 1.3400e-003 | 0.0000 | 33.2259 |
| **Total** | **0.5186** | **0.1113** | **0.2337** | **3.9000e-004** | | **2.6400e-003** | **2.6400e-003** | | **2.6400e-003** | **2.6400e-003** | **0.0000** | **33.1923** | **33.1923** | **1.3400e-003** | **0.0000** | **33.2259** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2033

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0175 | 9.5200e-003 | 0.1634 | 5.9000e-004 | 0.0883 | 2.6000e-004 | 0.0886 | 0.0235 | 2.4000e-004 | 0.0237 | 0.0000 | 59.1639 | 59.1639 | 9.4000e-004 | 1.2700e-003 | 59.5658 |
| **Total** | **0.0175** | **9.5200e-003** | **0.1634** | **5.9000e-004** | **0.0883** | **2.6000e-004** | **0.0886** | **0.0235** | **2.4000e-004** | **0.0237** | **0.0000** | **59.1639** | **59.1639** | **9.4000e-004** | **1.2700e-003** | **59.5658** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.5016 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0170 | 0.1113 | 0.2337 | 3.9000e-004 | | 2.6400e-003 | 2.6400e-003 | | 2.6400e-003 | 2.6400e-003 | 0.0000 | 33.1923 | 33.1923 | 1.3400e-003 | 0.0000 | 33.2258 |
| **Total** | **0.5186** | **0.1113** | **0.2337** | **3.9000e-004** | | **2.6400e-003** | **2.6400e-003** | | **2.6400e-003** | **2.6400e-003** | **0.0000** | **33.1923** | **33.1923** | **1.3400e-003** | **0.0000** | **33.2258** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2033

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0175 | 9.5200e-003 | 0.1634 | 5.9000e-004 | 0.0883 | 2.6000e-004 | 0.0886 | 0.0235 | 2.4000e-004 | 0.0237 | 0.0000 | 59.1639 | 59.1639 | 9.4000e-004 | 1.2700e-003 | 59.5658 |
| **Total** | **0.0175** | **9.5200e-003** | **0.1634** | **5.9000e-004** | **0.0883** | **2.6000e-004** | **0.0886** | **0.0235** | **2.4000e-004** | **0.0237** | **0.0000** | **59.1639** | **59.1639** | **9.4000e-004** | **1.2700e-003** | **59.5658** |

## 3.6 Architectural Coating - 2034

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.5016 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0170 | 0.1113 | 0.2337 | 3.9000e-004 | | 2.6400e-003 | 2.6400e-003 | | 2.6400e-003 | 2.6400e-003 | 0.0000 | 33.1923 | 33.1923 | 1.3400e-003 | 0.0000 | 33.2259 |
| **Total** | **0.5186** | **0.1113** | **0.2337** | **3.9000e-004** | | **2.6400e-003** | **2.6400e-003** | | **2.6400e-003** | **2.6400e-003** | **0.0000** | **33.1923** | **33.1923** | **1.3400e-003** | **0.0000** | **33.2259** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2034

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0165 | 9.0900e-003 | 0.1590 | 5.8000e-004 | 0.0883 | 2.4000e-004 | 0.0886 | 0.0235 | 2.2000e-004 | 0.0237 | 0.0000 | 58.5512 | 58.5512 | 8.8000e-004 | 1.2500e-003 | 58.9443 |
| **Total** | **0.0165** | **9.0900e-003** | **0.1590** | **5.8000e-004** | **0.0883** | **2.4000e-004** | **0.0886** | **0.0235** | **2.2000e-004** | **0.0237** | **0.0000** | **58.5512** | **58.5512** | **8.8000e-004** | **1.2500e-003** | **58.9443** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.5016 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0170 | 0.1113 | 0.2337 | 3.9000e-004 | | 2.6400e-003 | 2.6400e-003 | | 2.6400e-003 | 2.6400e-003 | 0.0000 | 33.1923 | 33.1923 | 1.3400e-003 | 0.0000 | 33.2258 |
| **Total** | **0.5186** | **0.1113** | **0.2337** | **3.9000e-004** | | **2.6400e-003** | **2.6400e-003** | | **2.6400e-003** | **2.6400e-003** | **0.0000** | **33.1923** | **33.1923** | **1.3400e-003** | **0.0000** | **33.2258** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2034

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0165 | 9.0900e-003 | 0.1590 | 5.8000e-004 | 0.0883 | 2.4000e-004 | 0.0886 | 0.0235 | 2.2000e-004 | 0.0237 | 0.0000 | 58.5512 | 58.5512 | 8.8000e-004 | 1.2500e-003 | 58.9443 |
| **Total** | **0.0165** | **9.0900e-003** | **0.1590** | **5.8000e-004** | **0.0883** | **2.4000e-004** | **0.0886** | **0.0235** | **2.2000e-004** | **0.0237** | **0.0000** | **58.5512** | **58.5512** | **8.8000e-004** | **1.2500e-003** | **58.9443** |

## 3.6 Architectural Coating - 2035

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.3743 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0114 | 0.0735 | 0.1740 | 2.9000e-004 | | 9.6000e-004 | 9.6000e-004 | | 9.6000e-004 | 9.6000e-004 | 0.0000 | 24.7666 | 24.7666 | 9.2000e-004 | 0.0000 | 24.7894 |
| **Total** | **0.3857** | **0.0735** | **0.1740** | **2.9000e-004** | | **9.6000e-004** | **9.6000e-004** | | **9.6000e-004** | **9.6000e-004** | **0.0000** | **24.7666** | **24.7666** | **9.2000e-004** | **0.0000** | **24.7894** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2035

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0117 | 6.5300e-003 | 0.1159 | 4.3000e-004 | 0.0659 | 1.7000e-004 | 0.0661 | 0.0175 | 1.6000e-004 | 0.0177 | 0.0000 | 43.2945 | 43.2945 | 6.2000e-004 | 9.1000e-004 | 43.5826 |
| **Total** | **0.0117** | **6.5300e-003** | **0.1159** | **4.3000e-004** | **0.0659** | **1.7000e-004** | **0.0661** | **0.0175** | **1.6000e-004** | **0.0177** | **0.0000** | **43.2945** | **43.2945** | **6.2000e-004** | **9.1000e-004** | **43.5826** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.3743 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0114 | 0.0735 | 0.1740 | 2.9000e-004 | | 9.6000e-004 | 9.6000e-004 | | 9.6000e-004 | 9.6000e-004 | 0.0000 | 24.7665 | 24.7665 | 9.2000e-004 | 0.0000 | 24.7894 |
| **Total** | **0.3857** | **0.0735** | **0.1740** | **2.9000e-004** | | **9.6000e-004** | **9.6000e-004** | | **9.6000e-004** | **9.6000e-004** | **0.0000** | **24.7665** | **24.7665** | **9.2000e-004** | **0.0000** | **24.7894** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

### 3.6 Architectural Coating - 2035

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0117 | 6.5300e-003 | 0.1159 | 4.3000e-004 | 0.0659 | 1.7000e-004 | 0.0661 | 0.0175 | 1.6000e-004 | 0.0177 | 0.0000 | 43.2945 | 43.2945 | 6.2000e-004 | 9.1000e-004 | 43.5826 |
| **Total** | **0.0117** | **6.5300e-003** | **0.1159** | **4.3000e-004** | **0.0659** | **1.7000e-004** | **0.0661** | **0.0175** | **1.6000e-004** | **0.0177** | **0.0000** | **43.2945** | **43.2945** | **6.2000e-004** | **9.1000e-004** | **43.5826** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Improve Pedestrian Network

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 1.0766 | 1.9024 | 10.9595 | 0.0278 | 3.5252 | 0.0202 | 3.5455 | 0.9423 | 0.0190 | 0.9613 | 0.0000 | 2,766.1167 | 2,766.1167 | 0.1208 | 0.1400 | 2,810.8581 |
| Unmitigated | 1.0877 | 1.9313 | 11.1297 | 0.0284 | 3.5972 | 0.0206 | 3.6178 | 0.9615 | 0.0194 | 0.9809 | 0.0000 | 2,820.7924 | 2,820.7924 | 0.1225 | 0.1423 | 2,866.2622 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 12.64 | 31.75 | 35.48 | 39,772 | 38,977 |
| Single Family Housing | 3,341.76 | 3,377.16 | 3026.70 | 9,568,036 | 9,376,675 |
| Total | 3,354.40 | 3,408.91 | 3,062.18 | 9,607,808 | 9,415,652 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Single Family Housing | 10.80 | 7.30 | 7.50 | 45.60 | 19.00 | 35.40 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.552787 | 0.055429 | 0.175422 | 0.126588 | 0.020626 | 0.005781 | 0.013059 | 0.024880 | 0.000595 | 0.000297 | 0.020966 | 0.001153 | 0.002414 |
| Single Family Housing | 0.552787 | 0.055429 | 0.175422 | 0.126588 | 0.020626 | 0.005781 | 0.013059 | 0.024880 | 0.000595 | 0.000297 | 0.020966 | 0.001153 | 0.002414 |

# 5.0 Energy Detail

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Historical Energy Use: N

## 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 148.1363 | 148.1363 | 0.0419 | 5.0800e-003 | 150.6973 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 148.1363 | 148.1363 | 0.0419 | 5.0800e-003 | 150.6973 |
| NaturalGas Mitigated | 0.0452 | 0.3859 | 0.1642 | 2.4600e-003 | | 0.0312 | 0.0312 | | 0.0312 | 0.0312 | 0.0000 | 446.9336 | 446.9336 | 8.5700e-003 | 8.1900e-003 | 449.5895 |
| NaturalGas Unmitigated | 0.0452 | 0.3859 | 0.1642 | 2.4600e-003 | | 0.0312 | 0.0312 | | 0.0312 | 0.0312 | 0.0000 | 446.9336 | 446.9336 | 8.5700e-003 | 8.1900e-003 | 449.5895 |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 8.37522e+006 | 0.0452 | 0.3859 | 0.1642 | 2.4600e-003 | | 0.0312 | 0.0312 | | 0.0312 | 0.0312 | 0.0000 | 446.9336 | 446.9336 | 8.5700e-003 | 8.1900e-003 | 449.5895 |
| **Total** | | **0.0452** | **0.3859** | **0.1642** | **2.4600e-003** | | **0.0312** | **0.0312** | | **0.0312** | **0.0312** | **0.0000** | **446.9336** | **446.9336** | **8.5700e-003** | **8.1900e-003** | **449.5895** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 8.37522e+006 | 0.0452 | 0.3859 | 0.1642 | 2.4600e-003 | | 0.0312 | 0.0312 | | 0.0312 | 0.0312 | 0.0000 | 446.9336 | 446.9336 | 8.5700e-003 | 8.1900e-003 | 449.5895 |
| **Total** | | **0.0452** | **0.3859** | **0.1642** | **2.4600e-003** | | **0.0312** | **0.0312** | | **0.0312** | **0.0312** | **0.0000** | **446.9336** | **446.9336** | **8.5700e-003** | **8.1900e-003** | **449.5895** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 2.79922e+006 | 148.1363 | 0.0419 | 5.0800e-003 | 150.6973 |
| **Total** | | **148.1363** | **0.0419** | **5.0800e-003** | **150.6973** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 2.79922e+006 | 148.1363 | 0.0419 | 5.0800e-003 | 150.6973 |
| **Total** | | **148.1363** | **0.0419** | **5.0800e-003** | **150.6973** |

## 6.0 Area Detail

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Cleaning Supplies

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 3.3250 | 0.2099 | 5.3223 | 0.0116 | | 0.5560 | 0.5560 | | 0.5560 | 0.5560 | 71.5562 | 156.3600 | 227.9162 | 0.3396 | 2.8100e-003 | 237.2438 |
| Unmitigated | 3.5478 | 0.2161 | 5.9516 | 0.0117 | | 0.5597 | 0.5597 | | 0.5597 | 0.5597 | 71.5562 | 157.6493 | 229.2055 | 0.3415 | 2.8100e-003 | 238.5818 |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.5981 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 2.4952 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.3762 | 0.1859 | 3.3322 | 0.0115 | | 0.5451 | 0.5451 | | 0.5451 | 0.5451 | 71.5562 | 153.3554 | 224.9116 | 0.3375 | 2.8100e-003 | 234.1857 |
| Landscaping | 0.0783 | 0.0302 | 2.6194 | 1.4000e-004 | | 0.0146 | 0.0146 | | 0.0146 | 0.0146 | 0.0000 | 4.2939 | 4.2939 | 4.0900e-003 | 0.0000 | 4.3961 |
| **Total** | **3.5478** | **0.2161** | **5.9516** | **0.0117** | | **0.5597** | **0.5597** | | **0.5597** | **0.5597** | **71.5562** | **157.6493** | **229.2055** | **0.3415** | **2.8100e-003** | **238.5818** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.5981 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 2.3092 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.3762 | 0.1859 | 3.3322 | 0.0115 | | 0.5451 | 0.5451 | | 0.5451 | 0.5451 | 71.5562 | 153.3554 | 224.9116 | 0.3375 | 2.8100e-003 | 234.1857 |
| Landscaping | 0.0415 | 0.0240 | 1.9901 | 9.0000e-005 | | 0.0109 | 0.0109 | | 0.0109 | 0.0109 | 0.0000 | 3.0046 | 3.0046 | 2.1400e-003 | 0.0000 | 3.0581 |
| **Total** | **3.3250** | **0.2099** | **5.3223** | **0.0116** | | **0.5560** | **0.5560** | | **0.5560** | **0.5560** | **71.5562** | **156.3600** | **227.9162** | **0.3396** | **2.8100e-003** | **237.2438** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 18.9367 | 0.7548 | 0.0181 | 43.2148 |
| Unmitigated | 20.1903 | 0.7552 | 0.0182 | 44.4901 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| City Park | 0 / 19.302 | 3.5752 | 1.0100e-003 | 1.2000e-004 | 3.6370 |
| Single Family Housing | 23.0645 / 14.5407 | 16.6152 | 0.7542 | 0.0181 | 40.8531 |
| **Total** | | **20.1903** | **0.7552** | **0.0182** | **44.4901** |

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| City Park | 0 / 15.4416 | 2.8601 | 8.1000e-004 | 1.0000e-004 | 2.9096 |
| Single Family Housing | 23.0645 / 11.6325 | 16.0765 | 0.7540 | 0.0181 | 40.3052 |
| **Total** | | **18.9367** | **0.7549** | **0.0182** | **43.2148** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 86.0519 | 5.0855 | 0.0000 | 213.1900 |
| Unmitigated | 86.0519 | 5.0855 | 0.0000 | 213.1900 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| City Park | 1.39 | 0.2822 | 0.0167 | 0.0000 | 0.6990 |
| Single Family Housing | 422.53 | 85.7698 | 5.0689 | 0.0000 | 212.4910 |
| **Total** | | **86.0519** | **5.0855** | **0.0000** | **213.1900** |

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| City Park | 1.39 | 0.2822 | 0.0167 | 0.0000 | 0.6990 |
| Single Family Housing | 422.53 | 85.7698 | 5.0689 | 0.0000 | 212.4910 |
| **Total** | | **86.0519** | **5.0855** | **0.0000** | **213.1900** |

## 9.0 Operational Offroad

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

# Hat Ranch Project - Reduced Density Alternative

**San Joaquin Valley Unified APCD Air District, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| City Park | 16.20 | Acre | 16.20 | 705,672.00 | 0 |
| Single Family Housing | 354.00 | Dwelling Unit | 168.60 | 637,200.00 | 1123 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.7 | **Precipitation Freq (Days)** | 45 |
| **Climate Zone** | 2 | | | **Operational Year** | 2035 |
| **Utility Company** | Pacific Gas and Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 116.67 | **CH4 Intensity (lb/MWhr)** | 0.033 | **N2O Intensity (lb/MWhr)** | 0.004 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor adjusted per PG&E's compliance with RPS.

Land Use - Lot acrages adjusted according to site plan.

Construction Phase - Architectural coating phase timing adjusted to occur during building construction.

Vehicle Trips -

Mobile Land Use Mitigation -

Area Mitigation - All electric landscaping equipment would be used, pursuant to AB 1346
Low VOC cleaning supplies required, per SJVAPCD Rule 4663

Water Mitigation - Water conservation strategy applied to reflect compliance with MWELO.

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstructionPhase | NumDays | 220.00 | 3,100.00 |
| tblConstructionPhase | PhaseEndDate | 7/17/2037 | 9/27/2035 |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | |
|---|---|---|---|
| tblConstructionPhase | PhaseEndDate | 11/9/2035 | 9/13/2035 |
| tblConstructionPhase | PhaseEndDate | 9/12/2036 | 10/26/2023 |
| tblConstructionPhase | PhaseStartDate | 9/13/2036 | 11/10/2023 |
| tblConstructionPhase | PhaseStartDate | 12/23/2023 | 10/27/2023 |
| tblConstructionPhase | PhaseStartDate | 11/10/2035 | 12/23/2022 |
| tblLandUse | LotAcreage | 114.94 | 168.60 |
| tblProjectCharacteristics | CO2IntensityFactor | 203.98 | 116.67 |

## 2.0 Emissions Summary

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2022 | 4.8664 | 50.0468 | 44.7277 | 0.0876 | 19.8049 | 2.2044 | 21.4183 | 10.1417 | 2.0280 | 11.6260 | 0.0000 | 8,498.0596 | 8,498.0596 | 2.6666 | 7.5500e-003 | 8,566.9748 |
| 2023 | 11.0405 | 57.7482 | 63.3708 | 0.1631 | 14.5933 | 2.2614 | 16.8547 | 5.1071 | 2.1024 | 7.2095 | 0.0000 | 16,231.9429 | 16,231.9429 | 2.6962 | 0.5950 | 16,476.6668 |
| 2024 | 7.3827 | 22.0546 | 33.4782 | 0.0978 | 5.2254 | 0.7390 | 5.9644 | 1.4097 | 0.6990 | 2.1088 | 0.0000 | 9,913.3822 | 9,913.3822 | 0.7313 | 0.5753 | 10,103.1076 |
| 2025 | 7.1381 | 20.8874 | 32.3541 | 0.0960 | 5.2254 | 0.6429 | 5.8683 | 1.4097 | 0.6081 | 2.0178 | 0.0000 | 9,761.2332 | 9,761.2332 | 0.7169 | 0.5596 | 9,945.9080 |
| 2026 | 7.0257 | 20.7727 | 31.5546 | 0.0943 | 5.2254 | 0.6418 | 5.8672 | 1.4097 | 0.6071 | 2.0168 | 0.0000 | 9,615.7926 | 9,615.7926 | 0.7081 | 0.5449 | 9,795.8706 |
| 2027 | 6.9250 | 20.6640 | 30.8235 | 0.0927 | 5.2254 | 0.6404 | 5.8658 | 1.4097 | 0.6058 | 2.0156 | 0.0000 | 9,470.8225 | 9,470.8225 | 0.7004 | 0.5305 | 9,646.4322 |
| 2028 | 6.8339 | 20.5775 | 30.2211 | 0.0911 | 5.2254 | 0.6390 | 5.8644 | 1.4097 | 0.6045 | 2.0143 | 0.0000 | 9,337.9628 | 9,337.9628 | 0.6939 | 0.5174 | 9,509.4813 |
| 2029 | 6.7484 | 20.4955 | 29.7042 | 0.0898 | 5.2254 | 0.6376 | 5.8631 | 1.4097 | 0.6032 | 2.0130 | 0.0000 | 9,214.9841 | 9,214.9841 | 0.6882 | 0.5051 | 9,382.7114 |
| 2030 | 6.5710 | 15.6060 | 29.3331 | 0.0925 | 5.2254 | 0.2258 | 5.4512 | 1.4098 | 0.2228 | 1.6325 | 0.0000 | 9,446.4965 | 9,446.4965 | 0.1946 | 0.4942 | 9,598.6434 |
| 2031 | 6.4947 | 15.5543 | 28.9580 | 0.0914 | 5.2254 | 0.2247 | 5.4501 | 1.4098 | 0.2217 | 1.6315 | 0.0000 | 9,349.1948 | 9,349.1948 | 0.1903 | 0.4847 | 9,498.3996 |
| 2032 | 6.4287 | 15.5116 | 28.6467 | 0.0904 | 5.2254 | 0.2236 | 5.4491 | 1.4098 | 0.2208 | 1.6305 | 0.0000 | 9,263.7189 | 9,263.7189 | 0.1865 | 0.4765 | 9,410.3877 |
| 2033 | 6.3692 | 15.4768 | 28.3823 | 0.0896 | 5.2254 | 0.2227 | 5.4481 | 1.4098 | 0.2199 | 1.6297 | 0.0000 | 9,188.5043 | 9,188.5043 | 0.1833 | 0.4694 | 9,332.9798 |
| 2034 | 6.3165 | 15.4435 | 28.1517 | 0.0888 | 5.2254 | 0.2218 | 5.4472 | 1.4098 | 0.2191 | 1.6288 | 0.0000 | 9,121.5063 | 9,121.5063 | 0.1804 | 0.4632 | 9,264.0400 |
| 2035 | 6.1641 | 14.5396 | 27.9140 | 0.0881 | 5.2254 | 0.1528 | 5.3783 | 1.4098 | 0.1501 | 1.5599 | 0.0000 | 9,062.8703 | 9,062.8703 | 0.1686 | 0.4577 | 9,203.4836 |
| **Maximum** | **11.0405** | **57.7482** | **63.3708** | **0.1631** | **19.8049** | **2.2614** | **21.4183** | **10.1417** | **2.1024** | **11.6260** | **0.0000** | **16,231.9429** | **16,231.9429** | **2.6962** | **0.5950** | **16,476.6668** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 2.1 Overall Construction (Maximum Daily Emission)

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2022 | 4.8664 | 50.0468 | 44.7277 | 0.0876 | 19.8049 | 2.2044 | 21.4183 | 10.1417 | 2.0280 | 11.6260 | 0.0000 | 8,498.0596 | 8,498.0596 | 2.6666 | 7.5500e-003 | 8,566.9748 |
| 2023 | 11.0405 | 57.7482 | 63.3708 | 0.1631 | 14.5933 | 2.2614 | 16.8547 | 5.1071 | 2.1024 | 7.2095 | 0.0000 | 16,231.9429 | 16,231.9429 | 2.6962 | 0.5950 | 16,476.6668 |
| 2024 | 7.3827 | 22.0546 | 33.4782 | 0.0978 | 5.2254 | 0.7390 | 5.9644 | 1.4097 | 0.6990 | 2.1088 | 0.0000 | 9,913.3822 | 9,913.3822 | 0.7313 | 0.5753 | 10,103.1076 |
| 2025 | 7.1381 | 20.8874 | 32.3541 | 0.0960 | 5.2254 | 0.6429 | 5.8683 | 1.4097 | 0.6081 | 2.0178 | 0.0000 | 9,761.2332 | 9,761.2332 | 0.7169 | 0.5596 | 9,945.9080 |
| 2026 | 7.0257 | 20.7727 | 31.5546 | 0.0943 | 5.2254 | 0.6418 | 5.8672 | 1.4097 | 0.6071 | 2.0168 | 0.0000 | 9,615.7926 | 9,615.7926 | 0.7081 | 0.5449 | 9,795.8706 |
| 2027 | 6.9250 | 20.6640 | 30.8235 | 0.0927 | 5.2254 | 0.6404 | 5.8658 | 1.4097 | 0.6058 | 2.0156 | 0.0000 | 9,470.8225 | 9,470.8225 | 0.7004 | 0.5305 | 9,646.4322 |
| 2028 | 6.8339 | 20.5775 | 30.2211 | 0.0911 | 5.2254 | 0.6390 | 5.8644 | 1.4097 | 0.6045 | 2.0143 | 0.0000 | 9,337.9628 | 9,337.9628 | 0.6939 | 0.5174 | 9,509.4813 |
| 2029 | 6.7484 | 20.4955 | 29.7042 | 0.0898 | 5.2254 | 0.6376 | 5.8631 | 1.4097 | 0.6032 | 2.0130 | 0.0000 | 9,214.9841 | 9,214.9841 | 0.6882 | 0.5051 | 9,382.7114 |
| 2030 | 6.5710 | 15.6060 | 29.3331 | 0.0925 | 5.2254 | 0.2258 | 5.4512 | 1.4098 | 0.2228 | 1.6325 | 0.0000 | 9,446.4965 | 9,446.4965 | 0.1946 | 0.4942 | 9,598.6434 |
| 2031 | 6.4947 | 15.5543 | 28.9580 | 0.0914 | 5.2254 | 0.2247 | 5.4501 | 1.4098 | 0.2217 | 1.6315 | 0.0000 | 9,349.1948 | 9,349.1948 | 0.1903 | 0.4847 | 9,498.3996 |
| 2032 | 6.4287 | 15.5116 | 28.6467 | 0.0904 | 5.2254 | 0.2236 | 5.4491 | 1.4098 | 0.2208 | 1.6305 | 0.0000 | 9,263.7189 | 9,263.7189 | 0.1865 | 0.4765 | 9,410.3876 |
| 2033 | 6.3692 | 15.4768 | 28.3823 | 0.0896 | 5.2254 | 0.2227 | 5.4481 | 1.4098 | 0.2199 | 1.6297 | 0.0000 | 9,188.5043 | 9,188.5043 | 0.1833 | 0.4694 | 9,332.9798 |
| 2034 | 6.3165 | 15.4435 | 28.1517 | 0.0888 | 5.2254 | 0.2218 | 5.4472 | 1.4098 | 0.2191 | 1.6288 | 0.0000 | 9,121.5063 | 9,121.5063 | 0.1804 | 0.4632 | 9,264.0400 |
| 2035 | 6.1641 | 14.5396 | 27.9140 | 0.0881 | 5.2254 | 0.1528 | 5.3783 | 1.4098 | 0.1501 | 1.5599 | 0.0000 | 9,062.8703 | 9,062.8703 | 0.1686 | 0.4577 | 9,203.4836 |
| **Maximum** | **11.0405** | **57.7482** | **63.3708** | **0.1631** | **19.8049** | **2.2614** | **21.4183** | **10.1417** | **2.1024** | **11.6260** | **0.0000** | **16,231.9429** | **16,231.9429** | **2.6962** | **0.5950** | **16,476.6668** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 26.9958 | 4.8689 | 110.3779 | 0.2828 | | 13.4572 | 13.4572 | | 13.4572 | 13.4572 | 1,923.8342 | 4,175.6499 | 6,099.4841 | 9.1226 | 0.0756 | 6,350.0755 |
| Energy | 0.2475 | 2.1146 | 0.8998 | 0.0135 | | 0.1710 | 0.1710 | | 0.1710 | 0.1710 | | 2,699.5064 | 2,699.5064 | 0.0517 | 0.0495 | 2,715.5483 |
| Mobile | 7.4058 | 10.2532 | 67.0155 | 0.1703 | 20.8399 | 0.1164 | 20.9563 | 5.5584 | 0.1095 | 5.6679 | | 18,674.6670 | 18,674.6670 | 0.7346 | 0.8633 | 18,950.2843 |
| **Total** | **34.6490** | **17.2368** | **178.2933** | **0.4667** | **20.8399** | **13.7446** | **34.5844** | **5.5584** | **13.7376** | **19.2961** | **1,923.8342** | **25,549.8233** | **27,473.6575** | **9.9089** | **0.9884** | **28,015.9081** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 25.5676 | 4.8003 | 103.3851 | 0.2823 | | 13.4161 | 13.4161 | | 13.4161 | 13.4161 | 1,923.8342 | 4,159.8590 | 6,083.6932 | 9.0988 | 0.0756 | 6,333.6884 |
| Energy | 0.2475 | 2.1146 | 0.8998 | 0.0135 | | 0.1710 | 0.1710 | | 0.1710 | 0.1710 | | 2,699.5064 | 2,699.5064 | 0.0517 | 0.0495 | 2,715.5483 |
| Mobile | 7.3436 | 10.1011 | 65.9295 | 0.1670 | 20.4231 | 0.1142 | 20.5373 | 5.4473 | 0.1074 | 5.5547 | | 18,311.8873 | 18,311.8873 | 0.7238 | 0.8493 | 18,583.0635 |
| **Total** | **33.1587** | **17.0160** | **170.2144** | **0.4628** | **20.4231** | **13.7013** | **34.1243** | **5.4473** | **13.6945** | **19.1417** | **1,923.8342** | **25,171.2528** | **27,095.0870** | **9.8743** | **0.9743** | **27,632.3001** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **4.30** | **1.28** | **4.53** | **0.82** | **2.00** | **0.32** | **1.33** | **2.00** | **0.31** | **0.80** | **0.00** | **1.48** | **1.38** | **0.35** | **1.42** | **1.37** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 5/1/2022 | 10/14/2022 | 5 | 120 | |
| 2 | Grading | Grading | 10/15/2022 | 12/22/2023 | 5 | 310 | |
| 3 | Building Construction | Building Construction | 10/27/2023 | 9/13/2035 | 5 | 3100 | |
| 4 | Paving | Paving | 12/23/2022 | 10/26/2023 | 5 | 220 | |
| 5 | Architectural Coating | Architectural Coating | 11/10/2023 | 9/27/2035 | 5 | 3100 | |

**Acres of Grading (Site Preparation Phase): 180**

**Acres of Grading (Grading Phase): 930**

**Acres of Paving: 0**

**Residential Indoor: 1,290,330; Residential Outdoor: 430,110; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | | | |
|---|---|---|---|---|---|
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 424.00 | 154.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 85.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.2 Site Preparation - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 19.6570 | 0.0000 | 19.6570 | 10.1025 | 0.0000 | 10.1025 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.1701 | 33.0835 | 19.6978 | 0.0380 | | 1.6126 | 1.6126 | | 1.4836 | 1.4836 | | 3,686.0619 | 3,686.0619 | 1.1922 | | 3,715.8655 |
| **Total** | **3.1701** | **33.0835** | **19.6978** | **0.0380** | **19.6570** | **1.6126** | **21.2696** | **10.1025** | **1.4836** | **11.5860** | | **3,686.0619** | **3,686.0619** | **1.1922** | | **3,715.8655** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0713 | 0.0403 | 0.5687 | 1.4100e-003 | 0.1479 | 8.1000e-004 | 0.1487 | 0.0392 | 7.5000e-004 | 0.0400 | | 143.4799 | 143.4799 | 4.3200e-003 | 3.8800e-003 | 144.7450 |
| **Total** | **0.0713** | **0.0403** | **0.5687** | **1.4100e-003** | **0.1479** | **8.1000e-004** | **0.1487** | **0.0392** | **7.5000e-004** | **0.0400** | | **143.4799** | **143.4799** | **4.3200e-003** | **3.8800e-003** | **144.7450** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.2 Site Preparation - 2022

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 19.6570 | 0.0000 | 19.6570 | 10.1025 | 0.0000 | 10.1025 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.1701 | 33.0835 | 19.6978 | 0.0380 | | 1.6126 | 1.6126 | | 1.4836 | 1.4836 | 0.0000 | 3,686.0619 | 3,686.0619 | 1.1922 | | 3,715.8655 |
| **Total** | **3.1701** | **33.0835** | **19.6978** | **0.0380** | **19.6570** | **1.6126** | **21.2696** | **10.1025** | **1.4836** | **11.5860** | **0.0000** | **3,686.0619** | **3,686.0619** | **1.1922** | | **3,715.8655** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0713 | 0.0403 | 0.5687 | 1.4100e-003 | 0.1479 | 8.1000e-004 | 0.1487 | 0.0392 | 7.5000e-004 | 0.0400 | | 143.4799 | 143.4799 | 4.3200e-003 | 3.8800e-003 | 144.7450 |
| **Total** | **0.0713** | **0.0403** | **0.5687** | **1.4100e-003** | **0.1479** | **8.1000e-004** | **0.1487** | **0.0392** | **7.5000e-004** | **0.0400** | | **143.4799** | **143.4799** | **4.3200e-003** | **3.8800e-003** | **144.7450** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.6248 | 38.8435 | 29.0415 | 0.0621 | | 1.6349 | 1.6349 | | 1.5041 | 1.5041 | | 6,011.4105 | 6,011.4105 | 1.9442 | | 6,060.0158 |
| **Total** | **3.6248** | **38.8435** | **29.0415** | **0.0621** | **9.2036** | **1.6349** | **10.8385** | **3.6538** | **1.5041** | **5.1579** | | **6,011.4105** | **6,011.4105** | **1.9442** | | **6,060.0158** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0793 | 0.0448 | 0.6319 | 1.5700e-003 | 0.1643 | 9.0000e-004 | 0.1652 | 0.0436 | 8.3000e-004 | 0.0444 | | 159.4222 | 159.4222 | 4.8000e-003 | 4.3100e-003 | 160.8278 |
| **Total** | **0.0793** | **0.0448** | **0.6319** | **1.5700e-003** | **0.1643** | **9.0000e-004** | **0.1652** | **0.0436** | **8.3000e-004** | **0.0444** | | **159.4222** | **159.4222** | **4.8000e-003** | **4.3100e-003** | **160.8278** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2022

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.6248 | 38.8435 | 29.0415 | 0.0621 | | 1.6349 | 1.6349 | | 1.5041 | 1.5041 | 0.0000 | 6,011.4105 | 6,011.4105 | 1.9442 | | 6,060.0158 |
| **Total** | **3.6248** | **38.8435** | **29.0415** | **0.0621** | **9.2036** | **1.6349** | **10.8385** | **3.6538** | **1.5041** | **5.1579** | **0.0000** | **6,011.4105** | **6,011.4105** | **1.9442** | | **6,060.0158** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0793 | 0.0448 | 0.6319 | 1.5700e-003 | 0.1643 | 9.0000e-004 | 0.1652 | 0.0436 | 8.3000e-004 | 0.0444 | | 159.4222 | 159.4222 | 4.8000e-003 | 4.3100e-003 | 160.8278 |
| **Total** | **0.0793** | **0.0448** | **0.6319** | **1.5700e-003** | **0.1643** | **9.0000e-004** | **0.1652** | **0.0436** | **8.3000e-004** | **0.0444** | | **159.4222** | **159.4222** | **4.8000e-003** | **4.3100e-003** | **160.8278** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.3217 | 34.5156 | 28.0512 | 0.0621 | | 1.4245 | 1.4245 | | 1.3105 | 1.3105 | | 6,011.4777 | 6,011.4777 | 1.9442 | | 6,060.0836 |
| **Total** | **3.3217** | **34.5156** | **28.0512** | **0.0621** | **9.2036** | **1.4245** | **10.6281** | **3.6538** | **1.3105** | **4.9643** | | **6,011.4777** | **6,011.4777** | **1.9442** | | **6,060.0836** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0726 | 0.0392 | 0.5750 | 1.5200e-003 | 0.1643 | 8.5000e-004 | 0.1651 | 0.0436 | 7.8000e-004 | 0.0444 | | 155.1920 | 155.1920 | 4.2800e-003 | 3.9600e-003 | 156.4785 |
| **Total** | **0.0726** | **0.0392** | **0.5750** | **1.5200e-003** | **0.1643** | **8.5000e-004** | **0.1651** | **0.0436** | **7.8000e-004** | **0.0444** | | **155.1920** | **155.1920** | **4.2800e-003** | **3.9600e-003** | **156.4785** |

## 3.3 Grading - 2023

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.3217 | 34.5156 | 28.0512 | 0.0621 | | 1.4245 | 1.4245 | | 1.3105 | 1.3105 | 0.0000 | 6,011.4777 | 6,011.4777 | 1.9442 | | 6,060.0836 |
| **Total** | **3.3217** | **34.5156** | **28.0512** | **0.0621** | **9.2036** | **1.4245** | **10.6281** | **3.6538** | **1.3105** | **4.9643** | **0.0000** | **6,011.4777** | **6,011.4777** | **1.9442** | | **6,060.0836** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0726 | 0.0392 | 0.5750 | 1.5200e-003 | 0.1643 | 8.5000e-004 | 0.1651 | 0.0436 | 7.8000e-004 | 0.0444 | | 155.1920 | 155.1920 | 4.2800e-003 | 3.9600e-003 | 156.4785 |
| **Total** | **0.0726** | **0.0392** | **0.5750** | **1.5200e-003** | **0.1643** | **8.5000e-004** | **0.1651** | **0.0436** | **7.8000e-004** | **0.0444** | | **155.1920** | **155.1920** | **4.2800e-003** | **3.9600e-003** | **156.4785** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1759 | 6.5088 | 2.0551 | 0.0310 | 1.0441 | 0.0440 | 1.0880 | 0.3007 | 0.0420 | 0.3427 | | 3,278.9789 | 3,278.9789 | 0.0142 | 0.4903 | 3,425.4522 |
| Worker | 1.5389 | 0.8303 | 12.1906 | 0.0322 | 3.4831 | 0.0180 | 3.5010 | 0.9239 | 0.0165 | 0.9404 | | 3,290.0704 | 3,290.0704 | 0.0906 | 0.0839 | 3,317.3439 |
| **Total** | **1.7147** | **7.3391** | **14.2456** | **0.0632** | **4.5272** | **0.0619** | **4.5891** | **1.2245** | **0.0586** | **1.2831** | | **6,569.0492** | **6,569.0492** | **0.1048** | **0.5743** | **6,742.7961** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2023

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | 0.0000 | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | **0.0000** | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1759 | 6.5088 | 2.0551 | 0.0310 | 1.0441 | 0.0440 | 1.0880 | 0.3007 | 0.0420 | 0.3427 | | 3,278.9789 | 3,278.9789 | 0.0142 | 0.4903 | 3,425.4522 |
| Worker | 1.5389 | 0.8303 | 12.1906 | 0.0322 | 3.4831 | 0.0180 | 3.5010 | 0.9239 | 0.0165 | 0.9404 | | 3,290.0704 | 3,290.0704 | 0.0906 | 0.0839 | 3,317.3439 |
| **Total** | **1.7147** | **7.3391** | **14.2456** | **0.0632** | **4.5272** | **0.0619** | **4.5891** | **1.2245** | **0.0586** | **1.2831** | | **6,569.0492** | **6,569.0492** | **0.1048** | **0.5743** | **6,742.7961** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2024

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4716 | 13.4438 | 16.1668 | 0.0270 | | 0.6133 | 0.6133 | | 0.5769 | 0.5769 | | 2,555.6989 | 2,555.6989 | 0.6044 | | 2,570.8077 |
| **Total** | **1.4716** | **13.4438** | **16.1668** | **0.0270** | | **0.6133** | **0.6133** | | **0.5769** | **0.5769** | | **2,555.6989** | **2,555.6989** | **0.6044** | | **2,570.8077** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1711 | 6.5138 | 2.0042 | 0.0305 | 1.0441 | 0.0443 | 1.0884 | 0.3007 | 0.0424 | 0.3431 | | 3,226.5726 | 3,226.5726 | 0.0136 | 0.4823 | 3,370.6279 |
| Worker | 1.4167 | 0.7315 | 11.2431 | 0.0311 | 3.4831 | 0.0170 | 3.5001 | 0.9239 | 0.0157 | 0.9396 | | 3,206.7917 | 3,206.7917 | 0.0812 | 0.0775 | 3,231.9194 |
| **Total** | **1.5878** | **7.2454** | **13.2473** | **0.0616** | **4.5272** | **0.0614** | **4.5885** | **1.2245** | **0.0581** | **1.2826** | | **6,433.3643** | **6,433.3643** | **0.0948** | **0.5598** | **6,602.5473** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2024

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4716 | 13.4438 | 16.1668 | 0.0270 | | 0.6133 | 0.6133 | | 0.5769 | 0.5769 | 0.0000 | 2,555.6989 | 2,555.6989 | 0.6044 | | 2,570.8077 |
| **Total** | **1.4716** | **13.4438** | **16.1668** | **0.0270** | | **0.6133** | **0.6133** | | **0.5769** | **0.5769** | **0.0000** | **2,555.6989** | **2,555.6989** | **0.6044** | | **2,570.8077** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1711 | 6.5138 | 2.0042 | 0.0305 | 1.0441 | 0.0443 | 1.0884 | 0.3007 | 0.0424 | 0.3431 | | 3,226.5726 | 3,226.5726 | 0.0136 | 0.4823 | 3,370.6279 |
| Worker | 1.4167 | 0.7315 | 11.2431 | 0.0311 | 3.4831 | 0.0170 | 3.5001 | 0.9239 | 0.0157 | 0.9396 | | 3,206.7917 | 3,206.7917 | 0.0812 | 0.0775 | 3,231.9194 |
| **Total** | **1.5878** | **7.2454** | **13.2473** | **0.0616** | **4.5272** | **0.0614** | **4.5885** | **1.2245** | **0.0581** | **1.2826** | | **6,433.3643** | **6,433.3643** | **0.0948** | **0.5598** | **6,602.5473** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1671 | 6.4919 | 1.9617 | 0.0300 | 1.0441 | 0.0443 | 1.0884 | 0.3007 | 0.0424 | 0.3430 | | 3,167.8196 | 3,167.8196 | 0.0130 | 0.4731 | 3,309.1283 |
| Worker | 1.3114 | 0.6500 | 10.4114 | 0.0300 | 3.4831 | 0.0162 | 3.4993 | 0.9239 | 0.0149 | 0.9388 | | 3,128.3464 | 3,128.3464 | 0.0729 | 0.0720 | 3,151.6360 |
| **Total** | **1.4785** | **7.1419** | **12.3731** | **0.0600** | **4.5272** | **0.0605** | **4.5877** | **1.2245** | **0.0573** | **1.2818** | | **6,296.1659** | **6,296.1659** | **0.0860** | **0.5451** | **6,460.7642** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2025

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1671 | 6.4919 | 1.9617 | 0.0300 | 1.0441 | 0.0443 | 1.0884 | 0.3007 | 0.0424 | 0.3430 | | 3,167.8196 | 3,167.8196 | 0.0130 | 0.4731 | 3,309.1283 |
| Worker | 1.3114 | 0.6500 | 10.4114 | 0.0300 | 3.4831 | 0.0162 | 3.4993 | 0.9239 | 0.0149 | 0.9388 | | 3,128.3464 | 3,128.3464 | 0.0729 | 0.0720 | 3,151.6360 |
| **Total** | **1.4785** | **7.1419** | **12.3731** | **0.0600** | **4.5272** | **0.0605** | **4.5877** | **1.2245** | **0.0573** | **1.2818** | | **6,296.1659** | **6,296.1659** | **0.0860** | **0.5451** | **6,460.7642** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2026

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1636 | 6.4568 | 1.9271 | 0.0294 | 1.0441 | 0.0441 | 1.0882 | 0.3007 | 0.0422 | 0.3428 | | 3,108.2671 | 3,108.2671 | 0.0126 | 0.4638 | 3,246.7857 |
| Worker | 1.2206 | 0.5837 | 9.7742 | 0.0291 | 3.4831 | 0.0155 | 3.4986 | 0.9239 | 0.0143 | 0.9381 | | 3,056.8010 | 3,056.8010 | 0.0660 | 0.0676 | 3,078.5857 |
| **Total** | **1.3842** | **7.0405** | **11.7013** | **0.0585** | **4.5272** | **0.0596** | **4.5868** | **1.2245** | **0.0564** | **1.2810** | | **6,165.0681** | **6,165.0681** | **0.0786** | **0.5313** | **6,325.3714** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2026

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1636 | 6.4568 | 1.9271 | 0.0294 | 1.0441 | 0.0441 | 1.0882 | 0.3007 | 0.0422 | 0.3428 | | 3,108.2671 | 3,108.2671 | 0.0126 | 0.4638 | 3,246.7857 |
| Worker | 1.2206 | 0.5837 | 9.7742 | 0.0291 | 3.4831 | 0.0155 | 3.4986 | 0.9239 | 0.0143 | 0.9381 | | 3,056.8010 | 3,056.8010 | 0.0660 | 0.0676 | 3,078.5857 |
| **Total** | **1.3842** | **7.0405** | **11.7013** | **0.0585** | **4.5272** | **0.0596** | **4.5868** | **1.2245** | **0.0564** | **1.2810** | | **6,165.0681** | **6,165.0681** | **0.0786** | **0.5313** | **6,325.3714** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2027

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1606 | 6.4145 | 1.8986 | 0.0288 | 1.0441 | 0.0438 | 1.0879 | 0.3007 | 0.0419 | 0.3425 | | 3,044.6410 | 3,044.6410 | 0.0121 | 0.4539 | 3,180.2154 |
| Worker | 1.1393 | 0.5284 | 9.1890 | 0.0282 | 3.4831 | 0.0146 | 3.4977 | 0.9239 | 0.0135 | 0.9373 | | 2,989.0410 | 2,989.0410 | 0.0600 | 0.0638 | 3,009.5561 |
| **Total** | **1.2999** | **6.9429** | **11.0876** | **0.0571** | **4.5272** | **0.0584** | **4.5856** | **1.2245** | **0.0553** | **1.2799** | | **6,033.6820** | **6,033.6820** | **0.0721** | **0.5177** | **6,189.7715** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2027

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1606 | 6.4145 | 1.8986 | 0.0288 | 1.0441 | 0.0438 | 1.0879 | 0.3007 | 0.0419 | 0.3425 | | 3,044.6410 | 3,044.6410 | 0.0121 | 0.4539 | 3,180.2154 |
| Worker | 1.1393 | 0.5284 | 9.1890 | 0.0282 | 3.4831 | 0.0146 | 3.4977 | 0.9239 | 0.0135 | 0.9373 | | 2,989.0410 | 2,989.0410 | 0.0600 | 0.0638 | 3,009.5561 |
| **Total** | **1.2999** | **6.9429** | **11.0876** | **0.0571** | **4.5272** | **0.0584** | **4.5856** | **1.2245** | **0.0553** | **1.2799** | | **6,033.6820** | **6,033.6820** | **0.0721** | **0.5177** | **6,189.7715** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2028

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1581 | 6.3831 | 1.8759 | 0.0282 | 1.0441 | 0.0435 | 1.0876 | 0.3007 | 0.0416 | 0.3423 | | 2,983.8814 | 2,983.8814 | 0.0118 | 0.4445 | 3,116.6313 |
| Worker | 1.0655 | 0.4825 | 8.7061 | 0.0275 | 3.4831 | 0.0137 | 3.4968 | 0.9239 | 0.0126 | 0.9365 | | 2,928.9811 | 2,928.9811 | 0.0548 | 0.0607 | 2,948.4410 |
| **Total** | **1.2236** | **6.8656** | **10.5820** | **0.0557** | **4.5272** | **0.0572** | **4.5844** | **1.2245** | **0.0542** | **1.2788** | | **5,912.8625** | **5,912.8625** | **0.0666** | **0.5052** | **6,065.0723** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2028

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1581 | 6.3831 | 1.8759 | 0.0282 | 1.0441 | 0.0435 | 1.0876 | 0.3007 | 0.0416 | 0.3423 | | 2,983.8814 | 2,983.8814 | 0.0118 | 0.4445 | 3,116.6313 |
| Worker | 1.0655 | 0.4825 | 8.7061 | 0.0275 | 3.4831 | 0.0137 | 3.4968 | 0.9239 | 0.0126 | 0.9365 | | 2,928.9811 | 2,928.9811 | 0.0548 | 0.0607 | 2,948.4410 |
| **Total** | **1.2236** | **6.8656** | **10.5820** | **0.0557** | **4.5272** | **0.0572** | **4.5844** | **1.2245** | **0.0542** | **1.2788** | | **5,912.8625** | **5,912.8625** | **0.0666** | **0.5052** | **6,065.0723** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2029

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1558 | 6.3474 | 1.8563 | 0.0277 | 1.0441 | 0.0432 | 1.0873 | 0.3007 | 0.0413 | 0.3420 | | 2,925.1769 | 2,925.1769 | 0.0115 | 0.4354 | 3,055.2018 |
| Worker | 0.9961 | 0.4439 | 8.2918 | 0.0268 | 3.4831 | 0.0128 | 3.4959 | 0.9239 | 0.0118 | 0.9357 | | 2,875.4404 | 2,875.4404 | 0.0503 | 0.0581 | 2,894.0121 |
| **Total** | **1.1519** | **6.7913** | **10.1482** | **0.0545** | **4.5272** | **0.0560** | **4.5832** | **1.2245** | **0.0531** | **1.2776** | | **5,800.6173** | **5,800.6173** | **0.0618** | **0.4935** | **5,949.2139** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2029

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1558 | 6.3474 | 1.8563 | 0.0277 | 1.0441 | 0.0432 | 1.0873 | 0.3007 | 0.0413 | 0.3420 | | 2,925.1769 | 2,925.1769 | 0.0115 | 0.4354 | 3,055.2018 |
| Worker | 0.9961 | 0.4439 | 8.2918 | 0.0268 | 3.4831 | 0.0128 | 3.4959 | 0.9239 | 0.0118 | 0.9357 | | 2,875.4404 | 2,875.4404 | 0.0503 | 0.0581 | 2,894.0121 |
| **Total** | **1.1519** | **6.7913** | **10.1482** | **0.0545** | **4.5272** | **0.0560** | **4.5832** | **1.2245** | **0.0531** | **1.2776** | | **5,800.6173** | **5,800.6173** | **0.0618** | **0.4935** | **5,949.2139** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2030

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1540 | 6.3213 | 1.8415 | 0.0272 | 1.0441 | 0.0429 | 1.0870 | 0.3007 | 0.0411 | 0.3417 | | 2,871.9212 | 2,871.9212 | 0.0113 | 0.4271 | 2,999.4769 |
| Worker | 0.9318 | 0.4113 | 7.9443 | 0.0262 | 3.4831 | 0.0120 | 3.4951 | 0.9239 | 0.0111 | 0.9349 | | 2,828.5385 | 2,828.5385 | 0.0464 | 0.0559 | 2,846.3652 |
| **Total** | **1.0858** | **6.7327** | **9.7858** | **0.0534** | **4.5272** | **0.0549** | **4.5821** | **1.2245** | **0.0521** | **1.2767** | | **5,700.4598** | **5,700.4598** | **0.0577** | **0.4830** | **5,845.8421** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2030

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1540 | 6.3213 | 1.8415 | 0.0272 | 1.0441 | 0.0429 | 1.0870 | 0.3007 | 0.0411 | 0.3417 | | 2,871.9212 | 2,871.9212 | 0.0113 | 0.4271 | 2,999.4769 |
| Worker | 0.9318 | 0.4113 | 7.9443 | 0.0262 | 3.4831 | 0.0120 | 3.4951 | 0.9239 | 0.0111 | 0.9349 | | 2,828.5385 | 2,828.5385 | 0.0464 | 0.0559 | 2,846.3652 |
| **Total** | **1.0858** | **6.7327** | **9.7858** | **0.0534** | **4.5272** | **0.0549** | **4.5821** | **1.2245** | **0.0521** | **1.2767** | | **5,700.4598** | **5,700.4598** | **0.0577** | **0.4830** | **5,845.8421** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2031

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1527 | 6.3038 | 1.8319 | 0.0267 | 1.0441 | 0.0427 | 1.0868 | 0.3007 | 0.0409 | 0.3415 | | 2,824.6052 | 2,824.6052 | 0.0111 | 0.4198 | 2,949.9878 |
| Worker | 0.8694 | 0.3828 | 7.6398 | 0.0256 | 3.4831 | 0.0113 | 3.4943 | 0.9239 | 0.0104 | 0.9342 | | 2,786.9001 | 2,786.9001 | 0.0429 | 0.0541 | 2,804.0862 |
| **Total** | **1.0220** | **6.6866** | **9.4718** | **0.0524** | **4.5272** | **0.0540** | **4.5811** | **1.2245** | **0.0512** | **1.2758** | | **5,611.5054** | **5,611.5054** | **0.0540** | **0.4739** | **5,754.0740** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2031

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1527 | 6.3038 | 1.8319 | 0.0267 | 1.0441 | 0.0427 | 1.0868 | 0.3007 | 0.0409 | 0.3415 | | 2,824.6052 | 2,824.6052 | 0.0111 | 0.4198 | 2,949.9878 |
| Worker | 0.8694 | 0.3828 | 7.6398 | 0.0256 | 3.4831 | 0.0113 | 3.4943 | 0.9239 | 0.0104 | 0.9342 | | 2,786.9001 | 2,786.9001 | 0.0429 | 0.0541 | 2,804.0862 |
| **Total** | **1.0220** | **6.6866** | **9.4718** | **0.0524** | **4.5272** | **0.0540** | **4.5811** | **1.2245** | **0.0512** | **1.2758** | | **5,611.5054** | **5,611.5054** | **0.0540** | **0.4739** | **5,754.0740** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2032

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1517 | 6.2887 | 1.8274 | 0.0263 | 1.0441 | 0.0425 | 1.0866 | 0.3007 | 0.0407 | 0.3414 | | 2,782.8603 | 2,782.8603 | 0.0110 | 0.4134 | 2,906.3327 |
| Worker | 0.8152 | 0.3599 | 7.3842 | 0.0251 | 3.4831 | 0.0106 | 3.4936 | 0.9239 | 9.7100e-003 | 0.9336 | | 2,750.4720 | 2,750.4720 | 0.0399 | 0.0526 | 2,767.1367 |
| **Total** | **0.9669** | **6.6485** | **9.2116** | **0.0515** | **4.5272** | **0.0531** | **4.5803** | **1.2245** | **0.0504** | **1.2749** | | **5,533.3323** | **5,533.3323** | **0.0509** | **0.4660** | **5,673.4694** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2032

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1517 | 6.2887 | 1.8274 | 0.0263 | 1.0441 | 0.0425 | 1.0866 | 0.3007 | 0.0407 | 0.3414 | | 2,782.8603 | 2,782.8603 | 0.0110 | 0.4134 | 2,906.3327 |
| Worker | 0.8152 | 0.3599 | 7.3842 | 0.0251 | 3.4831 | 0.0106 | 3.4936 | 0.9239 | 9.7100e-003 | 0.9336 | | 2,750.4720 | 2,750.4720 | 0.0399 | 0.0526 | 2,767.1367 |
| **Total** | **0.9669** | **6.6485** | **9.2116** | **0.0515** | **4.5272** | **0.0531** | **4.5803** | **1.2245** | **0.0504** | **1.2749** | | **5,533.3323** | **5,533.3323** | **0.0509** | **0.4660** | **5,673.4694** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2033

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1511 | 6.2767 | 1.8268 | 0.0260 | 1.0441 | 0.0424 | 1.0865 | 0.3007 | 0.0405 | 0.3412 | | 2,746.1407 | 2,746.1407 | 0.0109 | 0.4078 | 2,867.9381 |
| Worker | 0.7662 | 0.3409 | 7.1645 | 0.0247 | 3.4831 | 9.9100e-003 | 3.4930 | 0.9239 | 9.1200e-003 | 0.9330 | | 2,718.4054 | 2,718.4054 | 0.0373 | 0.0513 | 2,734.6384 |
| **Total** | **0.9172** | **6.6176** | **8.9913** | **0.0507** | **4.5272** | **0.0523** | **4.5795** | **1.2245** | **0.0496** | **1.2742** | | **5,464.5461** | **5,464.5461** | **0.0482** | **0.4592** | **5,602.5765** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2033

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1511 | 6.2767 | 1.8268 | 0.0260 | 1.0441 | 0.0424 | 1.0865 | 0.3007 | 0.0405 | 0.3412 | | 2,746.1407 | 2,746.1407 | 0.0109 | 0.4078 | 2,867.9381 |
| Worker | 0.7662 | 0.3409 | 7.1645 | 0.0247 | 3.4831 | 9.9100e-003 | 3.4930 | 0.9239 | 9.1200e-003 | 0.9330 | | 2,718.4054 | 2,718.4054 | 0.0373 | 0.0513 | 2,734.6384 |
| **Total** | **0.9172** | **6.6176** | **8.9913** | **0.0507** | **4.5272** | **0.0523** | **4.5795** | **1.2245** | **0.0496** | **1.2742** | | **5,464.5461** | **5,464.5461** | **0.0482** | **0.4592** | **5,602.5765** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2034

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1506 | 6.2616 | 1.8276 | 0.0257 | 1.0441 | 0.0422 | 1.0863 | 0.3007 | 0.0403 | 0.3410 | | 2,712.8737 | 2,712.8737 | 0.0108 | 0.4027 | 2,833.1542 |
| Worker | 0.7227 | 0.3257 | 6.9718 | 0.0243 | 3.4831 | 9.3200e-003 | 3.4924 | 0.9239 | 8.5800e-003 | 0.9325 | | 2,690.3073 | 2,690.3073 | 0.0350 | 0.0504 | 2,706.1863 |
| **Total** | **0.8733** | **6.5873** | **8.7994** | **0.0500** | **4.5272** | **0.0515** | **4.5787** | **1.2245** | **0.0489** | **1.2735** | | **5,403.1810** | **5,403.1810** | **0.0458** | **0.4531** | **5,539.3406** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2034

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1506 | 6.2616 | 1.8276 | 0.0257 | 1.0441 | 0.0422 | 1.0863 | 0.3007 | 0.0403 | 0.3410 | | 2,712.8737 | 2,712.8737 | 0.0108 | 0.4027 | 2,833.1542 |
| Worker | 0.7227 | 0.3257 | 6.9718 | 0.0243 | 3.4831 | 9.3200e-003 | 3.4924 | 0.9239 | 8.5800e-003 | 0.9325 | | 2,690.3073 | 2,690.3073 | 0.0350 | 0.0504 | 2,706.1863 |
| **Total** | **0.8733** | **6.5873** | **8.7994** | **0.0500** | **4.5272** | **0.0515** | **4.5787** | **1.2245** | **0.0489** | **1.2735** | | **5,403.1810** | **5,403.1810** | **0.0458** | **0.4531** | **5,539.3406** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2035

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.2168 | 7.1613 | 16.1178 | 0.0310 | | 0.0904 | 0.0904 | | 0.0904 | 0.0904 | | 2,897.5468 | 2,897.5468 | 0.1079 | | 2,900.2448 |
| **Total** | **1.2168** | **7.1613** | **16.1178** | **0.0310** | | **0.0904** | **0.0904** | | **0.0904** | **0.0904** | | **2,897.5468** | **2,897.5468** | **0.1079** | | **2,900.2448** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1501 | 6.2438 | 1.8285 | 0.0254 | 1.0441 | 0.0419 | 1.0861 | 0.3007 | 0.0401 | 0.3408 | | 2,683.2787 | 2,683.2787 | 0.0107 | 0.3982 | 2,802.2100 |
| Worker | 0.6838 | 0.3138 | 6.8085 | 0.0240 | 3.4831 | 8.7900e-003 | 3.4919 | 0.9239 | 8.0900e-003 | 0.9320 | | 2,666.1160 | 2,666.1160 | 0.0330 | 0.0496 | 2,681.7132 |
| **Total** | **0.8339** | **6.5576** | **8.6370** | **0.0494** | **4.5272** | **0.0507** | **4.5779** | **1.2245** | **0.0482** | **1.2728** | | **5,349.3947** | **5,349.3947** | **0.0437** | **0.4478** | **5,483.9232** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2035

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.2168 | 7.1613 | 16.1178 | 0.0310 | | 0.0904 | 0.0904 | | 0.0904 | 0.0904 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1079 | | 2,900.2448 |
| **Total** | **1.2168** | **7.1613** | **16.1178** | **0.0310** | | **0.0904** | **0.0904** | | **0.0904** | **0.0904** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1079** | | **2,900.2448** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1501 | 6.2438 | 1.8285 | 0.0254 | 1.0441 | 0.0419 | 1.0861 | 0.3007 | 0.0401 | 0.3408 | | 2,683.2787 | 2,683.2787 | 0.0107 | 0.3982 | 2,802.2100 |
| Worker | 0.6838 | 0.3138 | 6.8085 | 0.0240 | 3.4831 | 8.7900e-003 | 3.4919 | 0.9239 | 8.0900e-003 | 0.9320 | | 2,666.1160 | 2,666.1160 | 0.0330 | 0.0496 | 2,681.7132 |
| **Total** | **0.8339** | **6.5576** | **8.6370** | **0.0494** | **4.5272** | **0.0507** | **4.5779** | **1.2245** | **0.0482** | **1.2728** | | **5,349.3947** | **5,349.3947** | **0.0437** | **0.4478** | **5,483.9232** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Paving - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.1028 | 11.1249 | 14.5805 | 0.0228 | | 0.5679 | 0.5679 | | 0.5225 | 0.5225 | | 2,207.6603 | 2,207.6603 | 0.7140 | | 2,225.5104 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.1028** | **11.1249** | **14.5805** | **0.0228** | | **0.5679** | **0.5679** | | **0.5225** | **0.5225** | | **2,207.6603** | **2,207.6603** | **0.7140** | | **2,225.5104** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0595 | 0.0336 | 0.4739 | 1.1800e-003 | 0.1232 | 6.7000e-004 | 0.1239 | 0.0327 | 6.2000e-004 | 0.0333 | | 119.5666 | 119.5666 | 3.6000e-003 | 3.2400e-003 | 120.6209 |
| **Total** | **0.0595** | **0.0336** | **0.4739** | **1.1800e-003** | **0.1232** | **6.7000e-004** | **0.1239** | **0.0327** | **6.2000e-004** | **0.0333** | | **119.5666** | **119.5666** | **3.6000e-003** | **3.2400e-003** | **120.6209** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Paving - 2022

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.1028 | 11.1249 | 14.5805 | 0.0228 | | 0.5679 | 0.5679 | | 0.5225 | 0.5225 | 0.0000 | 2,207.6603 | 2,207.6603 | 0.7140 | | 2,225.5104 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.1028** | **11.1249** | **14.5805** | **0.0228** | | **0.5679** | **0.5679** | | **0.5225** | **0.5225** | **0.0000** | **2,207.6603** | **2,207.6603** | **0.7140** | | **2,225.5104** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0595 | 0.0336 | 0.4739 | 1.1800e-003 | 0.1232 | 6.7000e-004 | 0.1239 | 0.0327 | 6.2000e-004 | 0.0333 | | 119.5666 | 119.5666 | 3.6000e-003 | 3.2400e-003 | 120.6209 |
| **Total** | **0.0595** | **0.0336** | **0.4739** | **1.1800e-003** | **0.1232** | **6.7000e-004** | **0.1239** | **0.0327** | **6.2000e-004** | **0.0333** | | **119.5666** | **119.5666** | **3.6000e-003** | **3.2400e-003** | **120.6209** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Paving - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.0327** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0544 | 0.0294 | 0.4313 | 1.1400e-003 | 0.1232 | 6.4000e-004 | 0.1239 | 0.0327 | 5.8000e-004 | 0.0333 | | 116.3940 | 116.3940 | 3.2100e-003 | 2.9700e-003 | 117.3589 |
| **Total** | **0.0544** | **0.0294** | **0.4313** | **1.1400e-003** | **0.1232** | **6.4000e-004** | **0.1239** | **0.0327** | **5.8000e-004** | **0.0333** | | **116.3940** | **116.3940** | **3.2100e-003** | **2.9700e-003** | **117.3589** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Paving - 2023

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | 0.0000 | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.0327** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | **0.0000** | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0544 | 0.0294 | 0.4313 | 1.1400e-003 | 0.1232 | 6.4000e-004 | 0.1239 | 0.0327 | 5.8000e-004 | 0.0333 | | 116.3940 | 116.3940 | 3.2100e-003 | 2.9700e-003 | 117.3589 |
| **Total** | **0.0544** | **0.0294** | **0.4313** | **1.1400e-003** | **0.1232** | **6.4000e-004** | **0.1239** | **0.0327** | **5.8000e-004** | **0.0333** | | **116.3940** | **116.3940** | **3.2100e-003** | **2.9700e-003** | **117.3589** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1917 | 1.3030 | 1.8111 | 2.9700e-003 | | 0.0708 | 0.0708 | | 0.0708 | 0.0708 | | 281.4481 | 281.4481 | 0.0168 | | 281.8690 |
| **Total** | **4.0502** | **1.3030** | **1.8111** | **2.9700e-003** | | **0.0708** | **0.0708** | | **0.0708** | **0.0708** | | **281.4481** | **281.4481** | **0.0168** | | **281.8690** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.3085 | 0.1665 | 2.4439 | 6.4400e-003 | 0.6983 | 3.6000e-003 | 0.7019 | 0.1852 | 3.3100e-003 | 0.1885 | | 659.5660 | 659.5660 | 0.0182 | 0.0168 | 665.0336 |
| **Total** | **0.3085** | **0.1665** | **2.4439** | **6.4400e-003** | **0.6983** | **3.6000e-003** | **0.7019** | **0.1852** | **3.3100e-003** | **0.1885** | | **659.5660** | **659.5660** | **0.0182** | **0.0168** | **665.0336** |

## 3.6 Architectural Coating - 2023

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1917 | 1.3030 | 1.8111 | 2.9700e-003 | | 0.0708 | 0.0708 | | 0.0708 | 0.0708 | 0.0000 | 281.4481 | 281.4481 | 0.0168 | | 281.8690 |
| **Total** | **4.0502** | **1.3030** | **1.8111** | **2.9700e-003** | | **0.0708** | **0.0708** | | **0.0708** | **0.0708** | **0.0000** | **281.4481** | **281.4481** | **0.0168** | | **281.8690** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.3085 | 0.1665 | 2.4439 | 6.4400e-003 | 0.6983 | 3.6000e-003 | 0.7019 | 0.1852 | 3.3100e-003 | 0.1885 | | 659.5660 | 659.5660 | 0.0182 | 0.0168 | 665.0336 |
| **Total** | **0.3085** | **0.1665** | **2.4439** | **6.4400e-003** | **0.6983** | **3.6000e-003** | **0.7019** | **0.1852** | **3.3100e-003** | **0.1885** | | **659.5660** | **659.5660** | **0.0182** | **0.0168** | **665.0336** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2024

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1808 | 1.2188 | 1.8101 | 2.9700e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | | 281.4481 | 281.4481 | 0.0159 | | 281.8443 |
| **Total** | **4.0393** | **1.2188** | **1.8101** | **2.9700e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | | **281.4481** | **281.4481** | **0.0159** | | **281.8443** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.2840 | 0.1467 | 2.2539 | 6.2300e-003 | 0.6983 | 3.4200e-003 | 0.7017 | 0.1852 | 3.1400e-003 | 0.1884 | | 642.8710 | 642.8710 | 0.0163 | 0.0155 | 647.9084 |
| **Total** | **0.2840** | **0.1467** | **2.2539** | **6.2300e-003** | **0.6983** | **3.4200e-003** | **0.7017** | **0.1852** | **3.1400e-003** | **0.1884** | | **642.8710** | **642.8710** | **0.0163** | **0.0155** | **647.9084** |

## 3.6 Architectural Coating - 2024

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1808 | 1.2188 | 1.8101 | 2.9700e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | 0.0000 | 281.4481 | 281.4481 | 0.0159 | | 281.8443 |
| **Total** | **4.0393** | **1.2188** | **1.8101** | **2.9700e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | **0.0000** | **281.4481** | **281.4481** | **0.0159** | | **281.8443** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.2840 | 0.1467 | 2.2539 | 6.2300e-003 | 0.6983 | 3.4200e-003 | 0.7017 | 0.1852 | 3.1400e-003 | 0.1884 | | 642.8710 | 642.8710 | 0.0163 | 0.0155 | 647.9084 |
| **Total** | **0.2840** | **0.1467** | **2.2539** | **6.2300e-003** | **0.6983** | **3.4200e-003** | **0.7017** | **0.1852** | **3.1400e-003** | **0.1884** | | **642.8710** | **642.8710** | **0.0163** | **0.0155** | **647.9084** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **4.0294** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.2629 | 0.1303 | 2.0872 | 6.0200e-003 | 0.6983 | 3.2500e-003 | 0.7015 | 0.1852 | 2.9900e-003 | 0.1882 | | 627.1449 | 627.1449 | 0.0146 | 0.0144 | 631.8138 |
| **Total** | **0.2629** | **0.1303** | **2.0872** | **6.0200e-003** | **0.6983** | **3.2500e-003** | **0.7015** | **0.1852** | **2.9900e-003** | **0.1882** | | **627.1449** | **627.1449** | **0.0146** | **0.0144** | **631.8138** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2025

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **4.0294** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.2629 | 0.1303 | 2.0872 | 6.0200e-003 | 0.6983 | 3.2500e-003 | 0.7015 | 0.1852 | 2.9900e-003 | 0.1882 | | 627.1449 | 627.1449 | 0.0146 | 0.0144 | 631.8138 |
| **Total** | **0.2629** | **0.1303** | **2.0872** | **6.0200e-003** | **0.6983** | **3.2500e-003** | **0.7015** | **0.1852** | **2.9900e-003** | **0.1882** | | **627.1449** | **627.1449** | **0.0146** | **0.0144** | **631.8138** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2026

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **4.0294** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.2447 | 0.1170 | 1.9595 | 5.8300e-003 | 0.6983 | 3.1100e-003 | 0.7014 | 0.1852 | 2.8600e-003 | 0.1881 | | 612.8021 | 612.8021 | 0.0132 | 0.0135 | 617.1693 |
| **Total** | **0.2447** | **0.1170** | **1.9595** | **5.8300e-003** | **0.6983** | **3.1100e-003** | **0.7014** | **0.1852** | **2.8600e-003** | **0.1881** | | **612.8021** | **612.8021** | **0.0132** | **0.0135** | **617.1693** |

## 3.6 Architectural Coating - 2026

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **4.0294** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.2447 | 0.1170 | 1.9595 | 5.8300e-003 | 0.6983 | 3.1100e-003 | 0.7014 | 0.1852 | 2.8600e-003 | 0.1881 | | 612.8021 | 612.8021 | 0.0132 | 0.0135 | 617.1693 |
| **Total** | **0.2447** | **0.1170** | **1.9595** | **5.8300e-003** | **0.6983** | **3.1100e-003** | **0.7014** | **0.1852** | **2.8600e-003** | **0.1881** | | **612.8021** | **612.8021** | **0.0132** | **0.0135** | **617.1693** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2027

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **4.0294** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.2284 | 0.1059 | 1.8421 | 5.6600e-003 | 0.6983 | 2.9300e-003 | 0.7012 | 0.1852 | 2.7000e-003 | 0.1879 | | 599.2181 | 599.2181 | 0.0120 | 0.0128 | 603.3308 |
| **Total** | **0.2284** | **0.1059** | **1.8421** | **5.6600e-003** | **0.6983** | **2.9300e-003** | **0.7012** | **0.1852** | **2.7000e-003** | **0.1879** | | **599.2181** | **599.2181** | **0.0120** | **0.0128** | **603.3308** |

## 3.6 Architectural Coating - 2027

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **4.0294** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.2284 | 0.1059 | 1.8421 | 5.6600e-003 | 0.6983 | 2.9300e-003 | 0.7012 | 0.1852 | 2.7000e-003 | 0.1879 | | 599.2181 | 599.2181 | 0.0120 | 0.0128 | 603.3308 |
| **Total** | **0.2284** | **0.1059** | **1.8421** | **5.6600e-003** | **0.6983** | **2.9300e-003** | **0.7012** | **0.1852** | **2.7000e-003** | **0.1879** | | **599.2181** | **599.2181** | **0.0120** | **0.0128** | **603.3308** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2028

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **4.0294** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.2136 | 0.0967 | 1.7453 | 5.5100e-003 | 0.6983 | 2.7500e-003 | 0.7010 | 0.1852 | 2.5300e-003 | 0.1877 | | 587.1778 | 587.1778 | 0.0110 | 0.0122 | 591.0790 |
| **Total** | **0.2136** | **0.0967** | **1.7453** | **5.5100e-003** | **0.6983** | **2.7500e-003** | **0.7010** | **0.1852** | **2.5300e-003** | **0.1877** | | **587.1778** | **587.1778** | **0.0110** | **0.0122** | **591.0790** |

## 3.6 Architectural Coating - 2028

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **4.0294** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.2136 | 0.0967 | 1.7453 | 5.5100e-003 | 0.6983 | 2.7500e-003 | 0.7010 | 0.1852 | 2.5300e-003 | 0.1877 | | 587.1778 | 587.1778 | 0.0110 | 0.0122 | 591.0790 |
| **Total** | **0.2136** | **0.0967** | **1.7453** | **5.5100e-003** | **0.6983** | **2.7500e-003** | **0.7010** | **0.1852** | **2.5300e-003** | **0.1877** | | **587.1778** | **587.1778** | **0.0110** | **0.0122** | **591.0790** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2029

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **4.0294** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1997 | 0.0890 | 1.6623 | 5.3700e-003 | 0.6983 | 2.5700e-003 | 0.7008 | 0.1852 | 2.3700e-003 | 0.1876 | | 576.4444 | 576.4444 | 0.0101 | 0.0117 | 580.1675 |
| **Total** | **0.1997** | **0.0890** | **1.6623** | **5.3700e-003** | **0.6983** | **2.5700e-003** | **0.7008** | **0.1852** | **2.3700e-003** | **0.1876** | | **576.4444** | **576.4444** | **0.0101** | **0.0117** | **580.1675** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2029

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **4.0294** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1997 | 0.0890 | 1.6623 | 5.3700e-003 | 0.6983 | 2.5700e-003 | 0.7008 | 0.1852 | 2.3700e-003 | 0.1876 | | 576.4444 | 576.4444 | 0.0101 | 0.0117 | 580.1675 |
| **Total** | **0.1997** | **0.0890** | **1.6623** | **5.3700e-003** | **0.6983** | **2.5700e-003** | **0.7008** | **0.1852** | **2.3700e-003** | **0.1876** | | **576.4444** | **576.4444** | **0.0101** | **0.0117** | **580.1675** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2030

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **3.9893** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1868 | 0.0825 | 1.5926 | 5.2400e-003 | 0.6983 | 2.4100e-003 | 0.7007 | 0.1852 | 2.2200e-003 | 0.1874 | | 567.0419 | 567.0419 | 9.3000e-003 | 0.0112 | 570.6157 |
| **Total** | **0.1868** | **0.0825** | **1.5926** | **5.2400e-003** | **0.6983** | **2.4100e-003** | **0.7007** | **0.1852** | **2.2200e-003** | **0.1874** | | **567.0419** | **567.0419** | **9.3000e-003** | **0.0112** | **570.6157** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2030

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | 0.0000 | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **3.9893** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | **0.0000** | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1868 | 0.0825 | 1.5926 | 5.2400e-003 | 0.6983 | 2.4100e-003 | 0.7007 | 0.1852 | 2.2200e-003 | 0.1874 | | 567.0419 | 567.0419 | 9.3000e-003 | 0.0112 | 570.6157 |
| **Total** | **0.1868** | **0.0825** | **1.5926** | **5.2400e-003** | **0.6983** | **2.4100e-003** | **0.7007** | **0.1852** | **2.2200e-003** | **0.1874** | | **567.0419** | **567.0419** | **9.3000e-003** | **0.0112** | **570.6157** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2031

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **3.9893** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1743 | 0.0767 | 1.5316 | 5.1300e-003 | 0.6983 | 2.2600e-003 | 0.7005 | 0.1852 | 2.0800e-003 | 0.1873 | | 558.6946 | 558.6946 | 8.6100e-003 | 0.0108 | 562.1399 |
| **Total** | **0.1743** | **0.0767** | **1.5316** | **5.1300e-003** | **0.6983** | **2.2600e-003** | **0.7005** | **0.1852** | **2.0800e-003** | **0.1873** | | **558.6946** | **558.6946** | **8.6100e-003** | **0.0108** | **562.1399** |

## 3.6 Architectural Coating - 2031

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | 0.0000 | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **3.9893** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | **0.0000** | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1743 | 0.0767 | 1.5316 | 5.1300e-003 | 0.6983 | 2.2600e-003 | 0.7005 | 0.1852 | 2.0800e-003 | 0.1873 | | 558.6946 | 558.6946 | 8.6100e-003 | 0.0108 | 562.1399 |
| **Total** | **0.1743** | **0.0767** | **1.5316** | **5.1300e-003** | **0.6983** | **2.2600e-003** | **0.7005** | **0.1852** | **2.0800e-003** | **0.1873** | | **558.6946** | **558.6946** | **8.6100e-003** | **0.0108** | **562.1399** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2032

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **3.9893** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1634 | 0.0721 | 1.4803 | 5.0400e-003 | 0.6983 | 2.1200e-003 | 0.7004 | 0.1852 | 1.9500e-003 | 0.1872 | | 551.3918 | 551.3918 | 8.0100e-003 | 0.0105 | 554.7326 |
| **Total** | **0.1634** | **0.0721** | **1.4803** | **5.0400e-003** | **0.6983** | **2.1200e-003** | **0.7004** | **0.1852** | **1.9500e-003** | **0.1872** | | **551.3918** | **551.3918** | **8.0100e-003** | **0.0105** | **554.7326** |

## 3.6 Architectural Coating - 2032

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | 0.0000 | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **3.9893** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | **0.0000** | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1634 | 0.0721 | 1.4803 | 5.0400e-003 | 0.6983 | 2.1200e-003 | 0.7004 | 0.1852 | 1.9500e-003 | 0.1872 | | 551.3918 | 551.3918 | 8.0100e-003 | 0.0105 | 554.7326 |
| **Total** | **0.1634** | **0.0721** | **1.4803** | **5.0400e-003** | **0.6983** | **2.1200e-003** | **0.7004** | **0.1852** | **1.9500e-003** | **0.1872** | | **551.3918** | **551.3918** | **8.0100e-003** | **0.0105** | **554.7326** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2033

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **3.9893** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1536 | 0.0683 | 1.4363 | 4.9500e-003 | 0.6983 | 1.9900e-003 | 0.7002 | 0.1852 | 1.8300e-003 | 0.1870 | | 544.9634 | 544.9634 | 7.4800e-003 | 0.0103 | 548.2176 |
| **Total** | **0.1536** | **0.0683** | **1.4363** | **4.9500e-003** | **0.6983** | **1.9900e-003** | **0.7002** | **0.1852** | **1.8300e-003** | **0.1870** | | **544.9634** | **544.9634** | **7.4800e-003** | **0.0103** | **548.2176** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2033

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | 0.0000 | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **3.9893** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | **0.0000** | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1536 | 0.0683 | 1.4363 | 4.9500e-003 | 0.6983 | 1.9900e-003 | 0.7002 | 0.1852 | 1.8300e-003 | 0.1870 | | 544.9634 | 544.9634 | 7.4800e-003 | 0.0103 | 548.2176 |
| **Total** | **0.1536** | **0.0683** | **1.4363** | **4.9500e-003** | **0.6983** | **1.9900e-003** | **0.7002** | **0.1852** | **1.8300e-003** | **0.1870** | | **544.9634** | **544.9634** | **7.4800e-003** | **0.0103** | **548.2176** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2034

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **3.9893** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1449 | 0.0653 | 1.3976 | 4.8800e-003 | 0.6983 | 1.8700e-003 | 0.7001 | 0.1852 | 1.7200e-003 | 0.1869 | | 539.3305 | 539.3305 | 7.0200e-003 | 0.0101 | 542.5138 |
| **Total** | **0.1449** | **0.0653** | **1.3976** | **4.8800e-003** | **0.6983** | **1.8700e-003** | **0.7001** | **0.1852** | **1.7200e-003** | **0.1869** | | **539.3305** | **539.3305** | **7.0200e-003** | **0.0101** | **542.5138** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2034

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | 0.0000 | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **3.9893** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | **0.0000** | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1449 | 0.0653 | 1.3976 | 4.8800e-003 | 0.6983 | 1.8700e-003 | 0.7001 | 0.1852 | 1.7200e-003 | 0.1869 | | 539.3305 | 539.3305 | 7.0200e-003 | 0.0101 | 542.5138 |
| **Total** | **0.1449** | **0.0653** | **1.3976** | **4.8800e-003** | **0.6983** | **1.8700e-003** | **0.7001** | **0.1852** | **1.7200e-003** | **0.1869** | | **539.3305** | **539.3305** | **7.0200e-003** | **0.0101** | **542.5138** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2035

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1179 | 0.7577 | 1.7943 | 2.9700e-003 | | 9.9000e-003 | 9.9000e-003 | | 9.9000e-003 | 9.9000e-003 | | 281.4481 | 281.4481 | 0.0104 | | 281.7081 |
| **Total** | **3.9764** | **0.7577** | **1.7943** | **2.9700e-003** | | **9.9000e-003** | **9.9000e-003** | | **9.9000e-003** | **9.9000e-003** | | **281.4481** | **281.4481** | **0.0104** | | **281.7081** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1371 | 0.0629 | 1.3649 | 4.8100e-003 | 0.6983 | 1.7600e-003 | 0.7000 | 0.1852 | 1.6200e-003 | 0.1868 | | 534.4808 | 534.4808 | 6.6100e-003 | 9.9400e-003 | 537.6076 |
| **Total** | **0.1371** | **0.0629** | **1.3649** | **4.8100e-003** | **0.6983** | **1.7600e-003** | **0.7000** | **0.1852** | **1.6200e-003** | **0.1868** | | **534.4808** | **534.4808** | **6.6100e-003** | **9.9400e-003** | **537.6076** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2035

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1179 | 0.7577 | 1.7943 | 2.9700e-003 | | 9.9000e-003 | 9.9000e-003 | | 9.9000e-003 | 9.9000e-003 | 0.0000 | 281.4481 | 281.4481 | 0.0104 | | 281.7081 |
| **Total** | **3.9764** | **0.7577** | **1.7943** | **2.9700e-003** | | **9.9000e-003** | **9.9000e-003** | | **9.9000e-003** | **9.9000e-003** | **0.0000** | **281.4481** | **281.4481** | **0.0104** | | **281.7081** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1371 | 0.0629 | 1.3649 | 4.8100e-003 | 0.6983 | 1.7600e-003 | 0.7000 | 0.1852 | 1.6200e-003 | 0.1868 | | 534.4808 | 534.4808 | 6.6100e-003 | 9.9400e-003 | 537.6076 |
| **Total** | **0.1371** | **0.0629** | **1.3649** | **4.8100e-003** | **0.6983** | **1.7600e-003** | **0.7000** | **0.1852** | **1.6200e-003** | **0.1868** | | **534.4808** | **534.4808** | **6.6100e-003** | **9.9400e-003** | **537.6076** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

# 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 7.3436 | 10.1011 | 65.9295 | 0.1670 | 20.4231 | 0.1142 | 20.5373 | 5.4473 | 0.1074 | 5.5547 | | 18,311.8873 | 18,311.8873 | 0.7238 | 0.8493 | 18,583.0635 |
| Unmitigated | 7.4058 | 10.2532 | 67.0155 | 0.1703 | 20.8399 | 0.1164 | 20.9563 | 5.5584 | 0.1095 | 5.6679 | | 18,674.6670 | 18,674.6670 | 0.7346 | 0.8633 | 18,950.2843 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 12.64 | 31.75 | 35.48 | 39,772 | 38,977 |
| Single Family Housing | 3,341.76 | 3,377.16 | 3026.70 | 9,568,036 | 9,376,675 |
| Total | 3,354.40 | 3,408.91 | 3,062.18 | 9,607,808 | 9,415,652 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Single Family Housing | 10.80 | 7.30 | 7.50 | 45.60 | 19.00 | 35.40 | 86 | 11 | 3 |

## 4.4 Fleet Mix

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.552787 | 0.055429 | 0.175422 | 0.126588 | 0.020626 | 0.005781 | 0.013059 | 0.024880 | 0.000595 | 0.000297 | 0.020966 | 0.001153 | 0.002414 |
| Single Family Housing | 0.552787 | 0.055429 | 0.175422 | 0.126588 | 0.020626 | 0.005781 | 0.013059 | 0.024880 | 0.000595 | 0.000297 | 0.020966 | 0.001153 | 0.002414 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.2475 | 2.1146 | 0.8998 | 0.0135 | | 0.1710 | 0.1710 | | 0.1710 | 0.1710 | | 2,699.5064 | 2,699.5064 | 0.0517 | 0.0495 | 2,715.5483 |
| NaturalGas Unmitigated | 0.2475 | 2.1146 | 0.8998 | 0.0135 | | 0.1710 | 0.1710 | | 0.1710 | 0.1710 | | 2,699.5064 | 2,699.5064 | 0.0517 | 0.0495 | 2,715.5483 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 22945.8 | 0.2475 | 2.1146 | 0.8998 | 0.0135 | | 0.1710 | 0.1710 | | 0.1710 | 0.1710 | | 2,699.5064 | 2,699.5064 | 0.0517 | 0.0495 | 2,715.5483 |
| **Total** | | **0.2475** | **2.1146** | **0.8998** | **0.0135** | | **0.1710** | **0.1710** | | **0.1710** | **0.1710** | | **2,699.5064** | **2,699.5064** | **0.0517** | **0.0495** | **2,715.5483** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 22.9458 | 0.2475 | 2.1146 | 0.8998 | 0.0135 | | 0.1710 | 0.1710 | | 0.1710 | 0.1710 | | 2,699.5064 | 2,699.5064 | 0.0517 | 0.0495 | 2,715.5483 |
| **Total** | | **0.2475** | **2.1146** | **0.8998** | **0.0135** | | **0.1710** | **0.1710** | | **0.1710** | **0.1710** | | **2,699.5064** | **2,699.5064** | **0.0517** | **0.0495** | **2,715.5483** |

## 6.0 Area Detail

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Cleaning Supplies

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 25.5676 | 4.8003 | 103.3851 | 0.2823 | | 13.4161 | 13.4161 | | 13.4161 | 13.4161 | 1,923.8342 | 4,159.8590 | 6,083.6932 | 9.0988 | 0.0756 | 6,333.6884 |
| Unmitigated | 26.9958 | 4.8689 | 110.3779 | 0.2828 | | 13.4572 | 13.4572 | | 13.4572 | 13.4572 | 1,923.8342 | 4,175.6499 | 6,099.4841 | 9.1226 | 0.0756 | 6,350.0755 |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 3.2771 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 13.6724 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 9.1760 | 4.5331 | 81.2734 | 0.2813 | | 13.2952 | 13.2952 | | 13.2952 | 13.2952 | 1,923.8342 | 4,123.0588 | 6,046.8931 | 9.0726 | 0.0756 | 6,296.2327 |
| Landscaping | 0.8703 | 0.3358 | 29.1044 | 1.5400e-003 | | 0.1620 | 0.1620 | | 0.1620 | 0.1620 | | 52.5911 | 52.5911 | 0.0501 | | 53.8428 |
| **Total** | **26.9958** | **4.8689** | **110.3779** | **0.2828** | | **13.4572** | **13.4572** | | **13.4572** | **13.4572** | **1,923.8342** | **4,175.6499** | **6,099.4841** | **9.1226** | **0.0756** | **6,350.0755** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 3.2771 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 12.6529 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 9.1760 | 4.5331 | 81.2734 | 0.2813 | | 13.2952 | 13.2952 | | 13.2952 | 13.2952 | 1,923.8342 | 4,123.0588 | 6,046.8931 | 9.0726 | 0.0756 | 6,296.2327 |
| Landscaping | 0.4616 | 0.2672 | 22.1117 | 1.0000e-003 | | 0.1208 | 0.1208 | | 0.1208 | 0.1208 | | 36.8002 | 36.8002 | 0.0262 | | 37.4557 |
| **Total** | **25.5676** | **4.8003** | **103.3851** | **0.2823** | | **13.4161** | **13.4161** | | **13.4161** | **13.4161** | **1,923.8342** | **4,159.8590** | **6,083.6932** | **9.0988** | **0.0756** | **6,333.6884** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

# Hat Ranch Project - Reduced Density Alternative

**San Joaquin Valley Unified APCD Air District, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| City Park | 16.20 | Acre | 16.20 | 705,672.00 | 0 |
| Single Family Housing | 354.00 | Dwelling Unit | 168.60 | 637,200.00 | 1123 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.7 | **Precipitation Freq (Days)** | 45 |
| **Climate Zone** | 2 | | | **Operational Year** | 2035 |
| **Utility Company** | Pacific Gas and Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 116.67 | **CH4 Intensity (lb/MWhr)** | 0.033 | **N2O Intensity (lb/MWhr)** | 0.004 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor adjusted per PG&E's compliance with RPS.

Land Use - Lot acrages adjusted according to site plan.

Construction Phase - Architectural coating phase timing adjusted to occur during building construction.

Vehicle Trips -

Mobile Land Use Mitigation -

Area Mitigation - All electric landscaping equipment would be used, pursuant to AB 1346
Low VOC cleaning supplies required, per SJVAPCD Rule 4663

Water Mitigation - Water conservation strategy applied to reflect compliance with MWELO.

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstructionPhase | NumDays | 220.00 | 3,100.00 |
| tblConstructionPhase | PhaseEndDate | 7/17/2037 | 9/27/2035 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | |
|---|---|---|---|
| tblConstructionPhase | PhaseEndDate | 11/9/2035 | 9/13/2035 |
| tblConstructionPhase | PhaseEndDate | 9/12/2036 | 10/26/2023 |
| tblConstructionPhase | PhaseStartDate | 9/13/2036 | 11/10/2023 |
| tblConstructionPhase | PhaseStartDate | 12/23/2023 | 10/27/2023 |
| tblConstructionPhase | PhaseStartDate | 11/10/2035 | 12/23/2022 |
| tblLandUse | LotAcreage | 114.94 | 168.60 |
| tblProjectCharacteristics | CO2IntensityFactor | 203.98 | 116.67 |

## 2.0 Emissions Summary

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2022 | 4.8510 | 50.0610 | 44.5635 | 0.0873 | 19.8049 | 2.2044 | 21.4183 | 10.1417 | 2.0280 | 11.6260 | 0.0000 | 8,467.2221 | 8,467.2221 | 2.6675 | 8.4400e-003 | 8,536.4244 |
| 2023 | 10.8222 | 58.3994 | 61.2490 | 0.1588 | 14.5933 | 2.2615 | 16.8548 | 5.1071 | 2.1026 | 7.2096 | 0.0000 | 15,786.0224 | 15,786.0224 | 2.7084 | 0.6087 | 16,035.1326 |
| 2024 | 7.1930 | 22.6763 | 31.6539 | 0.0937 | 5.2254 | 0.7391 | 5.9645 | 1.4097 | 0.6992 | 2.1089 | 0.0000 | 9,496.6791 | 9,496.6791 | 0.7423 | 0.5875 | 9,690.3209 |
| 2025 | 6.9653 | 21.4889 | 30.7126 | 0.0921 | 5.2254 | 0.6430 | 5.8684 | 1.4097 | 0.6082 | 2.0179 | 0.0000 | 9,355.8290 | 9,355.8290 | 0.7272 | 0.5709 | 9,544.1467 |
| 2026 | 6.8680 | 21.3566 | 30.0410 | 0.0905 | 5.2254 | 0.6419 | 5.8673 | 1.4097 | 0.6072 | 2.0169 | 0.0000 | 9,220.5081 | 9,220.5081 | 0.7177 | 0.5555 | 9,404.0013 |
| 2027 | 6.7804 | 21.2325 | 29.4288 | 0.0890 | 5.2254 | 0.6405 | 5.8660 | 1.4097 | 0.6059 | 2.0157 | 0.0000 | 9,084.9171 | 9,084.9171 | 0.7094 | 0.5406 | 9,263.7503 |
| 2028 | 6.7004 | 21.1335 | 28.9224 | 0.0876 | 5.2254 | 0.6391 | 5.8646 | 1.4097 | 0.6046 | 2.0144 | 0.0000 | 8,960.2338 | 8,960.2338 | 0.7024 | 0.5269 | 9,134.8151 |
| 2029 | 6.6253 | 21.0402 | 28.4843 | 0.0863 | 5.2254 | 0.6378 | 5.8632 | 1.4097 | 0.6033 | 2.0131 | 0.0000 | 8,844.4019 | 8,844.4019 | 0.6961 | 0.5143 | 9,015.0551 |
| 2030 | 6.4576 | 16.1416 | 28.1785 | 0.0892 | 5.2254 | 0.2259 | 5.4513 | 1.4098 | 0.2229 | 1.6326 | 0.0000 | 9,082.0687 | 9,082.0687 | 0.2021 | 0.5030 | 9,237.0260 |
| 2031 | 6.3905 | 16.0823 | 27.8590 | 0.0881 | 5.2254 | 0.2248 | 5.4502 | 1.4098 | 0.2218 | 1.6316 | 0.0000 | 8,990.1423 | 8,990.1423 | 0.1973 | 0.4932 | 9,142.0574 |
| 2032 | 6.3327 | 16.0336 | 27.5928 | 0.0872 | 5.2254 | 0.2238 | 5.4492 | 1.4098 | 0.2209 | 1.6306 | 0.0000 | 8,909.3166 | 8,909.3166 | 0.1931 | 0.4848 | 9,058.6144 |
| 2033 | 6.2808 | 15.9940 | 27.3663 | 0.0864 | 5.2254 | 0.2228 | 5.4482 | 1.4098 | 0.2200 | 1.6298 | 0.0000 | 8,838.1688 | 8,838.1688 | 0.1895 | 0.4775 | 8,985.2065 |
| 2034 | 6.2356 | 15.9566 | 27.1684 | 0.0857 | 5.2254 | 0.2219 | 5.4473 | 1.4098 | 0.2192 | 1.6289 | 0.0000 | 8,774.7221 | 8,774.7221 | 0.1863 | 0.4711 | 8,919.7636 |
| 2035 | 6.0901 | 15.0492 | 26.9572 | 0.0851 | 5.2254 | 0.1529 | 5.3784 | 1.4098 | 0.1502 | 1.5600 | 0.0000 | 8,719.1288 | 8,719.1288 | 0.1742 | 0.4655 | 8,862.2065 |
| **Maximum** | **10.8222** | **58.3994** | **61.2490** | **0.1588** | **19.8049** | **2.2615** | **21.4183** | **10.1417** | **2.1026** | **11.6260** | **0.0000** | **15,786.0224** | **15,786.0224** | **2.7084** | **0.6087** | **16,035.1326** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 2.1 Overall Construction (Maximum Daily Emission)

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2022 | 4.8510 | 50.0610 | 44.5635 | 0.0873 | 19.8049 | 2.2044 | 21.4183 | 10.1417 | 2.0280 | 11.6260 | 0.0000 | 8,467.2221 | 8,467.2221 | 2.6675 | 8.4400e-003 | 8,536.4244 |
| 2023 | 10.8222 | 58.3994 | 61.2490 | 0.1588 | 14.5933 | 2.2615 | 16.8548 | 5.1071 | 2.1026 | 7.2096 | 0.0000 | 15,786.0224 | 15,786.0224 | 2.7084 | 0.6087 | 16,035.1325 |
| 2024 | 7.1930 | 22.6763 | 31.6539 | 0.0937 | 5.2254 | 0.7391 | 5.9645 | 1.4097 | 0.6992 | 2.1089 | 0.0000 | 9,496.6791 | 9,496.6791 | 0.7423 | 0.5875 | 9,690.3209 |
| 2025 | 6.9653 | 21.4889 | 30.7126 | 0.0921 | 5.2254 | 0.6430 | 5.8684 | 1.4097 | 0.6082 | 2.0179 | 0.0000 | 9,355.8290 | 9,355.8290 | 0.7272 | 0.5709 | 9,544.1467 |
| 2026 | 6.8680 | 21.3566 | 30.0410 | 0.0905 | 5.2254 | 0.6419 | 5.8673 | 1.4097 | 0.6072 | 2.0169 | 0.0000 | 9,220.5081 | 9,220.5081 | 0.7177 | 0.5555 | 9,404.0013 |
| 2027 | 6.7804 | 21.2325 | 29.4288 | 0.0890 | 5.2254 | 0.6405 | 5.8660 | 1.4097 | 0.6059 | 2.0157 | 0.0000 | 9,084.9171 | 9,084.9171 | 0.7094 | 0.5406 | 9,263.7503 |
| 2028 | 6.7004 | 21.1335 | 28.9224 | 0.0876 | 5.2254 | 0.6391 | 5.8646 | 1.4097 | 0.6046 | 2.0144 | 0.0000 | 8,960.2338 | 8,960.2338 | 0.7024 | 0.5269 | 9,134.8151 |
| 2029 | 6.6253 | 21.0402 | 28.4843 | 0.0863 | 5.2254 | 0.6378 | 5.8632 | 1.4097 | 0.6033 | 2.0131 | 0.0000 | 8,844.4019 | 8,844.4019 | 0.6961 | 0.5143 | 9,015.0551 |
| 2030 | 6.4576 | 16.1416 | 28.1785 | 0.0892 | 5.2254 | 0.2259 | 5.4513 | 1.4098 | 0.2229 | 1.6326 | 0.0000 | 9,082.0687 | 9,082.0687 | 0.2021 | 0.5030 | 9,237.0260 |
| 2031 | 6.3905 | 16.0823 | 27.8590 | 0.0881 | 5.2254 | 0.2248 | 5.4502 | 1.4098 | 0.2218 | 1.6316 | 0.0000 | 8,990.1423 | 8,990.1423 | 0.1973 | 0.4932 | 9,142.0574 |
| 2032 | 6.3327 | 16.0336 | 27.5928 | 0.0872 | 5.2254 | 0.2238 | 5.4492 | 1.4098 | 0.2209 | 1.6306 | 0.0000 | 8,909.3166 | 8,909.3166 | 0.1931 | 0.4848 | 9,058.6143 |
| 2033 | 6.2808 | 15.9940 | 27.3663 | 0.0864 | 5.2254 | 0.2228 | 5.4482 | 1.4098 | 0.2200 | 1.6298 | 0.0000 | 8,838.1688 | 8,838.1688 | 0.1895 | 0.4775 | 8,985.2065 |
| 2034 | 6.2356 | 15.9566 | 27.1684 | 0.0857 | 5.2254 | 0.2219 | 5.4473 | 1.4098 | 0.2192 | 1.6289 | 0.0000 | 8,774.7221 | 8,774.7221 | 0.1863 | 0.4711 | 8,919.7636 |
| 2035 | 6.0901 | 15.0492 | 26.9572 | 0.0851 | 5.2254 | 0.1529 | 5.3784 | 1.4098 | 0.1502 | 1.5600 | 0.0000 | 8,719.1288 | 8,719.1288 | 0.1742 | 0.4655 | 8,862.2065 |
| **Maximum** | **10.8222** | **58.3994** | **61.2490** | **0.1588** | **19.8049** | **2.2615** | **21.4183** | **10.1417** | **2.1026** | **11.6260** | **0.0000** | **15,786.0224** | **15,786.0224** | **2.7084** | **0.6087** | **16,035.1325** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 26.9958 | 4.8689 | 110.3779 | 0.2828 | | 13.4572 | 13.4572 | | 13.4572 | 13.4572 | 1,923.8342 | 4,175.6499 | 6,099.4841 | 9.1226 | 0.0756 | 6,350.0755 |
| Energy | 0.2475 | 2.1146 | 0.8998 | 0.0135 | | 0.1710 | 0.1710 | | 0.1710 | 0.1710 | | 2,699.5064 | 2,699.5064 | 0.0517 | 0.0495 | 2,715.5483 |
| Mobile | 5.7927 | 11.4215 | 65.4189 | 0.1566 | 20.8399 | 0.1165 | 20.9564 | 5.5584 | 0.1096 | 5.6680 | | 17,149.1736 | 17,149.1736 | 0.8046 | 0.9122 | 17,441.1323 |
| **Total** | **33.0360** | **18.4050** | **176.6966** | **0.4530** | **20.8399** | **13.7447** | **34.5846** | **5.5584** | **13.7378** | **19.2962** | **1,923.8342** | **24,024.3300** | **25,948.1642** | **9.9790** | **1.0373** | **26,506.7560** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 25.5676 | 4.8003 | 103.3851 | 0.2823 | | 13.4161 | 13.4161 | | 13.4161 | 13.4161 | 1,923.8342 | 4,159.8590 | 6,083.6932 | 9.0988 | 0.0756 | 6,333.6884 |
| Energy | 0.2475 | 2.1146 | 0.8998 | 0.0135 | | 0.1710 | 0.1710 | | 0.1710 | 0.1710 | | 2,699.5064 | 2,699.5064 | 0.0517 | 0.0495 | 2,715.5483 |
| Mobile | 5.7285 | 11.2519 | 64.4632 | 0.1536 | 20.4231 | 0.1144 | 20.5374 | 5.4473 | 0.1075 | 5.5548 | | 16,817.2107 | 16,817.2107 | 0.7938 | 0.8976 | 17,104.5390 |
| **Total** | **31.5436** | **18.1668** | **168.7482** | **0.4494** | **20.4231** | **13.7014** | **34.1245** | **5.4473** | **13.6946** | **19.1418** | **1,923.8342** | **23,676.5761** | **25,600.4104** | **9.9443** | **1.0227** | **26,153.7757** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | 4.52 | 1.29 | 4.50 | 0.79 | 2.00 | 0.31 | 1.33 | 2.00 | 0.31 | 0.80 | 0.00 | 1.45 | 1.34 | 0.35 | 1.41 | 1.33 |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 5/1/2022 | 10/14/2022 | 5 | 120 | |
| 2 | Grading | Grading | 10/15/2022 | 12/22/2023 | 5 | 310 | |
| 3 | Building Construction | Building Construction | 10/27/2023 | 9/13/2035 | 5 | 3100 | |
| 4 | Paving | Paving | 12/23/2022 | 10/26/2023 | 5 | 220 | |
| 5 | Architectural Coating | Architectural Coating | 11/10/2023 | 9/27/2035 | 5 | 3100 | |

**Acres of Grading (Site Preparation Phase): 180**

**Acres of Grading (Grading Phase): 930**

**Acres of Paving: 0**

**Residential Indoor: 1,290,330; Residential Outdoor: 430,110; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | | | |
|---|---|---|---|---|---|
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 424.00 | 154.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 85.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.2 Site Preparation - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 19.6570 | 0.0000 | 19.6570 | 10.1025 | 0.0000 | 10.1025 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.1701 | 33.0835 | 19.6978 | 0.0380 | | 1.6126 | 1.6126 | | 1.4836 | 1.4836 | | 3,686.0619 | 3,686.0619 | 1.1922 | | 3,715.8655 |
| **Total** | **3.1701** | **33.0835** | **19.6978** | **0.0380** | **19.6570** | **1.6126** | **21.2696** | **10.1025** | **1.4836** | **11.5860** | | **3,686.0619** | **3,686.0619** | **1.1922** | | **3,715.8655** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0634 | 0.0476 | 0.4842 | 1.2500e-003 | 0.1479 | 8.1000e-004 | 0.1487 | 0.0392 | 7.5000e-004 | 0.0400 | | 127.6206 | 127.6206 | 4.7700e-003 | 4.3400e-003 | 129.0334 |
| **Total** | **0.0634** | **0.0476** | **0.4842** | **1.2500e-003** | **0.1479** | **8.1000e-004** | **0.1487** | **0.0392** | **7.5000e-004** | **0.0400** | | **127.6206** | **127.6206** | **4.7700e-003** | **4.3400e-003** | **129.0334** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.2 Site Preparation - 2022

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 19.6570 | 0.0000 | 19.6570 | 10.1025 | 0.0000 | 10.1025 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.1701 | 33.0835 | 19.6978 | 0.0380 | | 1.6126 | 1.6126 | | 1.4836 | 1.4836 | 0.0000 | 3,686.0619 | 3,686.0619 | 1.1922 | | 3,715.8655 |
| **Total** | **3.1701** | **33.0835** | **19.6978** | **0.0380** | **19.6570** | **1.6126** | **21.2696** | **10.1025** | **1.4836** | **11.5860** | **0.0000** | **3,686.0619** | **3,686.0619** | **1.1922** | | **3,715.8655** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0634 | 0.0476 | 0.4842 | 1.2500e-003 | 0.1479 | 8.1000e-004 | 0.1487 | 0.0392 | 7.5000e-004 | 0.0400 | | 127.6206 | 127.6206 | 4.7700e-003 | 4.3400e-003 | 129.0334 |
| **Total** | **0.0634** | **0.0476** | **0.4842** | **1.2500e-003** | **0.1479** | **8.1000e-004** | **0.1487** | **0.0392** | **7.5000e-004** | **0.0400** | | **127.6206** | **127.6206** | **4.7700e-003** | **4.3400e-003** | **129.0334** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.6248 | 38.8435 | 29.0415 | 0.0621 | | 1.6349 | 1.6349 | | 1.5041 | 1.5041 | | 6,011.4105 | 6,011.4105 | 1.9442 | | 6,060.0158 |
| **Total** | **3.6248** | **38.8435** | **29.0415** | **0.0621** | **9.2036** | **1.6349** | **10.8385** | **3.6538** | **1.5041** | **5.1579** | | **6,011.4105** | **6,011.4105** | **1.9442** | | **6,060.0158** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0705 | 0.0529 | 0.5380 | 1.3900e-003 | 0.1643 | 9.0000e-004 | 0.1652 | 0.0436 | 8.3000e-004 | 0.0444 | | 141.8007 | 141.8007 | 5.3000e-003 | 4.8200e-003 | 143.3704 |
| **Total** | **0.0705** | **0.0529** | **0.5380** | **1.3900e-003** | **0.1643** | **9.0000e-004** | **0.1652** | **0.0436** | **8.3000e-004** | **0.0444** | | **141.8007** | **141.8007** | **5.3000e-003** | **4.8200e-003** | **143.3704** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2022

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.6248 | 38.8435 | 29.0415 | 0.0621 | | 1.6349 | 1.6349 | | 1.5041 | 1.5041 | 0.0000 | 6,011.4105 | 6,011.4105 | 1.9442 | | 6,060.0158 |
| **Total** | **3.6248** | **38.8435** | **29.0415** | **0.0621** | **9.2036** | **1.6349** | **10.8385** | **3.6538** | **1.5041** | **5.1579** | **0.0000** | **6,011.4105** | **6,011.4105** | **1.9442** | | **6,060.0158** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0705 | 0.0529 | 0.5380 | 1.3900e-003 | 0.1643 | 9.0000e-004 | 0.1652 | 0.0436 | 8.3000e-004 | 0.0444 | | 141.8007 | 141.8007 | 5.3000e-003 | 4.8200e-003 | 143.3704 |
| **Total** | **0.0705** | **0.0529** | **0.5380** | **1.3900e-003** | **0.1643** | **9.0000e-004** | **0.1652** | **0.0436** | **8.3000e-004** | **0.0444** | | **141.8007** | **141.8007** | **5.3000e-003** | **4.8200e-003** | **143.3704** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.3217 | 34.5156 | 28.0512 | 0.0621 | | 1.4245 | 1.4245 | | 1.3105 | 1.3105 | | 6,011.4777 | 6,011.4777 | 1.9442 | | 6,060.0836 |
| **Total** | **3.3217** | **34.5156** | **28.0512** | **0.0621** | **9.2036** | **1.4245** | **10.6281** | **3.6538** | **1.3105** | **4.9643** | | **6,011.4777** | **6,011.4777** | **1.9442** | | **6,060.0836** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0647 | 0.0462 | 0.4922 | 1.3500e-003 | 0.1643 | 8.5000e-004 | 0.1651 | 0.0436 | 7.8000e-004 | 0.0444 | | 138.0905 | 138.0905 | 4.7500e-003 | 4.4200e-003 | 139.5271 |
| **Total** | **0.0647** | **0.0462** | **0.4922** | **1.3500e-003** | **0.1643** | **8.5000e-004** | **0.1651** | **0.0436** | **7.8000e-004** | **0.0444** | | **138.0905** | **138.0905** | **4.7500e-003** | **4.4200e-003** | **139.5271** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2023

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.3217 | 34.5156 | 28.0512 | 0.0621 | | 1.4245 | 1.4245 | | 1.3105 | 1.3105 | 0.0000 | 6,011.4777 | 6,011.4777 | 1.9442 | | 6,060.0836 |
| **Total** | **3.3217** | **34.5156** | **28.0512** | **0.0621** | **9.2036** | **1.4245** | **10.6281** | **3.6538** | **1.3105** | **4.9643** | **0.0000** | **6,011.4777** | **6,011.4777** | **1.9442** | | **6,060.0836** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0647 | 0.0462 | 0.4922 | 1.3500e-003 | 0.1643 | 8.5000e-004 | 0.1651 | 0.0436 | 7.8000e-004 | 0.0444 | | 138.0905 | 138.0905 | 4.7500e-003 | 4.4200e-003 | 139.5271 |
| **Total** | **0.0647** | **0.0462** | **0.4922** | **1.3500e-003** | **0.1643** | **8.5000e-004** | **0.1651** | **0.0436** | **7.8000e-004** | **0.0444** | | **138.0905** | **138.0905** | **4.7500e-003** | **4.4200e-003** | **139.5271** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1651 | 6.9730 | 2.1241 | 0.0311 | 1.0441 | 0.0441 | 1.0882 | 0.3007 | 0.0422 | 0.3428 | | 3,285.3923 | 3,285.3923 | 0.0137 | 0.4918 | 3,432.2815 |
| Worker | 1.3725 | 0.9802 | 10.4346 | 0.0286 | 3.4831 | 0.0180 | 3.5010 | 0.9239 | 0.0165 | 0.9404 | | 2,927.5192 | 2,927.5192 | 0.1008 | 0.0938 | 2,957.9750 |
| **Total** | **1.5377** | **7.9532** | **12.5587** | **0.0597** | **4.5272** | **0.0621** | **4.5892** | **1.2245** | **0.0587** | **1.2832** | | **6,212.9114** | **6,212.9114** | **0.1145** | **0.5855** | **6,390.2565** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2023

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | 0.0000 | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | **0.0000** | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1651 | 6.9730 | 2.1241 | 0.0311 | 1.0441 | 0.0441 | 1.0882 | 0.3007 | 0.0422 | 0.3428 | | 3,285.3923 | 3,285.3923 | 0.0137 | 0.4918 | 3,432.2815 |
| Worker | 1.3725 | 0.9802 | 10.4346 | 0.0286 | 3.4831 | 0.0180 | 3.5010 | 0.9239 | 0.0165 | 0.9404 | | 2,927.5192 | 2,927.5192 | 0.1008 | 0.0938 | 2,957.9750 |
| **Total** | **1.5377** | **7.9532** | **12.5587** | **0.0597** | **4.5272** | **0.0621** | **4.5892** | **1.2245** | **0.0587** | **1.2832** | | **6,212.9114** | **6,212.9114** | **0.1145** | **0.5855** | **6,390.2565** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2024

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4716 | 13.4438 | 16.1668 | 0.0270 | | 0.6133 | 0.6133 | | 0.5769 | 0.5769 | | 2,555.6989 | 2,555.6989 | 0.6044 | | 2,570.8077 |
| **Total** | **1.4716** | **13.4438** | **16.1668** | **0.0270** | | **0.6133** | **0.6133** | | **0.5769** | **0.5769** | | **2,555.6989** | **2,555.6989** | **0.6044** | | **2,570.8077** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1605 | 6.9775 | 2.0731 | 0.0306 | 1.0441 | 0.0445 | 1.0885 | 0.3007 | 0.0425 | 0.3432 | | 3,232.9167 | 3,232.9167 | 0.0131 | 0.4837 | 3,377.3718 |
| Worker | 1.2675 | 0.8632 | 9.6661 | 0.0277 | 3.4831 | 0.0170 | 3.5001 | 0.9239 | 0.0157 | 0.9396 | | 2,854.3908 | 2,854.3908 | 0.0908 | 0.0865 | 2,882.4479 |
| **Total** | **1.4281** | **7.8407** | **11.7392** | **0.0583** | **4.5272** | **0.0615** | **4.5886** | **1.2245** | **0.0582** | **1.2827** | | **6,087.3075** | **6,087.3075** | **0.1039** | **0.5702** | **6,259.8198** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2024

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4716 | 13.4438 | 16.1668 | 0.0270 | | 0.6133 | 0.6133 | | 0.5769 | 0.5769 | 0.0000 | 2,555.6989 | 2,555.6989 | 0.6044 | | 2,570.8077 |
| **Total** | **1.4716** | **13.4438** | **16.1668** | **0.0270** | | **0.6133** | **0.6133** | | **0.5769** | **0.5769** | **0.0000** | **2,555.6989** | **2,555.6989** | **0.6044** | | **2,570.8077** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1605 | 6.9775 | 2.0731 | 0.0306 | 1.0441 | 0.0445 | 1.0885 | 0.3007 | 0.0425 | 0.3432 | | 3,232.9167 | 3,232.9167 | 0.0131 | 0.4837 | 3,377.3718 |
| Worker | 1.2675 | 0.8632 | 9.6661 | 0.0277 | 3.4831 | 0.0170 | 3.5001 | 0.9239 | 0.0157 | 0.9396 | | 2,854.3908 | 2,854.3908 | 0.0908 | 0.0865 | 2,882.4479 |
| **Total** | **1.4281** | **7.8407** | **11.7392** | **0.0583** | **4.5272** | **0.0615** | **4.5886** | **1.2245** | **0.0582** | **1.2827** | | **6,087.3075** | **6,087.3075** | **0.1039** | **0.5702** | **6,259.8198** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1566 | 6.9534 | 2.0302 | 0.0300 | 1.0441 | 0.0444 | 1.0885 | 0.3007 | 0.0425 | 0.3432 | | 3,174.0725 | 3,174.0725 | 0.0125 | 0.4744 | 3,315.7670 |
| Worker | 1.1761 | 0.7666 | 8.9870 | 0.0267 | 3.4831 | 0.0162 | 3.4993 | 0.9239 | 0.0149 | 0.9388 | | 2,785.4336 | 2,785.4336 | 0.0819 | 0.0804 | 2,811.4364 |
| **Total** | **1.3327** | **7.7200** | **11.0171** | **0.0568** | **4.5272** | **0.0607** | **4.5878** | **1.2245** | **0.0574** | **1.2820** | | **5,959.5060** | **5,959.5060** | **0.0945** | **0.5548** | **6,127.2034** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2025

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1566 | 6.9534 | 2.0302 | 0.0300 | 1.0441 | 0.0444 | 1.0885 | 0.3007 | 0.0425 | 0.3432 | | 3,174.0725 | 3,174.0725 | 0.0125 | 0.4744 | 3,315.7670 |
| Worker | 1.1761 | 0.7666 | 8.9870 | 0.0267 | 3.4831 | 0.0162 | 3.4993 | 0.9239 | 0.0149 | 0.9388 | | 2,785.4336 | 2,785.4336 | 0.0819 | 0.0804 | 2,811.4364 |
| **Total** | **1.3327** | **7.7200** | **11.0171** | **0.0568** | **4.5272** | **0.0607** | **4.5878** | **1.2245** | **0.0574** | **1.2820** | | **5,959.5060** | **5,959.5060** | **0.0945** | **0.5548** | **6,127.2034** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2026

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1531 | 6.9154 | 1.9951 | 0.0295 | 1.0441 | 0.0442 | 1.0883 | 0.3007 | 0.0423 | 0.3430 | | 3,114.4196 | 3,114.4196 | 0.0121 | 0.4651 | 3,253.3118 |
| Worker | 1.0980 | 0.6881 | 8.4568 | 0.0259 | 3.4831 | 0.0155 | 3.4986 | 0.9239 | 0.0143 | 0.9381 | | 2,722.4017 | 2,722.4017 | 0.0744 | 0.0754 | 2,746.7199 |
| **Total** | **1.2511** | **7.6035** | **10.4518** | **0.0554** | **4.5272** | **0.0597** | **4.5869** | **1.2245** | **0.0566** | **1.2811** | | **5,836.8212** | **5,836.8212** | **0.0865** | **0.5404** | **6,000.0317** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2026

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1531 | 6.9154 | 1.9951 | 0.0295 | 1.0441 | 0.0442 | 1.0883 | 0.3007 | 0.0423 | 0.3430 | | 3,114.4196 | 3,114.4196 | 0.0121 | 0.4651 | 3,253.3118 |
| Worker | 1.0980 | 0.6881 | 8.4568 | 0.0259 | 3.4831 | 0.0155 | 3.4986 | 0.9239 | 0.0143 | 0.9381 | | 2,722.4017 | 2,722.4017 | 0.0744 | 0.0754 | 2,746.7199 |
| **Total** | **1.2511** | **7.6035** | **10.4518** | **0.0554** | **4.5272** | **0.0597** | **4.5869** | **1.2245** | **0.0566** | **1.2811** | | **5,836.8212** | **5,836.8212** | **0.0865** | **0.5404** | **6,000.0317** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2027

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1502 | 6.8698 | 1.9660 | 0.0289 | 1.0441 | 0.0439 | 1.0880 | 0.3007 | 0.0420 | 0.3427 | | 3,050.6940 | 3,050.6940 | 0.0117 | 0.4552 | 3,186.6312 |
| Worker | 1.0275 | 0.6226 | 7.9711 | 0.0252 | 3.4831 | 0.0146 | 3.4977 | 0.9239 | 0.0135 | 0.9373 | | 2,662.5373 | 2,662.5373 | 0.0678 | 0.0712 | 2,685.4354 |
| **Total** | **1.1777** | **7.4925** | **9.9371** | **0.0540** | **4.5272** | **0.0585** | **4.5857** | **1.2245** | **0.0555** | **1.2800** | | **5,713.2313** | **5,713.2313** | **0.0795** | **0.5263** | **5,872.0666** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2027

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1502 | 6.8698 | 1.9660 | 0.0289 | 1.0441 | 0.0439 | 1.0880 | 0.3007 | 0.0420 | 0.3427 | | 3,050.6940 | 3,050.6940 | 0.0117 | 0.4552 | 3,186.6312 |
| Worker | 1.0275 | 0.6226 | 7.9711 | 0.0252 | 3.4831 | 0.0146 | 3.4977 | 0.9239 | 0.0135 | 0.9373 | | 2,662.5373 | 2,662.5373 | 0.0678 | 0.0712 | 2,685.4354 |
| **Total** | **1.1777** | **7.4925** | **9.9371** | **0.0540** | **4.5272** | **0.0585** | **4.5857** | **1.2245** | **0.0555** | **1.2800** | | **5,713.2313** | **5,713.2313** | **0.0795** | **0.5263** | **5,872.0666** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2028

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1477 | 6.8359 | 1.9428 | 0.0283 | 1.0441 | 0.0436 | 1.0877 | 0.3007 | 0.0417 | 0.3424 | | 2,989.8324 | 2,989.8324 | 0.0114 | 0.4457 | 3,122.9358 |
| Worker | 0.9629 | 0.5684 | 7.5685 | 0.0245 | 3.4831 | 0.0137 | 3.4968 | 0.9239 | 0.0126 | 0.9365 | | 2,609.3735 | 2,609.3735 | 0.0622 | 0.0677 | 2,631.0902 |
| **Total** | **1.1106** | **7.4043** | **9.5113** | **0.0528** | **4.5272** | **0.0573** | **4.5845** | **1.2245** | **0.0543** | **1.2789** | | **5,599.2059** | **5,599.2059** | **0.0736** | **0.5134** | **5,754.0260** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2028

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1477 | 6.8359 | 1.9428 | 0.0283 | 1.0441 | 0.0436 | 1.0877 | 0.3007 | 0.0417 | 0.3424 | | 2,989.8324 | 2,989.8324 | 0.0114 | 0.4457 | 3,122.9358 |
| Worker | 0.9629 | 0.5684 | 7.5685 | 0.0245 | 3.4831 | 0.0137 | 3.4968 | 0.9239 | 0.0126 | 0.9365 | | 2,609.3735 | 2,609.3735 | 0.0622 | 0.0677 | 2,631.0902 |
| **Total** | **1.1106** | **7.4043** | **9.5113** | **0.0528** | **4.5272** | **0.0573** | **4.5845** | **1.2245** | **0.0543** | **1.2789** | | **5,599.2059** | **5,599.2059** | **0.0736** | **0.5134** | **5,754.0260** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2029

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1455 | 6.7977 | 1.9228 | 0.0277 | 1.0441 | 0.0433 | 1.0874 | 0.3007 | 0.0414 | 0.3421 | | 2,931.0244 | 2,931.0244 | 0.0111 | 0.4366 | 3,061.3944 |
| Worker | 0.9022 | 0.5226 | 7.2202 | 0.0239 | 3.4831 | 0.0128 | 3.4959 | 0.9239 | 0.0118 | 0.9357 | | 2,561.8722 | 2,561.8722 | 0.0573 | 0.0647 | 2,582.5938 |
| **Total** | **1.0477** | **7.3203** | **9.1431** | **0.0516** | **4.5272** | **0.0561** | **4.5833** | **1.2245** | **0.0532** | **1.2778** | | **5,492.8966** | **5,492.8966** | **0.0684** | **0.5013** | **5,643.9882** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2029

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1455 | 6.7977 | 1.9228 | 0.0277 | 1.0441 | 0.0433 | 1.0874 | 0.3007 | 0.0414 | 0.3421 | | 2,931.0244 | 2,931.0244 | 0.0111 | 0.4366 | 3,061.3944 |
| Worker | 0.9022 | 0.5226 | 7.2202 | 0.0239 | 3.4831 | 0.0128 | 3.4959 | 0.9239 | 0.0118 | 0.9357 | | 2,561.8722 | 2,561.8722 | 0.0573 | 0.0647 | 2,582.5938 |
| **Total** | **1.0477** | **7.3203** | **9.1431** | **0.0516** | **4.5272** | **0.0561** | **4.5833** | **1.2245** | **0.0532** | **1.2778** | | **5,492.8966** | **5,492.8966** | **0.0684** | **0.5013** | **5,643.9882** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2030

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1437 | 6.7697 | 1.9077 | 0.0272 | 1.0441 | 0.0430 | 1.0871 | 0.3007 | 0.0412 | 0.3418 | | 2,877.6751 | 2,877.6751 | 0.0109 | 0.4283 | 3,005.5687 |
| Worker | 0.8460 | 0.4841 | 6.9274 | 0.0233 | 3.4831 | 0.0120 | 3.4951 | 0.9239 | 0.0111 | 0.9349 | | 2,520.1750 | 2,520.1750 | 0.0530 | 0.0623 | 2,540.0612 |
| **Total** | **0.9897** | **7.2537** | **8.8351** | **0.0506** | **4.5272** | **0.0551** | **4.5822** | **1.2245** | **0.0522** | **1.2768** | | **5,397.8502** | **5,397.8502** | **0.0638** | **0.4906** | **5,545.6299** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2030

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1437 | 6.7697 | 1.9077 | 0.0272 | 1.0441 | 0.0430 | 1.0871 | 0.3007 | 0.0412 | 0.3418 | | 2,877.6751 | 2,877.6751 | 0.0109 | 0.4283 | 3,005.5687 |
| Worker | 0.8460 | 0.4841 | 6.9274 | 0.0233 | 3.4831 | 0.0120 | 3.4951 | 0.9239 | 0.0111 | 0.9349 | | 2,520.1750 | 2,520.1750 | 0.0530 | 0.0623 | 2,540.0612 |
| **Total** | **0.9897** | **7.2537** | **8.8351** | **0.0506** | **4.5272** | **0.0551** | **4.5822** | **1.2245** | **0.0522** | **1.2768** | | **5,397.8502** | **5,397.8502** | **0.0638** | **0.4906** | **5,545.6299** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2031

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1423 | 6.7509 | 1.8979 | 0.0268 | 1.0441 | 0.0428 | 1.0869 | 0.3007 | 0.0410 | 0.3416 | | 2,830.2806 | 2,830.2806 | 0.0107 | 0.4210 | 2,955.9952 |
| Worker | 0.7912 | 0.4502 | 6.6694 | 0.0228 | 3.4831 | 0.0113 | 3.4943 | 0.9239 | 0.0104 | 0.9342 | | 2,483.0797 | 2,483.0797 | 0.0491 | 0.0602 | 2,502.2468 |
| **Total** | **0.9335** | **7.2011** | **8.5673** | **0.0496** | **4.5272** | **0.0541** | **4.5813** | **1.2245** | **0.0513** | **1.2759** | | **5,313.3603** | **5,313.3603** | **0.0598** | **0.4812** | **5,458.2420** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2031

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1423 | 6.7509 | 1.8979 | 0.0268 | 1.0441 | 0.0428 | 1.0869 | 0.3007 | 0.0410 | 0.3416 | | 2,830.2806 | 2,830.2806 | 0.0107 | 0.4210 | 2,955.9952 |
| Worker | 0.7912 | 0.4502 | 6.6694 | 0.0228 | 3.4831 | 0.0113 | 3.4943 | 0.9239 | 0.0104 | 0.9342 | | 2,483.0797 | 2,483.0797 | 0.0491 | 0.0602 | 2,502.2468 |
| **Total** | **0.9335** | **7.2011** | **8.5673** | **0.0496** | **4.5272** | **0.0541** | **4.5813** | **1.2245** | **0.0513** | **1.2759** | | **5,313.3603** | **5,313.3603** | **0.0598** | **0.4812** | **5,458.2420** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2032

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1413 | 6.7349 | 1.8933 | 0.0264 | 1.0441 | 0.0426 | 1.0868 | 0.3007 | 0.0408 | 0.3415 | | 2,788.4699 | 2,788.4699 | 0.0105 | 0.4146 | 2,912.2696 |
| Worker | 0.7439 | 0.4230 | 6.4514 | 0.0224 | 3.4831 | 0.0106 | 3.4936 | 0.9239 | 9.7100e-003 | 0.9336 | | 2,450.5800 | 2,450.5800 | 0.0458 | 0.0585 | 2,469.1620 |
| **Total** | **0.8852** | **7.1579** | **8.3447** | **0.0488** | **4.5272** | **0.0532** | **4.5804** | **1.2245** | **0.0505** | **1.2750** | | **5,239.0499** | **5,239.0499** | **0.0563** | **0.4731** | **5,381.4316** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2032

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1413 | 6.7349 | 1.8933 | 0.0264 | 1.0441 | 0.0426 | 1.0868 | 0.3007 | 0.0408 | 0.3415 | | 2,788.4699 | 2,788.4699 | 0.0105 | 0.4146 | 2,912.2696 |
| Worker | 0.7439 | 0.4230 | 6.4514 | 0.0224 | 3.4831 | 0.0106 | 3.4936 | 0.9239 | 9.7100e-003 | 0.9336 | | 2,450.5800 | 2,450.5800 | 0.0458 | 0.0585 | 2,469.1620 |
| **Total** | **0.8852** | **7.1579** | **8.3447** | **0.0488** | **4.5272** | **0.0532** | **4.5804** | **1.2245** | **0.0505** | **1.2750** | | **5,239.0499** | **5,239.0499** | **0.0563** | **0.4731** | **5,381.4316** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2033

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1406 | 6.7223 | 1.8929 | 0.0261 | 1.0441 | 0.0425 | 1.0866 | 0.3007 | 0.0406 | 0.3413 | | 2,751.7008 | 2,751.7008 | 0.0104 | 0.4089 | 2,873.8222 |
| Worker | 0.7012 | 0.4005 | 6.2631 | 0.0220 | 3.4831 | 9.9100e-003 | 3.4930 | 0.9239 | 9.1200e-003 | 0.9330 | | 2,421.9423 | 2,421.9423 | 0.0429 | 0.0571 | 2,440.0397 |
| **Total** | **0.8418** | **7.1228** | **8.1560** | **0.0481** | **4.5272** | **0.0524** | **4.5796** | **1.2245** | **0.0497** | **1.2743** | | **5,173.6431** | **5,173.6431** | **0.0533** | **0.4661** | **5,313.8619** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2033

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1406 | 6.7223 | 1.8929 | 0.0261 | 1.0441 | 0.0425 | 1.0866 | 0.3007 | 0.0406 | 0.3413 | | 2,751.7008 | 2,751.7008 | 0.0104 | 0.4089 | 2,873.8222 |
| Worker | 0.7012 | 0.4005 | 6.2631 | 0.0220 | 3.4831 | 9.9100e-003 | 3.4930 | 0.9239 | 9.1200e-003 | 0.9330 | | 2,421.9423 | 2,421.9423 | 0.0429 | 0.0571 | 2,440.0397 |
| **Total** | **0.8418** | **7.1228** | **8.1560** | **0.0481** | **4.5272** | **0.0524** | **4.5796** | **1.2245** | **0.0497** | **1.2743** | | **5,173.6431** | **5,173.6431** | **0.0533** | **0.4661** | **5,313.8619** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2034

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1401 | 6.7065 | 1.8939 | 0.0257 | 1.0441 | 0.0423 | 1.0864 | 0.3007 | 0.0404 | 0.3411 | | 2,718.3941 | 2,718.3941 | 0.0103 | 0.4038 | 2,838.9959 |
| Worker | 0.6640 | 0.3825 | 6.0974 | 0.0217 | 3.4831 | 9.3200e-003 | 3.4924 | 0.9239 | 8.5800e-003 | 0.9325 | | 2,396.8355 | 2,396.8355 | 0.0403 | 0.0560 | 2,414.5359 |
| **Total** | **0.8041** | **7.0890** | **7.9913** | **0.0474** | **4.5272** | **0.0516** | **4.5788** | **1.2245** | **0.0490** | **1.2736** | | **5,115.2296** | **5,115.2296** | **0.0506** | **0.4599** | **5,253.5318** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2034

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1401 | 6.7065 | 1.8939 | 0.0257 | 1.0441 | 0.0423 | 1.0864 | 0.3007 | 0.0404 | 0.3411 | | 2,718.3941 | 2,718.3941 | 0.0103 | 0.4038 | 2,838.9959 |
| Worker | 0.6640 | 0.3825 | 6.0974 | 0.0217 | 3.4831 | 9.3200e-003 | 3.4924 | 0.9239 | 8.5800e-003 | 0.9325 | | 2,396.8355 | 2,396.8355 | 0.0403 | 0.0560 | 2,414.5359 |
| **Total** | **0.8041** | **7.0890** | **7.9913** | **0.0474** | **4.5272** | **0.0516** | **4.5788** | **1.2245** | **0.0490** | **1.2736** | | **5,115.2296** | **5,115.2296** | **0.0506** | **0.4599** | **5,253.5318** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2035

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.2168 | 7.1613 | 16.1178 | 0.0310 | | 0.0904 | 0.0904 | | 0.0904 | 0.0904 | | 2,897.5468 | 2,897.5468 | 0.1079 | | 2,900.2448 |
| **Total** | **1.2168** | **7.1613** | **16.1178** | **0.0310** | | **0.0904** | **0.0904** | | **0.0904** | **0.0904** | | **2,897.5468** | **2,897.5468** | **0.1079** | | **2,900.2448** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1396 | 6.6877 | 1.8950 | 0.0255 | 1.0441 | 0.0420 | 1.0862 | 0.3007 | 0.0402 | 0.3409 | | 2,688.7646 | 2,688.7646 | 0.0103 | 0.3993 | 2,808.0148 |
| Worker | 0.6309 | 0.3686 | 5.9562 | 0.0214 | 3.4831 | 8.7900e-003 | 3.4919 | 0.9239 | 8.0900e-003 | 0.9320 | | 2,375.2075 | 2,375.2075 | 0.0380 | 0.0552 | 2,392.5919 |
| **Total** | **0.7704** | **7.0563** | **7.8512** | **0.0468** | **4.5272** | **0.0508** | **4.5780** | **1.2245** | **0.0483** | **1.2729** | | **5,063.9721** | **5,063.9721** | **0.0483** | **0.4545** | **5,200.6067** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Building Construction - 2035

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.2168 | 7.1613 | 16.1178 | 0.0310 | | 0.0904 | 0.0904 | | 0.0904 | 0.0904 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1079 | | 2,900.2448 |
| **Total** | **1.2168** | **7.1613** | **16.1178** | **0.0310** | | **0.0904** | **0.0904** | | **0.0904** | **0.0904** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1079** | | **2,900.2448** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.1396 | 6.6877 | 1.8950 | 0.0255 | 1.0441 | 0.0420 | 1.0862 | 0.3007 | 0.0402 | 0.3409 | | 2,688.7646 | 2,688.7646 | 0.0103 | 0.3993 | 2,808.0148 |
| Worker | 0.6309 | 0.3686 | 5.9562 | 0.0214 | 3.4831 | 8.7900e-003 | 3.4919 | 0.9239 | 8.0900e-003 | 0.9320 | | 2,375.2075 | 2,375.2075 | 0.0380 | 0.0552 | 2,392.5919 |
| **Total** | **0.7704** | **7.0563** | **7.8512** | **0.0468** | **4.5272** | **0.0508** | **4.5780** | **1.2245** | **0.0483** | **1.2729** | | **5,063.9721** | **5,063.9721** | **0.0483** | **0.4545** | **5,200.6067** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Paving - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.1028 | 11.1249 | 14.5805 | 0.0228 | | 0.5679 | 0.5679 | | 0.5225 | 0.5225 | | 2,207.6603 | 2,207.6603 | 0.7140 | | 2,225.5104 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.1028** | **11.1249** | **14.5805** | **0.0228** | | **0.5679** | **0.5679** | | **0.5225** | **0.5225** | | **2,207.6603** | **2,207.6603** | **0.7140** | | **2,225.5104** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0529 | 0.0397 | 0.4035 | 1.0500e-003 | 0.1232 | 6.7000e-004 | 0.1239 | 0.0327 | 6.2000e-004 | 0.0333 | | 106.3505 | 106.3505 | 3.9800e-003 | 3.6200e-003 | 107.5278 |
| **Total** | **0.0529** | **0.0397** | **0.4035** | **1.0500e-003** | **0.1232** | **6.7000e-004** | **0.1239** | **0.0327** | **6.2000e-004** | **0.0333** | | **106.3505** | **106.3505** | **3.9800e-003** | **3.6200e-003** | **107.5278** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Paving - 2022

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.1028 | 11.1249 | 14.5805 | 0.0228 | | 0.5679 | 0.5679 | | 0.5225 | 0.5225 | 0.0000 | 2,207.6603 | 2,207.6603 | 0.7140 | | 2,225.5104 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.1028** | **11.1249** | **14.5805** | **0.0228** | | **0.5679** | **0.5679** | | **0.5225** | **0.5225** | **0.0000** | **2,207.6603** | **2,207.6603** | **0.7140** | | **2,225.5104** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0529 | 0.0397 | 0.4035 | 1.0500e-003 | 0.1232 | 6.7000e-004 | 0.1239 | 0.0327 | 6.2000e-004 | 0.0333 | | 106.3505 | 106.3505 | 3.9800e-003 | 3.6200e-003 | 107.5278 |
| **Total** | **0.0529** | **0.0397** | **0.4035** | **1.0500e-003** | **0.1232** | **6.7000e-004** | **0.1239** | **0.0327** | **6.2000e-004** | **0.0333** | | **106.3505** | **106.3505** | **3.9800e-003** | **3.6200e-003** | **107.5278** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Paving - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.0327** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0486 | 0.0347 | 0.3692 | 1.0100e-003 | 0.1232 | 6.4000e-004 | 0.1239 | 0.0327 | 5.8000e-004 | 0.0333 | | 103.5679 | 103.5679 | 3.5700e-003 | 3.3200e-003 | 104.6453 |
| **Total** | **0.0486** | **0.0347** | **0.3692** | **1.0100e-003** | **0.1232** | **6.4000e-004** | **0.1239** | **0.0327** | **5.8000e-004** | **0.0333** | | **103.5679** | **103.5679** | **3.5700e-003** | **3.3200e-003** | **104.6453** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Paving - 2023

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | 0.0000 | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.0327** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | **0.0000** | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0486 | 0.0347 | 0.3692 | 1.0100e-003 | 0.1232 | 6.4000e-004 | 0.1239 | 0.0327 | 5.8000e-004 | 0.0333 | | 103.5679 | 103.5679 | 3.5700e-003 | 3.3200e-003 | 104.6453 |
| **Total** | **0.0486** | **0.0347** | **0.3692** | **1.0100e-003** | **0.1232** | **6.4000e-004** | **0.1239** | **0.0327** | **5.8000e-004** | **0.0333** | | **103.5679** | **103.5679** | **3.5700e-003** | **3.3200e-003** | **104.6453** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1917 | 1.3030 | 1.8111 | 2.9700e-003 | | 0.0708 | 0.0708 | | 0.0708 | 0.0708 | | 281.4481 | 281.4481 | 0.0168 | | 281.8690 |
| **Total** | **4.0502** | **1.3030** | **1.8111** | **2.9700e-003** | | **0.0708** | **0.0708** | | **0.0708** | **0.0708** | | **281.4481** | **281.4481** | **0.0168** | | **281.8690** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.2752 | 0.1965 | 2.0918 | 5.7300e-003 | 0.6983 | 3.6000e-003 | 0.7019 | 0.1852 | 3.3100e-003 | 0.1885 | | 586.8847 | 586.8847 | 0.0202 | 0.0188 | 592.9903 |
| **Total** | **0.2752** | **0.1965** | **2.0918** | **5.7300e-003** | **0.6983** | **3.6000e-003** | **0.7019** | **0.1852** | **3.3100e-003** | **0.1885** | | **586.8847** | **586.8847** | **0.0202** | **0.0188** | **592.9903** |

## 3.6 Architectural Coating - 2023

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1917 | 1.3030 | 1.8111 | 2.9700e-003 | | 0.0708 | 0.0708 | | 0.0708 | 0.0708 | 0.0000 | 281.4481 | 281.4481 | 0.0168 | | 281.8690 |
| **Total** | **4.0502** | **1.3030** | **1.8111** | **2.9700e-003** | | **0.0708** | **0.0708** | | **0.0708** | **0.0708** | **0.0000** | **281.4481** | **281.4481** | **0.0168** | | **281.8690** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.2752 | 0.1965 | 2.0918 | 5.7300e-003 | 0.6983 | 3.6000e-003 | 0.7019 | 0.1852 | 3.3100e-003 | 0.1885 | | 586.8847 | 586.8847 | 0.0202 | 0.0188 | 592.9903 |
| **Total** | **0.2752** | **0.1965** | **2.0918** | **5.7300e-003** | **0.6983** | **3.6000e-003** | **0.7019** | **0.1852** | **3.3100e-003** | **0.1885** | | **586.8847** | **586.8847** | **0.0202** | **0.0188** | **592.9903** |

## 3.6 Architectural Coating - 2024

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1808 | 1.2188 | 1.8101 | 2.9700e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | | 281.4481 | 281.4481 | 0.0159 | | 281.8443 |
| **Total** | **4.0393** | **1.2188** | **1.8101** | **2.9700e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | | **281.4481** | **281.4481** | **0.0159** | | **281.8443** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.2541 | 0.1730 | 1.9378 | 5.5500e-003 | 0.6983 | 3.4200e-003 | 0.7017 | 0.1852 | 3.1400e-003 | 0.1884 | | 572.2246 | 572.2246 | 0.0182 | 0.0174 | 577.8492 |
| **Total** | **0.2541** | **0.1730** | **1.9378** | **5.5500e-003** | **0.6983** | **3.4200e-003** | **0.7017** | **0.1852** | **3.1400e-003** | **0.1884** | | **572.2246** | **572.2246** | **0.0182** | **0.0174** | **577.8492** |

## 3.6 Architectural Coating - 2024

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1808 | 1.2188 | 1.8101 | 2.9700e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | 0.0000 | 281.4481 | 281.4481 | 0.0159 | | 281.8443 |
| **Total** | **4.0393** | **1.2188** | **1.8101** | **2.9700e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | **0.0000** | **281.4481** | **281.4481** | **0.0159** | | **281.8443** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.2541 | 0.1730 | 1.9378 | 5.5500e-003 | 0.6983 | 3.4200e-003 | 0.7017 | 0.1852 | 3.1400e-003 | 0.1884 | | 572.2246 | 572.2246 | 0.0182 | 0.0174 | 577.8492 |
| **Total** | **0.2541** | **0.1730** | **1.9378** | **5.5500e-003** | **0.6983** | **3.4200e-003** | **0.7017** | **0.1852** | **3.1400e-003** | **0.1884** | | **572.2246** | **572.2246** | **0.0182** | **0.0174** | **577.8492** |

## 3.6 Architectural Coating - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **4.0294** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.2358 | 0.1537 | 1.8016 | 5.3600e-003 | 0.6983 | 3.2500e-003 | 0.7015 | 0.1852 | 2.9900e-003 | 0.1882 | | 558.4006 | 558.4006 | 0.0164 | 0.0161 | 563.6134 |
| **Total** | **0.2358** | **0.1537** | **1.8016** | **5.3600e-003** | **0.6983** | **3.2500e-003** | **0.7015** | **0.1852** | **2.9900e-003** | **0.1882** | | **558.4006** | **558.4006** | **0.0164** | **0.0161** | **563.6134** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2025

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **4.0294** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.2358 | 0.1537 | 1.8016 | 5.3600e-003 | 0.6983 | 3.2500e-003 | 0.7015 | 0.1852 | 2.9900e-003 | 0.1882 | | 558.4006 | 558.4006 | 0.0164 | 0.0161 | 563.6134 |
| **Total** | **0.2358** | **0.1537** | **1.8016** | **5.3600e-003** | **0.6983** | **3.2500e-003** | **0.7015** | **0.1852** | **2.9900e-003** | **0.1882** | | **558.4006** | **558.4006** | **0.0164** | **0.0161** | **563.6134** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2026

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **4.0294** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.2201 | 0.1380 | 1.6953 | 5.2000e-003 | 0.6983 | 3.1100e-003 | 0.7014 | 0.1852 | 2.8600e-003 | 0.1881 | | 545.7645 | 545.7645 | 0.0149 | 0.0151 | 550.6396 |
| **Total** | **0.2201** | **0.1380** | **1.6953** | **5.2000e-003** | **0.6983** | **3.1100e-003** | **0.7014** | **0.1852** | **2.8600e-003** | **0.1881** | | **545.7645** | **545.7645** | **0.0149** | **0.0151** | **550.6396** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2026

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **4.0294** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.2201 | 0.1380 | 1.6953 | 5.2000e-003 | 0.6983 | 3.1100e-003 | 0.7014 | 0.1852 | 2.8600e-003 | 0.1881 | | 545.7645 | 545.7645 | 0.0149 | 0.0151 | 550.6396 |
| **Total** | **0.2201** | **0.1380** | **1.6953** | **5.2000e-003** | **0.6983** | **3.1100e-003** | **0.7014** | **0.1852** | **2.8600e-003** | **0.1881** | | **545.7645** | **545.7645** | **0.0149** | **0.0151** | **550.6396** |

## 3.6 Architectural Coating - 2027

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **4.0294** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.2060 | 0.1248 | 1.5980 | 5.0400e-003 | 0.6983 | 2.9300e-003 | 0.7012 | 0.1852 | 2.7000e-003 | 0.1879 | | 533.7634 | 533.7634 | 0.0136 | 0.0143 | 538.3538 |
| **Total** | **0.2060** | **0.1248** | **1.5980** | **5.0400e-003** | **0.6983** | **2.9300e-003** | **0.7012** | **0.1852** | **2.7000e-003** | **0.1879** | | **533.7634** | **533.7634** | **0.0136** | **0.0143** | **538.3538** |

## 3.6 Architectural Coating - 2027

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **4.0294** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.2060 | 0.1248 | 1.5980 | 5.0400e-003 | 0.6983 | 2.9300e-003 | 0.7012 | 0.1852 | 2.7000e-003 | 0.1879 | | 533.7634 | 533.7634 | 0.0136 | 0.0143 | 538.3538 |
| **Total** | **0.2060** | **0.1248** | **1.5980** | **5.0400e-003** | **0.6983** | **2.9300e-003** | **0.7012** | **0.1852** | **2.7000e-003** | **0.1879** | | **533.7634** | **533.7634** | **0.0136** | **0.0143** | **538.3538** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2028

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **4.0294** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1930 | 0.1140 | 1.5173 | 4.9100e-003 | 0.6983 | 2.7500e-003 | 0.7010 | 0.1852 | 2.5300e-003 | 0.1877 | | 523.1055 | 523.1055 | 0.0125 | 0.0136 | 527.4591 |
| **Total** | **0.1930** | **0.1140** | **1.5173** | **4.9100e-003** | **0.6983** | **2.7500e-003** | **0.7010** | **0.1852** | **2.5300e-003** | **0.1877** | | **523.1055** | **523.1055** | **0.0125** | **0.0136** | **527.4591** |

## 3.6 Architectural Coating - 2028

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **4.0294** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1930 | 0.1140 | 1.5173 | 4.9100e-003 | 0.6983 | 2.7500e-003 | 0.7010 | 0.1852 | 2.5300e-003 | 0.1877 | | 523.1055 | 523.1055 | 0.0125 | 0.0136 | 527.4591 |
| **Total** | **0.1930** | **0.1140** | **1.5173** | **4.9100e-003** | **0.6983** | **2.7500e-003** | **0.7010** | **0.1852** | **2.5300e-003** | **0.1877** | | **523.1055** | **523.1055** | **0.0125** | **0.0136** | **527.4591** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2029

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **4.0294** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1809 | 0.1048 | 1.4475 | 4.7800e-003 | 0.6983 | 2.5700e-003 | 0.7008 | 0.1852 | 2.3700e-003 | 0.1876 | | 513.5829 | 513.5829 | 0.0115 | 0.0130 | 517.7370 |
| **Total** | **0.1809** | **0.1048** | **1.4475** | **4.7800e-003** | **0.6983** | **2.5700e-003** | **0.7008** | **0.1852** | **2.3700e-003** | **0.1876** | | **513.5829** | **513.5829** | **0.0115** | **0.0130** | **517.7370** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2029

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **4.0294** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1809 | 0.1048 | 1.4475 | 4.7800e-003 | 0.6983 | 2.5700e-003 | 0.7008 | 0.1852 | 2.3700e-003 | 0.1876 | | 513.5829 | 513.5829 | 0.0115 | 0.0130 | 517.7370 |
| **Total** | **0.1809** | **0.1048** | **1.4475** | **4.7800e-003** | **0.6983** | **2.5700e-003** | **0.7008** | **0.1852** | **2.3700e-003** | **0.1876** | | **513.5829** | **513.5829** | **0.0115** | **0.0130** | **517.7370** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2030

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **3.9893** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1696 | 0.0970 | 1.3888 | 4.6700e-003 | 0.6983 | 2.4100e-003 | 0.7007 | 0.1852 | 2.2200e-003 | 0.1874 | | 505.2238 | 505.2238 | 0.0106 | 0.0125 | 509.2104 |
| **Total** | **0.1696** | **0.0970** | **1.3888** | **4.6700e-003** | **0.6983** | **2.4100e-003** | **0.7007** | **0.1852** | **2.2200e-003** | **0.1874** | | **505.2238** | **505.2238** | **0.0106** | **0.0125** | **509.2104** |

## 3.6 Architectural Coating - 2030

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | 0.0000 | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **3.9893** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | **0.0000** | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1696 | 0.0970 | 1.3888 | 4.6700e-003 | 0.6983 | 2.4100e-003 | 0.7007 | 0.1852 | 2.2200e-003 | 0.1874 | | 505.2238 | 505.2238 | 0.0106 | 0.0125 | 509.2104 |
| **Total** | **0.1696** | **0.0970** | **1.3888** | **4.6700e-003** | **0.6983** | **2.4100e-003** | **0.7007** | **0.1852** | **2.2200e-003** | **0.1874** | | **505.2238** | **505.2238** | **0.0106** | **0.0125** | **509.2104** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2031

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **3.9893** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1586 | 0.0903 | 1.3370 | 4.5700e-003 | 0.6983 | 2.2600e-003 | 0.7005 | 0.1852 | 2.0800e-003 | 0.1873 | | 497.7872 | 497.7872 | 9.8500e-003 | 0.0121 | 501.6297 |
| **Total** | **0.1586** | **0.0903** | **1.3370** | **4.5700e-003** | **0.6983** | **2.2600e-003** | **0.7005** | **0.1852** | **2.0800e-003** | **0.1873** | | **497.7872** | **497.7872** | **9.8500e-003** | **0.0121** | **501.6297** |

## 3.6 Architectural Coating - 2031

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | 0.0000 | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **3.9893** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | **0.0000** | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1586 | 0.0903 | 1.3370 | 4.5700e-003 | 0.6983 | 2.2600e-003 | 0.7005 | 0.1852 | 2.0800e-003 | 0.1873 | | 497.7872 | 497.7872 | 9.8500e-003 | 0.0121 | 501.6297 |
| **Total** | **0.1586** | **0.0903** | **1.3370** | **4.5700e-003** | **0.6983** | **2.2600e-003** | **0.7005** | **0.1852** | **2.0800e-003** | **0.1873** | | **497.7872** | **497.7872** | **9.8500e-003** | **0.0121** | **501.6297** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2032

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **3.9893** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1491 | 0.0848 | 1.2933 | 4.4900e-003 | 0.6983 | 2.1200e-003 | 0.7004 | 0.1852 | 1.9500e-003 | 0.1872 | | 491.2719 | 491.2719 | 9.1800e-003 | 0.0117 | 494.9971 |
| **Total** | **0.1491** | **0.0848** | **1.2933** | **4.4900e-003** | **0.6983** | **2.1200e-003** | **0.7004** | **0.1852** | **1.9500e-003** | **0.1872** | | **491.2719** | **491.2719** | **9.1800e-003** | **0.0117** | **494.9971** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2032

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | 0.0000 | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **3.9893** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | **0.0000** | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1491 | 0.0848 | 1.2933 | 4.4900e-003 | 0.6983 | 2.1200e-003 | 0.7004 | 0.1852 | 1.9500e-003 | 0.1872 | | 491.2719 | 491.2719 | 9.1800e-003 | 0.0117 | 494.9971 |
| **Total** | **0.1491** | **0.0848** | **1.2933** | **4.4900e-003** | **0.6983** | **2.1200e-003** | **0.7004** | **0.1852** | **1.9500e-003** | **0.1872** | | **491.2719** | **491.2719** | **9.1800e-003** | **0.0117** | **494.9971** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2033

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **3.9893** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1406 | 0.0803 | 1.2556 | 4.4100e-003 | 0.6983 | 1.9900e-003 | 0.7002 | 0.1852 | 1.8300e-003 | 0.1870 | | 485.5309 | 485.5309 | 8.6000e-003 | 0.0115 | 489.1589 |
| **Total** | **0.1406** | **0.0803** | **1.2556** | **4.4100e-003** | **0.6983** | **1.9900e-003** | **0.7002** | **0.1852** | **1.8300e-003** | **0.1870** | | **485.5309** | **485.5309** | **8.6000e-003** | **0.0115** | **489.1589** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2033

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | 0.0000 | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **3.9893** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | **0.0000** | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1406 | 0.0803 | 1.2556 | 4.4100e-003 | 0.6983 | 1.9900e-003 | 0.7002 | 0.1852 | 1.8300e-003 | 0.1870 | | 485.5309 | 485.5309 | 8.6000e-003 | 0.0115 | 489.1589 |
| **Total** | **0.1406** | **0.0803** | **1.2556** | **4.4100e-003** | **0.6983** | **1.9900e-003** | **0.7002** | **0.1852** | **1.8300e-003** | **0.1870** | | **485.5309** | **485.5309** | **8.6000e-003** | **0.0115** | **489.1589** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2034

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **3.9893** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1331 | 0.0767 | 1.2224 | 4.3400e-003 | 0.6983 | 1.8700e-003 | 0.7001 | 0.1852 | 1.7200e-003 | 0.1869 | | 480.4977 | 480.4977 | 8.0800e-003 | 0.0112 | 484.0461 |
| **Total** | **0.1331** | **0.0767** | **1.2224** | **4.3400e-003** | **0.6983** | **1.8700e-003** | **0.7001** | **0.1852** | **1.7200e-003** | **0.1869** | | **480.4977** | **480.4977** | **8.0800e-003** | **0.0112** | **484.0461** |

## 3.6 Architectural Coating - 2034

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | 0.0000 | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **3.9893** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | **0.0000** | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1331 | 0.0767 | 1.2224 | 4.3400e-003 | 0.6983 | 1.8700e-003 | 0.7001 | 0.1852 | 1.7200e-003 | 0.1869 | | 480.4977 | 480.4977 | 8.0800e-003 | 0.0112 | 484.0461 |
| **Total** | **0.1331** | **0.0767** | **1.2224** | **4.3400e-003** | **0.6983** | **1.8700e-003** | **0.7001** | **0.1852** | **1.7200e-003** | **0.1869** | | **480.4977** | **480.4977** | **8.0800e-003** | **0.0112** | **484.0461** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2035

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1179 | 0.7577 | 1.7943 | 2.9700e-003 | | 9.9000e-003 | 9.9000e-003 | | 9.9000e-003 | 9.9000e-003 | | 281.4481 | 281.4481 | 0.0104 | | 281.7081 |
| **Total** | **3.9764** | **0.7577** | **1.7943** | **2.9700e-003** | | **9.9000e-003** | **9.9000e-003** | | **9.9000e-003** | **9.9000e-003** | | **281.4481** | **281.4481** | **0.0104** | | **281.7081** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1265 | 0.0739 | 1.1940 | 4.2900e-003 | 0.6983 | 1.7600e-003 | 0.7000 | 0.1852 | 1.6200e-003 | 0.1868 | | 476.1619 | 476.1619 | 7.6200e-003 | 0.0111 | 479.6470 |
| **Total** | **0.1265** | **0.0739** | **1.1940** | **4.2900e-003** | **0.6983** | **1.7600e-003** | **0.7000** | **0.1852** | **1.6200e-003** | **0.1868** | | **476.1619** | **476.1619** | **7.6200e-003** | **0.0111** | **479.6470** |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2035

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 3.8585 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1179 | 0.7577 | 1.7943 | 2.9700e-003 | | 9.9000e-003 | 9.9000e-003 | | 9.9000e-003 | 9.9000e-003 | 0.0000 | 281.4481 | 281.4481 | 0.0104 | | 281.7081 |
| **Total** | **3.9764** | **0.7577** | **1.7943** | **2.9700e-003** | | **9.9000e-003** | **9.9000e-003** | | **9.9000e-003** | **9.9000e-003** | **0.0000** | **281.4481** | **281.4481** | **0.0104** | | **281.7081** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1265 | 0.0739 | 1.1940 | 4.2900e-003 | 0.6983 | 1.7600e-003 | 0.7000 | 0.1852 | 1.6200e-003 | 0.1868 | | 476.1619 | 476.1619 | 7.6200e-003 | 0.0111 | 479.6470 |
| **Total** | **0.1265** | **0.0739** | **1.1940** | **4.2900e-003** | **0.6983** | **1.7600e-003** | **0.7000** | **0.1852** | **1.6200e-003** | **0.1868** | | **476.1619** | **476.1619** | **7.6200e-003** | **0.0111** | **479.6470** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

# 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 5.7285 | 11.2519 | 64.4632 | 0.1536 | 20.4231 | 0.1144 | 20.5374 | 5.4473 | 0.1075 | 5.5548 | | 16,817.2107 | 16,817.2107 | 0.7938 | 0.8976 | 17,104.5390 |
| Unmitigated | 5.7927 | 11.4215 | 65.4189 | 0.1566 | 20.8399 | 0.1165 | 20.9564 | 5.5584 | 0.1096 | 5.6680 | | 17,149.1736 | 17,149.1736 | 0.8046 | 0.9122 | 17,441.1323 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 12.64 | 31.75 | 35.48 | 39,772 | 38,977 |
| Single Family Housing | 3,341.76 | 3,377.16 | 3026.70 | 9,568,036 | 9,376,675 |
| Total | 3,354.40 | 3,408.91 | 3,062.18 | 9,607,808 | 9,415,652 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Single Family Housing | 10.80 | 7.30 | 7.50 | 45.60 | 19.00 | 35.40 | 86 | 11 | 3 |

## 4.4 Fleet Mix

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.552787 | 0.055429 | 0.175422 | 0.126588 | 0.020626 | 0.005781 | 0.013059 | 0.024880 | 0.000595 | 0.000297 | 0.020966 | 0.001153 | 0.002414 |
| Single Family Housing | 0.552787 | 0.055429 | 0.175422 | 0.126588 | 0.020626 | 0.005781 | 0.013059 | 0.024880 | 0.000595 | 0.000297 | 0.020966 | 0.001153 | 0.002414 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.2475 | 2.1146 | 0.8998 | 0.0135 | | 0.1710 | 0.1710 | | 0.1710 | 0.1710 | | 2,699.5064 | 2,699.5064 | 0.0517 | 0.0495 | 2,715.5483 |
| NaturalGas Unmitigated | 0.2475 | 2.1146 | 0.8998 | 0.0135 | | 0.1710 | 0.1710 | | 0.1710 | 0.1710 | | 2,699.5064 | 2,699.5064 | 0.0517 | 0.0495 | 2,715.5483 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 22945.8 | 0.2475 | 2.1146 | 0.8998 | 0.0135 | | 0.1710 | 0.1710 | | 0.1710 | 0.1710 | | 2,699.5064 | 2,699.5064 | 0.0517 | 0.0495 | 2,715.5483 |
| **Total** | | **0.2475** | **2.1146** | **0.8998** | **0.0135** | | **0.1710** | **0.1710** | | **0.1710** | **0.1710** | | **2,699.5064** | **2,699.5064** | **0.0517** | **0.0495** | **2,715.5483** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 22.9458 | 0.2475 | 2.1146 | 0.8998 | 0.0135 | | 0.1710 | 0.1710 | | 0.1710 | 0.1710 | | 2,699.5064 | 2,699.5064 | 0.0517 | 0.0495 | 2,715.5483 |
| **Total** | | **0.2475** | **2.1146** | **0.8998** | **0.0135** | | **0.1710** | **0.1710** | | **0.1710** | **0.1710** | | **2,699.5064** | **2,699.5064** | **0.0517** | **0.0495** | **2,715.5483** |

## 6.0 Area Detail

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Cleaning Supplies

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 25.5676 | 4.8003 | 103.3851 | 0.2823 | | 13.4161 | 13.4161 | | 13.4161 | 13.4161 | 1,923.8342 | 4,159.8590 | 6,083.6932 | 9.0988 | 0.0756 | 6,333.6884 |
| Unmitigated | 26.9958 | 4.8689 | 110.3779 | 0.2828 | | 13.4572 | 13.4572 | | 13.4572 | 13.4572 | 1,923.8342 | 4,175.6499 | 6,099.4841 | 9.1226 | 0.0756 | 6,350.0755 |

Hat Ranch Project - Reduced Density Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 3.2771 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 13.6724 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 9.1760 | 4.5331 | 81.2734 | 0.2813 | | 13.2952 | 13.2952 | | 13.2952 | 13.2952 | 1,923.8342 | 4,123.0588 | 6,046.8931 | 9.0726 | 0.0756 | 6,296.2327 |
| Landscaping | 0.8703 | 0.3358 | 29.1044 | 1.5400e-003 | | 0.1620 | 0.1620 | | 0.1620 | 0.1620 | | 52.5911 | 52.5911 | 0.0501 | | 53.8428 |
| **Total** | **26.9958** | **4.8689** | **110.3779** | **0.2828** | | **13.4572** | **13.4572** | | **13.4572** | **13.4572** | **1,923.8342** | **4,175.6499** | **6,099.4841** | **9.1226** | **0.0756** | **6,350.0755** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 3.2771 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 12.6529 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 9.1760 | 4.5331 | 81.2734 | 0.2813 | | 13.2952 | 13.2952 | | 13.2952 | 13.2952 | 1,923.8342 | 4,123.0588 | 6,046.8931 | 9.0726 | 0.0756 | 6,296.2327 |
| Landscaping | 0.4616 | 0.2672 | 22.1117 | 1.0000e-003 | | 0.1208 | 0.1208 | | 0.1208 | 0.1208 | | 36.8002 | 36.8002 | 0.0262 | | 37.4557 |
| **Total** | **25.5676** | **4.8003** | **103.3851** | **0.2823** | | **13.4161** | **13.4161** | | **13.4161** | **13.4161** | **1,923.8342** | **4,159.8590** | **6,083.6932** | **9.0988** | **0.0756** | **6,333.6884** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

Hat Ranch Project - Agricultural Character Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

# Hat Ranch Project - Agricultural Character Alternative

**San Joaquin Valley Unified APCD Air District, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| City Park | 6.90 | Acre | 6.90 | 300,564.00 | 0 |
| Single Family Housing | 329.00 | Dwelling Unit | 72.10 | 592,200.00 | 1044 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.7 | **Precipitation Freq (Days)** | 45 |
| **Climate Zone** | 2 | | | **Operational Year** | 2035 |
| **Utility Company** | Pacific Gas and Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 116.67 | **CH4 Intensity (lb/MWhr)** | 0.033 | **N2O Intensity (lb/MWhr)** | 0.004 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor adjusted per PG&E's compliance with RPS.

Land Use - Lot acrages adjusted according to site plan.

Construction Phase - Architectural coating phase timing adjusted to occur during building construction.

Vehicle Trips -

Mobile Land Use Mitigation -

Area Mitigation - All electric landscaping equipment would be used, pursuant to AB 1346
Low VOC cleaning supplies required, per SJVAPCD Rule 4663

Water Mitigation - Water conservation strategy applied to reflect compliance with MWELO.

Woodstoves -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstructionPhase | NumDays | 110.00 | 1,550.00 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | |
|---|---|---|---|
| tblLandUse | LotAcreage | 106.82 | 72.10 |
| tblProjectCharacteristics | CO2IntensityFactor | 203.98 | 116.67 |

## 2.0 Emissions Summary

### 2.1 Overall Construction

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2022 | 0.3093 | 3.2301 | 2.3069 | 4.8300e-003 | 1.1961 | 0.1425 | 1.3385 | 0.5236 | 0.1311 | 0.6547 | 0.0000 | 425.1284 | 425.1284 | 0.1342 | 3.5000e-004 | 428.5879 |
| 2023 | 0.6369 | 2.3475 | 2.8365 | 6.2500e-003 | 0.5348 | 0.1006 | 0.6354 | 0.1381 | 0.0937 | 0.2318 | 0.0000 | 559.8194 | 559.8194 | 0.1058 | 0.0166 | 567.4099 |
| 2024 | 1.2793 | 2.4790 | 3.3864 | 8.7000e-003 | 0.3809 | 0.0930 | 0.4739 | 0.1029 | 0.0880 | 0.1909 | 0.0000 | 789.5869 | 789.5869 | 0.0816 | 0.0380 | 802.9498 |
| 2025 | 1.2511 | 2.3232 | 3.2961 | 8.5400e-003 | 0.3794 | 0.0802 | 0.4596 | 0.1025 | 0.0759 | 0.1784 | 0.0000 | 776.9979 | 776.9979 | 0.0801 | 0.0368 | 789.9622 |
| 2026 | 1.2439 | 2.3141 | 3.2444 | 8.4300e-003 | 0.3794 | 0.0801 | 0.4595 | 0.1025 | 0.0758 | 0.1783 | 0.0000 | 767.7872 | 767.7872 | 0.0794 | 0.0358 | 780.4412 |
| 2027 | 1.2374 | 2.3056 | 3.1972 | 8.3100e-003 | 0.3794 | 0.0800 | 0.4594 | 0.1025 | 0.0757 | 0.1782 | 0.0000 | 758.5867 | 758.5867 | 0.0789 | 0.0348 | 770.9410 |
| 2028 | 1.2268 | 2.2899 | 3.1461 | 8.1700e-003 | 0.3780 | 0.0796 | 0.4576 | 0.1021 | 0.0753 | 0.1774 | 0.0000 | 747.2693 | 747.2693 | 0.0782 | 0.0338 | 759.3036 |
| 2029 | 0.6713 | 1.1917 | 1.6294 | 4.2200e-003 | 0.1982 | 0.0415 | 0.2398 | 0.0536 | 0.0393 | 0.0929 | 0.0000 | 386.6210 | 386.6210 | 0.0405 | 0.0172 | 392.7508 |
| **Maximum** | **1.2793** | **3.2301** | **3.3864** | **8.7000e-003** | **1.1961** | **0.1425** | **1.3385** | **0.5236** | **0.1311** | **0.6547** | **0.0000** | **789.5869** | **789.5869** | **0.1342** | **0.0380** | **802.9498** |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 2.1 Overall Construction

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2022 | 0.3093 | 3.2301 | 2.3069 | 4.8300e-003 | 1.1961 | 0.1425 | 1.3385 | 0.5236 | 0.1311 | 0.6547 | 0.0000 | 425.1279 | 425.1279 | 0.1342 | 3.5000e-004 | 428.5874 |
| 2023 | 0.6369 | 2.3475 | 2.8365 | 6.2500e-003 | 0.5348 | 0.1006 | 0.6354 | 0.1381 | 0.0937 | 0.2318 | 0.0000 | 559.8190 | 559.8190 | 0.1058 | 0.0166 | 567.4095 |
| 2024 | 1.2793 | 2.4790 | 3.3864 | 8.7000e-003 | 0.3809 | 0.0930 | 0.4739 | 0.1029 | 0.0880 | 0.1909 | 0.0000 | 789.5865 | 789.5865 | 0.0816 | 0.0380 | 802.9494 |
| 2025 | 1.2511 | 2.3232 | 3.2961 | 8.5400e-003 | 0.3794 | 0.0802 | 0.4596 | 0.1025 | 0.0759 | 0.1784 | 0.0000 | 776.9975 | 776.9975 | 0.0801 | 0.0368 | 789.9618 |
| 2026 | 1.2439 | 2.3141 | 3.2444 | 8.4300e-003 | 0.3794 | 0.0801 | 0.4595 | 0.1025 | 0.0758 | 0.1783 | 0.0000 | 767.7868 | 767.7868 | 0.0794 | 0.0358 | 780.4408 |
| 2027 | 1.2374 | 2.3056 | 3.1972 | 8.3100e-003 | 0.3794 | 0.0800 | 0.4594 | 0.1025 | 0.0757 | 0.1782 | 0.0000 | 758.5863 | 758.5863 | 0.0789 | 0.0348 | 770.9406 |
| 2028 | 1.2268 | 2.2899 | 3.1461 | 8.1700e-003 | 0.3780 | 0.0796 | 0.4576 | 0.1021 | 0.0753 | 0.1774 | 0.0000 | 747.2689 | 747.2689 | 0.0782 | 0.0338 | 759.3032 |
| 2029 | 0.6713 | 1.1917 | 1.6294 | 4.2200e-003 | 0.1982 | 0.0415 | 0.2398 | 0.0536 | 0.0393 | 0.0929 | 0.0000 | 386.6208 | 386.6208 | 0.0405 | 0.0172 | 392.7506 |
| **Maximum** | **1.2793** | **3.2301** | **3.3864** | **8.7000e-003** | **1.1961** | **0.1425** | **1.3385** | **0.5236** | **0.1311** | **0.6547** | **0.0000** | **789.5865** | **789.5865** | **0.1342** | **0.0380** | **802.9494** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| **1** | **5-1-2022** | **7-31-2022** | 1.2149 | 1.2149 |
| **2** | **8-1-2022** | **10-31-2022** | 1.3995 | 1.3995 |
| **3** | **11-1-2022** | **1-31-2023** | 1.3480 | 1.3480 |

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| | | | | |
|---|---|---|---|---|
| **4** | **2-1-2023** | **4-30-2023** | 0.5878 | 0.5878 |
| **5** | **5-1-2023** | **7-31-2023** | 0.3819 | 0.3819 |
| **6** | **8-1-2023** | **10-31-2023** | 0.9472 | 0.9472 |
| **7** | **11-1-2023** | **1-31-2024** | 0.9763 | 0.9763 |
| **8** | **2-1-2024** | **4-30-2024** | 0.9251 | 0.9251 |
| **9** | **5-1-2024** | **7-31-2024** | 0.9405 | 0.9405 |
| **10** | **8-1-2024** | **10-31-2024** | 0.9431 | 0.9431 |
| **11** | **11-1-2024** | **1-31-2025** | 0.9337 | 0.9337 |
| **12** | **2-1-2025** | **4-30-2025** | 0.8732 | 0.8732 |
| **13** | **5-1-2025** | **7-31-2025** | 0.8976 | 0.8976 |
| **14** | **8-1-2025** | **10-31-2025** | 0.9002 | 0.9002 |
| **15** | **11-1-2025** | **1-31-2026** | 0.9038 | 0.9038 |
| **16** | **2-1-2026** | **4-30-2026** | 0.8691 | 0.8691 |
| **17** | **5-1-2026** | **7-31-2026** | 0.8933 | 0.8933 |
| **18** | **8-1-2026** | **10-31-2026** | 0.8959 | 0.8959 |
| **19** | **11-1-2026** | **1-31-2027** | 0.8996 | 0.8996 |
| **20** | **2-1-2027** | **4-30-2027** | 0.8652 | 0.8652 |
| **21** | **5-1-2027** | **7-31-2027** | 0.8894 | 0.8894 |
| **22** | **8-1-2027** | **10-31-2027** | 0.8919 | 0.8919 |
| **23** | **11-1-2027** | **1-31-2028** | 0.8958 | 0.8958 |
| **24** | **2-1-2028** | **4-30-2028** | 0.8717 | 0.8717 |
| **25** | **5-1-2028** | **7-31-2028** | 0.8861 | 0.8861 |
| **26** | **8-1-2028** | **10-31-2028** | 0.8886 | 0.8886 |
| **27** | **11-1-2028** | **1-31-2029** | 0.8925 | 0.8925 |
| **28** | **2-1-2029** | **4-30-2029** | 0.8590 | 0.8590 |
| **29** | **5-1-2029** | **7-31-2029** | 0.6863 | 0.6863 |
| | | **Highest** | 1.3995 | 1.3995 |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 2.2 Overall Operational

**Unmitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 4.4281 | 0.3688 | 15.8308 | 0.0445 | | 2.2003 | 2.2003 | | 2.2003 | 2.2003 | 291.4803 | 146.5157 | 437.9961 | 1.3691 | 2.6100e-003 | 473.0033 |
| Energy | 0.0420 | 0.3587 | 0.1526 | 2.2900e-003 | | 0.0290 | 0.0290 | | 0.0290 | 0.0290 | 0.0000 | 553.0451 | 553.0451 | 0.0469 | 0.0123 | 557.8936 |
| Mobile | 1.0082 | 1.7905 | 10.3186 | 0.0263 | 3.3356 | 0.0191 | 3.3548 | 0.8916 | 0.0180 | 0.9096 | 0.0000 | 2,615.6407 | 2,615.6407 | 0.1136 | 0.1319 | 2,657.7979 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 79.8546 | 0.0000 | 79.8546 | 4.7193 | 0.0000 | 197.8364 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 6.8006 | 10.1640 | 16.9645 | 0.7014 | 0.0168 | 39.5171 |
| **Total** | **5.4782** | **2.5180** | **26.3020** | **0.0731** | **3.3356** | **2.2485** | **5.5841** | **0.8916** | **2.2473** | **3.1389** | **378.1355** | **3,325.3655** | **3,703.5010** | **6.9503** | **0.1637** | **3,926.0483** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 2.2 Overall Operational

**Mitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 4.2210 | 0.3631 | 15.2459 | 0.0444 | | 2.1969 | 2.1969 | | 2.1969 | 2.1969 | 291.4803 | 145.3176 | 436.7979 | 1.3673 | 2.6100e-003 | 471.7599 |
| Energy | 0.0420 | 0.3587 | 0.1526 | 2.2900e-003 | | 0.0290 | 0.0290 | | 0.0290 | 0.0290 | 0.0000 | 553.0451 | 553.0451 | 0.0469 | 0.0123 | 557.8936 |
| Mobile | 0.9979 | 1.7637 | 10.1608 | 0.0258 | 3.2689 | 0.0188 | 3.2877 | 0.8738 | 0.0177 | 0.8914 | 0.0000 | 2,564.9402 | 2,564.9402 | 0.1120 | 0.1298 | 2,606.4220 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 79.8546 | 0.0000 | 79.8546 | 4.7193 | 0.0000 | 197.8364 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 6.8006 | 9.3588 | 16.1594 | 0.7011 | 0.0168 | 38.6980 |
| **Total** | **5.2609** | **2.4855** | **25.5593** | **0.0725** | **3.2689** | **2.2447** | **5.5136** | **0.8738** | **2.2436** | **3.1173** | **378.1355** | **3,272.6618** | **3,650.7973** | **6.9467** | **0.1616** | **3,872.6099** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **3.97** | **1.29** | **2.82** | **0.75** | **2.00** | **0.17** | **1.26** | **2.00** | **0.17** | **0.69** | **0.00** | **1.58** | **1.42** | **0.05** | **1.33** | **1.36** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 5/1/2022 | 7/22/2022 | 5 | 60 | |
| 2 | Grading | Grading | 7/23/2022 | 2/24/2023 | 5 | 155 | |
| 3 | Paving | Paving | 2/25/2023 | 7/28/2023 | 5 | 110 | |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 4 | Building Construction | Building Construction | 7/29/2023 | 7/6/2029 | 5 | 1550 | |
| 5 | Architectural Coating | Architectural Coating | 8/13/2023 | 7/20/2029 | 5 | 1550 | |

**Acres of Grading (Site Preparation Phase): 90**

**Acres of Grading (Grading Phase): 465**

**Acres of Paving: 0**

**Residential Indoor: 1,199,205; Residential Outdoor: 399,735; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 245.00 | 84.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 49.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Site Preparation - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.5897 | 0.0000 | 0.5897 | 0.3031 | 0.0000 | 0.3031 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0951 | 0.9925 | 0.5909 | 1.1400e-003 | | 0.0484 | 0.0484 | | 0.0445 | 0.0445 | 0.0000 | 100.3182 | 100.3182 | 0.0324 | 0.0000 | 101.1293 |
| **Total** | **0.0951** | **0.9925** | **0.5909** | **1.1400e-003** | **0.5897** | **0.0484** | **0.6381** | **0.3031** | **0.0445** | **0.3476** | **0.0000** | **100.3182** | **100.3182** | **0.0324** | **0.0000** | **101.1293** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.2 Site Preparation - 2022

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.8500e-003 | 1.3000e-003 | 0.0147 | 4.0000e-005 | 4.3200e-003 | 2.0000e-005 | 4.3400e-003 | 1.1500e-003 | 2.0000e-005 | 1.1700e-003 | 0.0000 | 3.5903 | 3.5903 | 1.2000e-004 | 1.1000e-004 | 3.6264 |
| **Total** | **1.8500e-003** | **1.3000e-003** | **0.0147** | **4.0000e-005** | **4.3200e-003** | **2.0000e-005** | **4.3400e-003** | **1.1500e-003** | **2.0000e-005** | **1.1700e-003** | **0.0000** | **3.5903** | **3.5903** | **1.2000e-004** | **1.1000e-004** | **3.6264** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.5897 | 0.0000 | 0.5897 | 0.3031 | 0.0000 | 0.3031 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0951 | 0.9925 | 0.5909 | 1.1400e-003 | | 0.0484 | 0.0484 | | 0.0445 | 0.0445 | 0.0000 | 100.3181 | 100.3181 | 0.0324 | 0.0000 | 101.1292 |
| **Total** | **0.0951** | **0.9925** | **0.5909** | **1.1400e-003** | **0.5897** | **0.0484** | **0.6381** | **0.3031** | **0.0445** | **0.3476** | **0.0000** | **100.3181** | **100.3181** | **0.0324** | **0.0000** | **101.1292** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.2 Site Preparation - 2022

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.8500e-003 | 1.3000e-003 | 0.0147 | 4.0000e-005 | 4.3200e-003 | 2.0000e-005 | 4.3400e-003 | 1.1500e-003 | 2.0000e-005 | 1.1700e-003 | 0.0000 | 3.5903 | 3.5903 | 1.2000e-004 | 1.1000e-004 | 3.6264 |
| **Total** | **1.8500e-003** | **1.3000e-003** | **0.0147** | **4.0000e-005** | **4.3200e-003** | **2.0000e-005** | **4.3400e-003** | **1.1500e-003** | **2.0000e-005** | **1.1700e-003** | **0.0000** | **3.5903** | **3.5903** | **1.2000e-004** | **1.1000e-004** | **3.6264** |

## 3.3 Grading - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.5928 | 0.0000 | 0.5928 | 0.2170 | 0.0000 | 0.2170 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.2084 | 2.2335 | 1.6699 | 3.5700e-003 | | 0.0940 | 0.0940 | | 0.0865 | 0.0865 | 0.0000 | 313.5739 | 313.5739 | 0.1014 | 0.0000 | 316.1094 |
| **Total** | **0.2084** | **2.2335** | **1.6699** | **3.5700e-003** | **0.5928** | **0.0940** | **0.6869** | **0.2170** | **0.0865** | **0.3035** | **0.0000** | **313.5739** | **313.5739** | **0.1014** | **0.0000** | **316.1094** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2022

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 3.9400e-003 | 2.7700e-003 | 0.0314 | 8.0000e-005 | 9.1900e-003 | 5.0000e-005 | 9.2500e-003 | 2.4400e-003 | 5.0000e-005 | 2.4900e-003 | 0.0000 | 7.6460 | 7.6460 | 2.6000e-004 | 2.4000e-004 | 7.7229 |
| **Total** | **3.9400e-003** | **2.7700e-003** | **0.0314** | **8.0000e-005** | **9.1900e-003** | **5.0000e-005** | **9.2500e-003** | **2.4400e-003** | **5.0000e-005** | **2.4900e-003** | **0.0000** | **7.6460** | **7.6460** | **2.6000e-004** | **2.4000e-004** | **7.7229** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.5928 | 0.0000 | 0.5928 | 0.2170 | 0.0000 | 0.2170 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.2084 | 2.2335 | 1.6699 | 3.5700e-003 | | 0.0940 | 0.0940 | | 0.0865 | 0.0865 | 0.0000 | 313.5736 | 313.5736 | 0.1014 | 0.0000 | 316.1090 |
| **Total** | **0.2084** | **2.2335** | **1.6699** | **3.5700e-003** | **0.5928** | **0.0940** | **0.6869** | **0.2170** | **0.0865** | **0.3035** | **0.0000** | **313.5736** | **313.5736** | **0.1014** | **0.0000** | **316.1090** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2022

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 3.9400e-003 | 2.7700e-003 | 0.0314 | 8.0000e-005 | 9.1900e-003 | 5.0000e-005 | 9.2500e-003 | 2.4400e-003 | 5.0000e-005 | 2.4900e-003 | 0.0000 | 7.6460 | 7.6460 | 2.6000e-004 | 2.4000e-004 | 7.7229 |
| **Total** | **3.9400e-003** | **2.7700e-003** | **0.0314** | **8.0000e-005** | **9.1900e-003** | **5.0000e-005** | **9.2500e-003** | **2.4400e-003** | **5.0000e-005** | **2.4900e-003** | **0.0000** | **7.6460** | **7.6460** | **2.6000e-004** | **2.4000e-004** | **7.7229** |

## 3.3 Grading - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.3670 | 0.0000 | 0.3670 | 0.0928 | 0.0000 | 0.0928 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0664 | 0.6903 | 0.5610 | 1.2400e-003 | | 0.0285 | 0.0285 | | 0.0262 | 0.0262 | 0.0000 | 109.0704 | 109.0704 | 0.0353 | 0.0000 | 109.9523 |
| **Total** | **0.0664** | **0.6903** | **0.5610** | **1.2400e-003** | **0.3670** | **0.0285** | **0.3955** | **0.0928** | **0.0262** | **0.1190** | **0.0000** | **109.0704** | **109.0704** | **0.0353** | **0.0000** | **109.9523** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2023

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.2600e-003 | 8.4000e-004 | 9.9500e-003 | 3.0000e-005 | 3.2000e-003 | 2.0000e-005 | 3.2100e-003 | 8.5000e-004 | 2.0000e-005 | 8.7000e-004 | 0.0000 | 2.5896 | 2.5896 | 8.0000e-005 | 8.0000e-005 | 2.6141 |
| **Total** | **1.2600e-003** | **8.4000e-004** | **9.9500e-003** | **3.0000e-005** | **3.2000e-003** | **2.0000e-005** | **3.2100e-003** | **8.5000e-004** | **2.0000e-005** | **8.7000e-004** | **0.0000** | **2.5896** | **2.5896** | **8.0000e-005** | **8.0000e-005** | **2.6141** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.3670 | 0.0000 | 0.3670 | 0.0928 | 0.0000 | 0.0928 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0664 | 0.6903 | 0.5610 | 1.2400e-003 | | 0.0285 | 0.0285 | | 0.0262 | 0.0262 | 0.0000 | 109.0703 | 109.0703 | 0.0353 | 0.0000 | 109.9522 |
| **Total** | **0.0664** | **0.6903** | **0.5610** | **1.2400e-003** | **0.3670** | **0.0285** | **0.3955** | **0.0928** | **0.0262** | **0.1190** | **0.0000** | **109.0703** | **109.0703** | **0.0353** | **0.0000** | **109.9522** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2023

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.2600e-003 | 8.4000e-004 | 9.9500e-003 | 3.0000e-005 | 3.2000e-003 | 2.0000e-005 | 3.2100e-003 | 8.5000e-004 | 2.0000e-005 | 8.7000e-004 | 0.0000 | 2.5896 | 2.5896 | 8.0000e-005 | 8.0000e-005 | 2.6141 |
| **Total** | **1.2600e-003** | **8.4000e-004** | **9.9500e-003** | **3.0000e-005** | **3.2000e-003** | **2.0000e-005** | **3.2100e-003** | **8.5000e-004** | **2.0000e-005** | **8.7000e-004** | **0.0000** | **2.5896** | **2.5896** | **8.0000e-005** | **8.0000e-005** | **2.6141** |

## 3.4 Paving - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0568 | 0.5605 | 0.8021 | 1.2500e-003 | | 0.0281 | 0.0281 | | 0.0258 | 0.0258 | 0.0000 | 110.1478 | 110.1478 | 0.0356 | 0.0000 | 111.0384 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0568** | **0.5605** | **0.8021** | **1.2500e-003** | | **0.0281** | **0.0281** | | **0.0258** | **0.0258** | **0.0000** | **110.1478** | **110.1478** | **0.0356** | **0.0000** | **111.0384** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Paving - 2023

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.5900e-003 | 1.7400e-003 | 0.0205 | 6.0000e-005 | 6.6000e-003 | 3.0000e-005 | 6.6300e-003 | 1.7500e-003 | 3.0000e-005 | 1.7900e-003 | 0.0000 | 5.3411 | 5.3411 | 1.7000e-004 | 1.6000e-004 | 5.3916 |
| **Total** | **2.5900e-003** | **1.7400e-003** | **0.0205** | **6.0000e-005** | **6.6000e-003** | **3.0000e-005** | **6.6300e-003** | **1.7500e-003** | **3.0000e-005** | **1.7900e-003** | **0.0000** | **5.3411** | **5.3411** | **1.7000e-004** | **1.6000e-004** | **5.3916** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0568 | 0.5605 | 0.8021 | 1.2500e-003 | | 0.0281 | 0.0281 | | 0.0258 | 0.0258 | 0.0000 | 110.1476 | 110.1476 | 0.0356 | 0.0000 | 111.0382 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0568** | **0.5605** | **0.8021** | **1.2500e-003** | | **0.0281** | **0.0281** | | **0.0258** | **0.0258** | **0.0000** | **110.1476** | **110.1476** | **0.0356** | **0.0000** | **111.0382** |

## 3.4 Paving - 2023

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.5900e-003 | 1.7400e-003 | 0.0205 | 6.0000e-005 | 6.6000e-003 | 3.0000e-005 | 6.6300e-003 | 1.7500e-003 | 3.0000e-005 | 1.7900e-003 | 0.0000 | 5.3411 | 5.3411 | 1.7000e-004 | 1.6000e-004 | 5.3916 |
| **Total** | **2.5900e-003** | **1.7400e-003** | **0.0205** | **6.0000e-005** | **6.6000e-003** | **3.0000e-005** | **6.6300e-003** | **1.7500e-003** | **3.0000e-005** | **1.7900e-003** | **0.0000** | **5.3411** | **5.3411** | **1.7000e-004** | **1.6000e-004** | **5.3916** |

## 3.5 Building Construction - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0865 | 0.7912 | 0.8934 | 1.4800e-003 | | 0.0385 | 0.0385 | | 0.0362 | 0.0362 | 0.0000 | 127.4926 | 127.4926 | 0.0303 | 0.0000 | 128.2508 |
| **Total** | **0.0865** | **0.7912** | **0.8934** | **1.4800e-003** | | **0.0385** | **0.0385** | | **0.0362** | **0.0362** | **0.0000** | **127.4926** | **127.4926** | **0.0303** | **0.0000** | **128.2508** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2023

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 5.1000e-003 | 0.2042 | 0.0626 | 9.3000e-004 | 0.0306 | 1.3200e-003 | 0.0320 | 8.8500e-003 | 1.2600e-003 | 0.0101 | 0.0000 | 89.3123 | 89.3123 | 3.8000e-004 | 0.0134 | 93.3040 |
| Worker | 0.0423 | 0.0284 | 0.3354 | 9.4000e-004 | 0.1077 | 5.7000e-004 | 0.1083 | 0.0286 | 5.3000e-004 | 0.0292 | 0.0000 | 87.2379 | 87.2379 | 2.7200e-003 | 2.5400e-003 | 88.0621 |
| **Total** | **0.0474** | **0.2326** | **0.3979** | **1.8700e-003** | **0.1384** | **1.8900e-003** | **0.1403** | **0.0375** | **1.7900e-003** | **0.0393** | **0.0000** | **176.5502** | **176.5502** | **3.1000e-003** | **0.0159** | **181.3661** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0865 | 0.7912 | 0.8934 | 1.4800e-003 | | 0.0385 | 0.0385 | | 0.0362 | 0.0362 | 0.0000 | 127.4925 | 127.4925 | 0.0303 | 0.0000 | 128.2507 |
| **Total** | **0.0865** | **0.7912** | **0.8934** | **1.4800e-003** | | **0.0385** | **0.0385** | | **0.0362** | **0.0362** | **0.0000** | **127.4925** | **127.4925** | **0.0303** | **0.0000** | **128.2507** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2023

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 5.1000e-003 | 0.2042 | 0.0626 | 9.3000e-004 | 0.0306 | 1.3200e-003 | 0.0320 | 8.8500e-003 | 1.2600e-003 | 0.0101 | 0.0000 | 89.3123 | 89.3123 | 3.8000e-004 | 0.0134 | 93.3040 |
| Worker | 0.0423 | 0.0284 | 0.3354 | 9.4000e-004 | 0.1077 | 5.7000e-004 | 0.1083 | 0.0286 | 5.3000e-004 | 0.0292 | 0.0000 | 87.2379 | 87.2379 | 2.7200e-003 | 2.5400e-003 | 88.0621 |
| **Total** | **0.0474** | **0.2326** | **0.3979** | **1.8700e-003** | **0.1384** | **1.8900e-003** | **0.1403** | **0.0375** | **1.7900e-003** | **0.0393** | **0.0000** | **176.5502** | **176.5502** | **3.1000e-003** | **0.0159** | **181.3661** |

## 3.5 Building Construction - 2024

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1928 | 1.7611 | 2.1179 | 3.5300e-003 | | 0.0803 | 0.0803 | | 0.0756 | 0.0756 | 0.0000 | 303.7223 | 303.7223 | 0.0718 | 0.0000 | 305.5179 |
| **Total** | **0.1928** | **1.7611** | **2.1179** | **3.5300e-003** | | **0.0803** | **0.0803** | | **0.0756** | **0.0756** | **0.0000** | **303.7223** | **303.7223** | **0.0718** | **0.0000** | **305.5179** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2024

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0118 | 0.4868 | 0.1454 | 2.1800e-003 | 0.0730 | 3.1700e-003 | 0.0761 | 0.0211 | 3.0300e-003 | 0.0241 | 0.0000 | 209.3267 | 209.3267 | 8.7000e-004 | 0.0313 | 218.6768 |
| Worker | 0.0929 | 0.0595 | 0.7384 | 2.1600e-003 | 0.2566 | 1.2900e-003 | 0.2579 | 0.0682 | 1.1900e-003 | 0.0694 | 0.0000 | 202.5752 | 202.5752 | 5.8200e-003 | 5.5800e-003 | 204.3837 |
| **Total** | **0.1047** | **0.5463** | **0.8838** | **4.3400e-003** | **0.3296** | **4.4600e-003** | **0.3340** | **0.0893** | **4.2200e-003** | **0.0935** | **0.0000** | **411.9019** | **411.9019** | **6.6900e-003** | **0.0369** | **423.0605** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1928 | 1.7611 | 2.1179 | 3.5300e-003 | | 0.0803 | 0.0803 | | 0.0756 | 0.0756 | 0.0000 | 303.7220 | 303.7220 | 0.0718 | 0.0000 | 305.5175 |
| **Total** | **0.1928** | **1.7611** | **2.1179** | **3.5300e-003** | | **0.0803** | **0.0803** | | **0.0756** | **0.0756** | **0.0000** | **303.7220** | **303.7220** | **0.0718** | **0.0000** | **305.5175** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2024

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0118 | 0.4868 | 0.1454 | 2.1800e-003 | 0.0730 | 3.1700e-003 | 0.0761 | 0.0211 | 3.0300e-003 | 0.0241 | 0.0000 | 209.3267 | 209.3267 | 8.7000e-004 | 0.0313 | 218.6768 |
| Worker | 0.0929 | 0.0595 | 0.7384 | 2.1600e-003 | 0.2566 | 1.2900e-003 | 0.2579 | 0.0682 | 1.1900e-003 | 0.0694 | 0.0000 | 202.5752 | 202.5752 | 5.8200e-003 | 5.5800e-003 | 204.3837 |
| **Total** | **0.1047** | **0.5463** | **0.8838** | **4.3400e-003** | **0.3296** | **4.4600e-003** | **0.3340** | **0.0893** | **4.2200e-003** | **0.0935** | **0.0000** | **411.9019** | **411.9019** | **6.6900e-003** | **0.0369** | **423.0605** |

## 3.5 Building Construction - 2025

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1785 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6549 | 302.6549 | 0.0711 | 0.0000 | 304.4335 |
| **Total** | **0.1785** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6549** | **302.6549** | **0.0711** | **0.0000** | **304.4335** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2025

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0115 | 0.4832 | 0.1418 | 2.1400e-003 | 0.0727 | 3.1600e-003 | 0.0759 | 0.0210 | 3.0200e-003 | 0.0240 | 0.0000 | 204.7313 | 204.7313 | 8.3000e-004 | 0.0306 | 213.8679 |
| Worker | 0.0858 | 0.0527 | 0.6826 | 2.0800e-003 | 0.2556 | 1.2200e-003 | 0.2568 | 0.0679 | 1.1300e-003 | 0.0691 | 0.0000 | 196.9097 | 196.9097 | 5.2200e-003 | 5.1700e-003 | 198.5795 |
| **Total** | **0.0973** | **0.5359** | **0.8244** | **4.2200e-003** | **0.3283** | **4.3800e-003** | **0.3327** | **0.0889** | **4.1500e-003** | **0.0931** | **0.0000** | **401.6411** | **401.6411** | **6.0500e-003** | **0.0358** | **412.4474** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1784 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6545 | 302.6545 | 0.0711 | 0.0000 | 304.4331 |
| **Total** | **0.1784** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6545** | **302.6545** | **0.0711** | **0.0000** | **304.4331** |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2025

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0115 | 0.4832 | 0.1418 | 2.1400e-003 | 0.0727 | 3.1600e-003 | 0.0759 | 0.0210 | 3.0200e-003 | 0.0240 | 0.0000 | 204.7313 | 204.7313 | 8.3000e-004 | 0.0306 | 213.8679 |
| Worker | 0.0858 | 0.0527 | 0.6826 | 2.0800e-003 | 0.2556 | 1.2200e-003 | 0.2568 | 0.0679 | 1.1300e-003 | 0.0691 | 0.0000 | 196.9097 | 196.9097 | 5.2200e-003 | 5.1700e-003 | 198.5795 |
| **Total** | **0.0973** | **0.5359** | **0.8244** | **4.2200e-003** | **0.3283** | **4.3800e-003** | **0.3327** | **0.0889** | **4.1500e-003** | **0.0931** | **0.0000** | **401.6411** | **401.6411** | **6.0500e-003** | **0.0358** | **412.4474** |

## 3.5 Building Construction - 2026

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1785 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6549 | 302.6549 | 0.0711 | 0.0000 | 304.4335 |
| **Total** | **0.1785** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6549** | **302.6549** | **0.0711** | **0.0000** | **304.4335** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2026

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0113 | 0.4806 | 0.1393 | 2.1000e-003 | 0.0727 | 3.1400e-003 | 0.0758 | 0.0210 | 3.0100e-003 | 0.0240 | 0.0000 | 200.8830 | 200.8830 | 8.0000e-004 | 0.0300 | 209.8390 |
| Worker | 0.0800 | 0.0473 | 0.6416 | 2.0200e-003 | 0.2556 | 1.1700e-003 | 0.2568 | 0.0679 | 1.0800e-003 | 0.0690 | 0.0000 | 192.4411 | 192.4411 | 4.7300e-003 | 4.8400e-003 | 194.0028 |
| **Total** | **0.0912** | **0.5279** | **0.7809** | **4.1200e-003** | **0.3283** | **4.3100e-003** | **0.3326** | **0.0889** | **4.0900e-003** | **0.0930** | **0.0000** | **393.3241** | **393.3241** | **5.5300e-003** | **0.0348** | **403.8418** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1784 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6545 | 302.6545 | 0.0711 | 0.0000 | 304.4331 |
| **Total** | **0.1784** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6545** | **302.6545** | **0.0711** | **0.0000** | **304.4331** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2026

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0113 | 0.4806 | 0.1393 | 2.1000e-003 | 0.0727 | 3.1400e-003 | 0.0758 | 0.0210 | 3.0100e-003 | 0.0240 | 0.0000 | 200.8830 | 200.8830 | 8.0000e-004 | 0.0300 | 209.8390 |
| Worker | 0.0800 | 0.0473 | 0.6416 | 2.0200e-003 | 0.2556 | 1.1700e-003 | 0.2568 | 0.0679 | 1.0800e-003 | 0.0690 | 0.0000 | 192.4411 | 192.4411 | 4.7300e-003 | 4.8400e-003 | 194.0028 |
| **Total** | **0.0912** | **0.5279** | **0.7809** | **4.1200e-003** | **0.3283** | **4.3100e-003** | **0.3326** | **0.0889** | **4.0900e-003** | **0.0930** | **0.0000** | **393.3241** | **393.3241** | **5.5300e-003** | **0.0348** | **403.8418** |

## 3.5 Building Construction - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1785 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6549 | 302.6549 | 0.0711 | 0.0000 | 304.4335 |
| **Total** | **0.1785** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6549** | **302.6549** | **0.0711** | **0.0000** | **304.4335** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2027

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0111 | 0.4775 | 0.1373 | 2.0500e-003 | 0.0727 | 3.1200e-003 | 0.0758 | 0.0210 | 2.9800e-003 | 0.0240 | 0.0000 | 196.7717 | 196.7717 | 7.7000e-004 | 0.0294 | 205.5371 |
| Worker | 0.0747 | 0.0428 | 0.6040 | 1.9600e-003 | 0.2556 | 1.1000e-003 | 0.2567 | 0.0679 | 1.0100e-003 | 0.0690 | 0.0000 | 188.2002 | 188.2002 | 4.3100e-003 | 4.5700e-003 | 189.6708 |
| **Total** | **0.0858** | **0.5202** | **0.7413** | **4.0100e-003** | **0.3283** | **4.2200e-003** | **0.3325** | **0.0889** | **3.9900e-003** | **0.0929** | **0.0000** | **384.9719** | **384.9719** | **5.0800e-003** | **0.0339** | **395.2079** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1784 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6545 | 302.6545 | 0.0711 | 0.0000 | 304.4331 |
| **Total** | **0.1784** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6545** | **302.6545** | **0.0711** | **0.0000** | **304.4331** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2027

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0111 | 0.4775 | 0.1373 | 2.0500e-003 | 0.0727 | 3.1200e-003 | 0.0758 | 0.0210 | 2.9800e-003 | 0.0240 | 0.0000 | 196.7717 | 196.7717 | 7.7000e-004 | 0.0294 | 205.5371 |
| Worker | 0.0747 | 0.0428 | 0.6040 | 1.9600e-003 | 0.2556 | 1.1000e-003 | 0.2567 | 0.0679 | 1.0100e-003 | 0.0690 | 0.0000 | 188.2002 | 188.2002 | 4.3100e-003 | 4.5700e-003 | 189.6708 |
| **Total** | **0.0858** | **0.5202** | **0.7413** | **4.0100e-003** | **0.3283** | **4.2200e-003** | **0.3325** | **0.0889** | **3.9900e-003** | **0.0929** | **0.0000** | **384.9719** | **384.9719** | **5.0800e-003** | **0.0339** | **395.2079** |

## 3.5 Building Construction - 2028

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1778 | 1.6211 | 2.0910 | 3.5000e-003 | | 0.0686 | 0.0686 | | 0.0645 | 0.0645 | 0.0000 | 301.4953 | 301.4953 | 0.0709 | 0.0000 | 303.2671 |
| **Total** | **0.1778** | **1.6211** | **2.0910** | **3.5000e-003** | | **0.0686** | **0.0686** | | **0.0645** | **0.0645** | **0.0000** | **301.4953** | **301.4953** | **0.0709** | **0.0000** | **303.2671** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2028

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0108 | 0.4733 | 0.1351 | 2.0000e-003 | 0.0724 | 3.0900e-003 | 0.0755 | 0.0209 | 2.9500e-003 | 0.0239 | 0.0000 | 192.1065 | 192.1065 | 7.5000e-004 | 0.0286 | 200.6564 |
| Worker | 0.0697 | 0.0389 | 0.5707 | 1.9000e-003 | 0.2546 | 1.0300e-003 | 0.2557 | 0.0677 | 9.5000e-004 | 0.0686 | 0.0000 | 183.7293 | 183.7293 | 3.9300e-003 | 4.3300e-003 | 185.1188 |
| **Total** | **0.0805** | **0.5122** | **0.7058** | **3.9000e-003** | **0.3270** | **4.1200e-003** | **0.3312** | **0.0886** | **3.9000e-003** | **0.0925** | **0.0000** | **375.8358** | **375.8358** | **4.6800e-003** | **0.0330** | **385.7752** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1778 | 1.6211 | 2.0910 | 3.5000e-003 | | 0.0686 | 0.0686 | | 0.0645 | 0.0645 | 0.0000 | 301.4949 | 301.4949 | 0.0709 | 0.0000 | 303.2667 |
| **Total** | **0.1778** | **1.6211** | **2.0910** | **3.5000e-003** | | **0.0686** | **0.0686** | | **0.0645** | **0.0645** | **0.0000** | **301.4949** | **301.4949** | **0.0709** | **0.0000** | **303.2667** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2028

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0108 | 0.4733 | 0.1351 | 2.0000e-003 | 0.0724 | 3.0900e-003 | 0.0755 | 0.0209 | 2.9500e-003 | 0.0239 | 0.0000 | 192.1065 | 192.1065 | 7.5000e-004 | 0.0286 | 200.6564 |
| Worker | 0.0697 | 0.0389 | 0.5707 | 1.9000e-003 | 0.2546 | 1.0300e-003 | 0.2557 | 0.0677 | 9.5000e-004 | 0.0686 | 0.0000 | 183.7293 | 183.7293 | 3.9300e-003 | 4.3300e-003 | 185.1188 |
| **Total** | **0.0805** | **0.5122** | **0.7058** | **3.9000e-003** | **0.3270** | **4.1200e-003** | **0.3312** | **0.0886** | **3.9000e-003** | **0.0925** | **0.0000** | **375.8358** | **375.8358** | **4.6800e-003** | **0.0330** | **385.7752** |

## 3.5 Building Construction - 2029

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0923 | 0.8417 | 1.0857 | 1.8200e-003 | | 0.0356 | 0.0356 | | 0.0335 | 0.0335 | 0.0000 | 156.5456 | 156.5456 | 0.0368 | 0.0000 | 157.4656 |
| **Total** | **0.0923** | **0.8417** | **1.0857** | **1.8200e-003** | | **0.0356** | **0.0356** | | **0.0335** | **0.0335** | **0.0000** | **156.5456** | **156.5456** | **0.0368** | **0.0000** | **157.4656** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2029

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 5.5500e-003 | 0.2444 | 0.0694 | 1.0200e-003 | 0.0376 | 1.5900e-003 | 0.0392 | 0.0109 | 1.5200e-003 | 0.0124 | 0.0000 | 97.7854 | 97.7854 | 3.8000e-004 | 0.0146 | 102.1336 |
| Worker | 0.0339 | 0.0186 | 0.2825 | 9.6000e-004 | 0.1322 | 5.0000e-004 | 0.1327 | 0.0351 | 4.6000e-004 | 0.0356 | 0.0000 | 93.6595 | 93.6595 | 1.8800e-003 | 2.1500e-003 | 94.3480 |
| **Total** | **0.0394** | **0.2629** | **0.3519** | **1.9800e-003** | **0.1698** | **2.0900e-003** | **0.1719** | **0.0460** | **1.9800e-003** | **0.0480** | **0.0000** | **191.4449** | **191.4449** | **2.2600e-003** | **0.0167** | **196.4815** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0923 | 0.8417 | 1.0857 | 1.8200e-003 | | 0.0356 | 0.0356 | | 0.0335 | 0.0335 | 0.0000 | 156.5454 | 156.5454 | 0.0368 | 0.0000 | 157.4654 |
| **Total** | **0.0923** | **0.8417** | **1.0857** | **1.8200e-003** | | **0.0356** | **0.0356** | | **0.0335** | **0.0335** | **0.0000** | **156.5454** | **156.5454** | **0.0368** | **0.0000** | **157.4654** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2029

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 5.5500e-003 | 0.2444 | 0.0694 | 1.0200e-003 | 0.0376 | 1.5900e-003 | 0.0392 | 0.0109 | 1.5200e-003 | 0.0124 | 0.0000 | 97.7854 | 97.7854 | 3.8000e-004 | 0.0146 | 102.1336 |
| Worker | 0.0339 | 0.0186 | 0.2825 | 9.6000e-004 | 0.1322 | 5.0000e-004 | 0.1327 | 0.0351 | 4.6000e-004 | 0.0356 | 0.0000 | 93.6595 | 93.6595 | 1.8800e-003 | 2.1500e-003 | 94.3480 |
| **Total** | **0.0394** | **0.2629** | **0.3519** | **1.9800e-003** | **0.1698** | **2.0900e-003** | **0.1719** | **0.0460** | **1.9800e-003** | **0.0480** | **0.0000** | **191.4449** | **191.4449** | **2.2600e-003** | **0.0167** | **196.4815** |

## 3.6 Architectural Coating - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.3586 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 9.5800e-003 | 0.0652 | 0.0906 | 1.5000e-004 | | 3.5400e-003 | 3.5400e-003 | | 3.5400e-003 | 3.5400e-003 | 0.0000 | 12.7663 | 12.7663 | 7.6000e-004 | 0.0000 | 12.7854 |
| **Total** | **0.3682** | **0.0652** | **0.0906** | **1.5000e-004** | | **3.5400e-003** | **3.5400e-003** | | **3.5400e-003** | **3.5400e-003** | **0.0000** | **12.7663** | **12.7663** | **7.6000e-004** | **0.0000** | **12.7854** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2023

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 7.6900e-003 | 5.1600e-003 | 0.0610 | 1.7000e-004 | 0.0196 | 1.0000e-004 | 0.0197 | 5.2100e-003 | 1.0000e-004 | 5.3000e-003 | 0.0000 | 15.8614 | 15.8614 | 4.9000e-004 | 4.6000e-004 | 16.0113 |
| **Total** | **7.6900e-003** | **5.1600e-003** | **0.0610** | **1.7000e-004** | **0.0196** | **1.0000e-004** | **0.0197** | **5.2100e-003** | **1.0000e-004** | **5.3000e-003** | **0.0000** | **15.8614** | **15.8614** | **4.9000e-004** | **4.6000e-004** | **16.0113** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.3586 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 9.5800e-003 | 0.0652 | 0.0906 | 1.5000e-004 | | 3.5400e-003 | 3.5400e-003 | | 3.5400e-003 | 3.5400e-003 | 0.0000 | 12.7663 | 12.7663 | 7.6000e-004 | 0.0000 | 12.7854 |
| **Total** | **0.3682** | **0.0652** | **0.0906** | **1.5000e-004** | | **3.5400e-003** | **3.5400e-003** | | **3.5400e-003** | **3.5400e-003** | **0.0000** | **12.7663** | **12.7663** | **7.6000e-004** | **0.0000** | **12.7854** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2023

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 7.6900e-003 | 5.1600e-003 | 0.0610 | 1.7000e-004 | 0.0196 | 1.0000e-004 | 0.0197 | 5.2100e-003 | 1.0000e-004 | 5.3000e-003 | 0.0000 | 15.8614 | 15.8614 | 4.9000e-004 | 4.6000e-004 | 16.0113 |
| **Total** | **7.6900e-003** | **5.1600e-003** | **0.0610** | **1.7000e-004** | **0.0196** | **1.0000e-004** | **0.0197** | **5.2100e-003** | **1.0000e-004** | **5.3000e-003** | **0.0000** | **15.8614** | **15.8614** | **4.9000e-004** | **4.6000e-004** | **16.0113** |

## 3.6 Architectural Coating - 2024

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.9395 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0237 | 0.1597 | 0.2371 | 3.9000e-004 | | 7.9800e-003 | 7.9800e-003 | | 7.9800e-003 | 7.9800e-003 | 0.0000 | 33.4476 | 33.4476 | 1.8800e-003 | 0.0000 | 33.4947 |
| **Total** | **0.9632** | **0.1597** | **0.2371** | **3.9000e-004** | | **7.9800e-003** | **7.9800e-003** | | **7.9800e-003** | **7.9800e-003** | **0.0000** | **33.4476** | **33.4476** | **1.8800e-003** | **0.0000** | **33.4947** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2024

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0186 | 0.0119 | 0.1477 | 4.3000e-004 | 0.0513 | 2.6000e-004 | 0.0516 | 0.0136 | 2.4000e-004 | 0.0139 | 0.0000 | 40.5150 | 40.5150 | 1.1600e-003 | 1.1200e-003 | 40.8767 |
| **Total** | **0.0186** | **0.0119** | **0.1477** | **4.3000e-004** | **0.0513** | **2.6000e-004** | **0.0516** | **0.0136** | **2.4000e-004** | **0.0139** | **0.0000** | **40.5150** | **40.5150** | **1.1600e-003** | **1.1200e-003** | **40.8767** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.9395 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0237 | 0.1597 | 0.2371 | 3.9000e-004 | | 7.9800e-003 | 7.9800e-003 | | 7.9800e-003 | 7.9800e-003 | 0.0000 | 33.4476 | 33.4476 | 1.8800e-003 | 0.0000 | 33.4947 |
| **Total** | **0.9632** | **0.1597** | **0.2371** | **3.9000e-004** | | **7.9800e-003** | **7.9800e-003** | | **7.9800e-003** | **7.9800e-003** | **0.0000** | **33.4476** | **33.4476** | **1.8800e-003** | **0.0000** | **33.4947** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2024

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0186 | 0.0119 | 0.1477 | 4.3000e-004 | 0.0513 | 2.6000e-004 | 0.0516 | 0.0136 | 2.4000e-004 | 0.0139 | 0.0000 | 40.5150 | 40.5150 | 1.1600e-003 | 1.1200e-003 | 40.8767 |
| **Total** | **0.0186** | **0.0119** | **0.1477** | **4.3000e-004** | **0.0513** | **2.6000e-004** | **0.0516** | **0.0136** | **2.4000e-004** | **0.0139** | **0.0000** | **40.5150** | **40.5150** | **1.1600e-003** | **1.1200e-003** | **40.8767** |

## 3.6 Architectural Coating - 2025

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.9360 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0223 | 0.1495 | 0.2361 | 3.9000e-004 | | 6.7200e-003 | 6.7200e-003 | | 6.7200e-003 | 6.7200e-003 | 0.0000 | 33.3200 | 33.3200 | 1.8200e-003 | 0.0000 | 33.3654 |
| **Total** | **0.9583** | **0.1495** | **0.2361** | **3.9000e-004** | | **6.7200e-003** | **6.7200e-003** | | **6.7200e-003** | **6.7200e-003** | **0.0000** | **33.3200** | **33.3200** | **1.8200e-003** | **0.0000** | **33.3654** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2025

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0172 | 0.0105 | 0.1365 | 4.2000e-004 | 0.0511 | 2.4000e-004 | 0.0514 | 0.0136 | 2.3000e-004 | 0.0138 | 0.0000 | 39.3820 | 39.3820 | 1.0400e-003 | 1.0300e-003 | 39.7159 |
| **Total** | **0.0172** | **0.0105** | **0.1365** | **4.2000e-004** | **0.0511** | **2.4000e-004** | **0.0514** | **0.0136** | **2.3000e-004** | **0.0138** | **0.0000** | **39.3820** | **39.3820** | **1.0400e-003** | **1.0300e-003** | **39.7159** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.9360 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0223 | 0.1495 | 0.2361 | 3.9000e-004 | | 6.7200e-003 | 6.7200e-003 | | 6.7200e-003 | 6.7200e-003 | 0.0000 | 33.3199 | 33.3199 | 1.8200e-003 | 0.0000 | 33.3654 |
| **Total** | **0.9583** | **0.1495** | **0.2361** | **3.9000e-004** | | **6.7200e-003** | **6.7200e-003** | | **6.7200e-003** | **6.7200e-003** | **0.0000** | **33.3199** | **33.3199** | **1.8200e-003** | **0.0000** | **33.3654** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2025

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0172 | 0.0105 | 0.1365 | 4.2000e-004 | 0.0511 | 2.4000e-004 | 0.0514 | 0.0136 | 2.3000e-004 | 0.0138 | 0.0000 | 39.3820 | 39.3820 | 1.0400e-003 | 1.0300e-003 | 39.7159 |
| **Total** | **0.0172** | **0.0105** | **0.1365** | **4.2000e-004** | **0.0511** | **2.4000e-004** | **0.0514** | **0.0136** | **2.3000e-004** | **0.0138** | **0.0000** | **39.3820** | **39.3820** | **1.0400e-003** | **1.0300e-003** | **39.7159** |

## 3.6 Architectural Coating - 2026

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.9360 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0223 | 0.1495 | 0.2361 | 3.9000e-004 | | 6.7200e-003 | 6.7200e-003 | | 6.7200e-003 | 6.7200e-003 | 0.0000 | 33.3200 | 33.3200 | 1.8200e-003 | 0.0000 | 33.3654 |
| **Total** | **0.9583** | **0.1495** | **0.2361** | **3.9000e-004** | | **6.7200e-003** | **6.7200e-003** | | **6.7200e-003** | **6.7200e-003** | **0.0000** | **33.3200** | **33.3200** | **1.8200e-003** | **0.0000** | **33.3654** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2026

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0160 | 9.4600e-003 | 0.1283 | 4.0000e-004 | 0.0511 | 2.3000e-004 | 0.0514 | 0.0136 | 2.2000e-004 | 0.0138 | 0.0000 | 38.4882 | 38.4882 | 9.5000e-004 | 9.7000e-004 | 38.8006 |
| **Total** | **0.0160** | **9.4600e-003** | **0.1283** | **4.0000e-004** | **0.0511** | **2.3000e-004** | **0.0514** | **0.0136** | **2.2000e-004** | **0.0138** | **0.0000** | **38.4882** | **38.4882** | **9.5000e-004** | **9.7000e-004** | **38.8006** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.9360 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0223 | 0.1495 | 0.2361 | 3.9000e-004 | | 6.7200e-003 | 6.7200e-003 | | 6.7200e-003 | 6.7200e-003 | 0.0000 | 33.3199 | 33.3199 | 1.8200e-003 | 0.0000 | 33.3654 |
| **Total** | **0.9583** | **0.1495** | **0.2361** | **3.9000e-004** | | **6.7200e-003** | **6.7200e-003** | | **6.7200e-003** | **6.7200e-003** | **0.0000** | **33.3199** | **33.3199** | **1.8200e-003** | **0.0000** | **33.3654** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2026

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0160 | 9.4600e-003 | 0.1283 | 4.0000e-004 | 0.0511 | 2.3000e-004 | 0.0514 | 0.0136 | 2.2000e-004 | 0.0138 | 0.0000 | 38.4882 | 38.4882 | 9.5000e-004 | 9.7000e-004 | 38.8006 |
| **Total** | **0.0160** | **9.4600e-003** | **0.1283** | **4.0000e-004** | **0.0511** | **2.3000e-004** | **0.0514** | **0.0136** | **2.2000e-004** | **0.0138** | **0.0000** | **38.4882** | **38.4882** | **9.5000e-004** | **9.7000e-004** | **38.8006** |

## 3.6 Architectural Coating - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.9360 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0223 | 0.1495 | 0.2361 | 3.9000e-004 | | 6.7200e-003 | 6.7200e-003 | | 6.7200e-003 | 6.7200e-003 | 0.0000 | 33.3200 | 33.3200 | 1.8200e-003 | 0.0000 | 33.3654 |
| **Total** | **0.9583** | **0.1495** | **0.2361** | **3.9000e-004** | | **6.7200e-003** | **6.7200e-003** | | **6.7200e-003** | **6.7200e-003** | **0.0000** | **33.3200** | **33.3200** | **1.8200e-003** | **0.0000** | **33.3654** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2027

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0149 | 8.5600e-003 | 0.1208 | 3.9000e-004 | 0.0511 | 2.2000e-004 | 0.0513 | 0.0136 | 2.0000e-004 | 0.0138 | 0.0000 | 37.6400 | 37.6400 | 8.6000e-004 | 9.1000e-004 | 37.9342 |
| **Total** | **0.0149** | **8.5600e-003** | **0.1208** | **3.9000e-004** | **0.0511** | **2.2000e-004** | **0.0513** | **0.0136** | **2.0000e-004** | **0.0138** | **0.0000** | **37.6400** | **37.6400** | **8.6000e-004** | **9.1000e-004** | **37.9342** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.9360 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0223 | 0.1495 | 0.2361 | 3.9000e-004 | | 6.7200e-003 | 6.7200e-003 | | 6.7200e-003 | 6.7200e-003 | 0.0000 | 33.3199 | 33.3199 | 1.8200e-003 | 0.0000 | 33.3654 |
| **Total** | **0.9583** | **0.1495** | **0.2361** | **3.9000e-004** | | **6.7200e-003** | **6.7200e-003** | | **6.7200e-003** | **6.7200e-003** | **0.0000** | **33.3199** | **33.3199** | **1.8200e-003** | **0.0000** | **33.3654** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2027

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0149 | 8.5600e-003 | 0.1208 | 3.9000e-004 | 0.0511 | 2.2000e-004 | 0.0513 | 0.0136 | 2.0000e-004 | 0.0138 | 0.0000 | 37.6400 | 37.6400 | 8.6000e-004 | 9.1000e-004 | 37.9342 |
| **Total** | **0.0149** | **8.5600e-003** | **0.1208** | **3.9000e-004** | **0.0511** | **2.2000e-004** | **0.0513** | **0.0136** | **2.0000e-004** | **0.0138** | **0.0000** | **37.6400** | **37.6400** | **8.6000e-004** | **9.1000e-004** | **37.9342** |

## 3.6 Architectural Coating - 2028

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.9324 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0222 | 0.1489 | 0.2352 | 3.9000e-004 | | 6.7000e-003 | 6.7000e-003 | | 6.7000e-003 | 6.7000e-003 | 0.0000 | 33.1923 | 33.1923 | 1.8100e-003 | 0.0000 | 33.2376 |
| **Total** | **0.9546** | **0.1489** | **0.2352** | **3.9000e-004** | | **6.7000e-003** | **6.7000e-003** | | **6.7000e-003** | **6.7000e-003** | **0.0000** | **33.1923** | **33.1923** | **1.8100e-003** | **0.0000** | **33.2376** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2028

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0139 | 7.7800e-003 | 0.1141 | 3.8000e-004 | 0.0509 | 2.1000e-004 | 0.0511 | 0.0135 | 1.9000e-004 | 0.0137 | 0.0000 | 36.7459 | 36.7459 | 7.9000e-004 | 8.7000e-004 | 37.0238 |
| **Total** | **0.0139** | **7.7800e-003** | **0.1141** | **3.8000e-004** | **0.0509** | **2.1000e-004** | **0.0511** | **0.0135** | **1.9000e-004** | **0.0137** | **0.0000** | **36.7459** | **36.7459** | **7.9000e-004** | **8.7000e-004** | **37.0238** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.9324 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0222 | 0.1489 | 0.2352 | 3.9000e-004 | | 6.7000e-003 | 6.7000e-003 | | 6.7000e-003 | 6.7000e-003 | 0.0000 | 33.1923 | 33.1923 | 1.8100e-003 | 0.0000 | 33.2375 |
| **Total** | **0.9546** | **0.1489** | **0.2352** | **3.9000e-004** | | **6.7000e-003** | **6.7000e-003** | | **6.7000e-003** | **6.7000e-003** | **0.0000** | **33.1923** | **33.1923** | **1.8100e-003** | **0.0000** | **33.2375** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2028

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0139 | 7.7800e-003 | 0.1141 | 3.8000e-004 | 0.0509 | 2.1000e-004 | 0.0511 | 0.0135 | 1.9000e-004 | 0.0137 | 0.0000 | 36.7459 | 36.7459 | 7.9000e-004 | 8.7000e-004 | 37.0238 |
| **Total** | **0.0139** | **7.7800e-003** | **0.1141** | **3.8000e-004** | **0.0509** | **2.1000e-004** | **0.0511** | **0.0135** | **1.9000e-004** | **0.0137** | **0.0000** | **36.7459** | **36.7459** | **7.9000e-004** | **8.7000e-004** | **37.0238** |

## 3.6 Architectural Coating - 2029

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.5200 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0124 | 0.0831 | 0.1312 | 2.2000e-004 | | 3.7300e-003 | 3.7300e-003 | | 3.7300e-003 | 3.7300e-003 | 0.0000 | 18.5111 | 18.5111 | 1.0100e-003 | 0.0000 | 18.5363 |
| **Total** | **0.5324** | **0.0831** | **0.1312** | **2.2000e-004** | | **3.7300e-003** | **3.7300e-003** | | **3.7300e-003** | **3.7300e-003** | **0.0000** | **18.5111** | **18.5111** | **1.0100e-003** | **0.0000** | **18.5363** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2029

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 7.2700e-003 | 3.9900e-003 | 0.0607 | 2.1000e-004 | 0.0284 | 1.1000e-004 | 0.0285 | 7.5500e-003 | 1.0000e-004 | 7.6500e-003 | 0.0000 | 20.1195 | 20.1195 | 4.0000e-004 | 4.6000e-004 | 20.2673 |
| **Total** | **7.2700e-003** | **3.9900e-003** | **0.0607** | **2.1000e-004** | **0.0284** | **1.1000e-004** | **0.0285** | **7.5500e-003** | **1.0000e-004** | **7.6500e-003** | **0.0000** | **20.1195** | **20.1195** | **4.0000e-004** | **4.6000e-004** | **20.2673** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.5200 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0124 | 0.0831 | 0.1312 | 2.2000e-004 | | 3.7300e-003 | 3.7300e-003 | | 3.7300e-003 | 3.7300e-003 | 0.0000 | 18.5111 | 18.5111 | 1.0100e-003 | 0.0000 | 18.5363 |
| **Total** | **0.5324** | **0.0831** | **0.1312** | **2.2000e-004** | | **3.7300e-003** | **3.7300e-003** | | **3.7300e-003** | **3.7300e-003** | **0.0000** | **18.5111** | **18.5111** | **1.0100e-003** | **0.0000** | **18.5363** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

### 3.6 Architectural Coating - 2029

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 7.2700e-003 | 3.9900e-003 | 0.0607 | 2.1000e-004 | 0.0284 | 1.1000e-004 | 0.0285 | 7.5500e-003 | 1.0000e-004 | 7.6500e-003 | 0.0000 | 20.1195 | 20.1195 | 4.0000e-004 | 4.6000e-004 | 20.2673 |
| **Total** | **7.2700e-003** | **3.9900e-003** | **0.0607** | **2.1000e-004** | **0.0284** | **1.1000e-004** | **0.0285** | **7.5500e-003** | **1.0000e-004** | **7.6500e-003** | **0.0000** | **20.1195** | **20.1195** | **4.0000e-004** | **4.6000e-004** | **20.2673** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Improve Pedestrian Network

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.9979 | 1.7637 | 10.1608 | 0.0258 | 3.2689 | 0.0188 | 3.2877 | 0.8738 | 0.0177 | 0.8914 | 0.0000 | 2,564.9402 | 2,564.9402 | 0.1120 | 0.1298 | 2,606.4220 |
| Unmitigated | 1.0082 | 1.7905 | 10.3186 | 0.0263 | 3.3356 | 0.0191 | 3.3548 | 0.8916 | 0.0180 | 0.9096 | 0.0000 | 2,615.6407 | 2,615.6407 | 0.1136 | 0.1319 | 2,657.7979 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 5.38 | 13.52 | 15.11 | 16,940 | 16,601 |
| Single Family Housing | 3,105.76 | 3,138.66 | 2812.95 | 8,892,327 | 8,714,481 |
| Total | 3,111.14 | 3,152.18 | 2,828.06 | 8,909,267 | 8,731,082 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Single Family Housing | 10.80 | 7.30 | 7.50 | 45.60 | 19.00 | 35.40 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.552787 | 0.055429 | 0.175422 | 0.126588 | 0.020626 | 0.005781 | 0.013059 | 0.024880 | 0.000595 | 0.000297 | 0.020966 | 0.001153 | 0.002414 |
| Single Family Housing | 0.552787 | 0.055429 | 0.175422 | 0.126588 | 0.020626 | 0.005781 | 0.013059 | 0.024880 | 0.000595 | 0.000297 | 0.020966 | 0.001153 | 0.002414 |

# 5.0 Energy Detail

Hat Ranch Project - Agricultural Character Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Historical Energy Use: N

## 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 137.6747 | 137.6747 | 0.0389 | 4.7200e-003 | 140.0548 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 137.6747 | 137.6747 | 0.0389 | 4.7200e-003 | 140.0548 |
| NaturalGas Mitigated | 0.0420 | 0.3587 | 0.1526 | 2.2900e-003 | | 0.0290 | 0.0290 | | 0.0290 | 0.0290 | 0.0000 | 415.3705 | 415.3705 | 7.9600e-003 | 7.6200e-003 | 417.8388 |
| NaturalGas Unmitigated | 0.0420 | 0.3587 | 0.1526 | 2.2900e-003 | | 0.0290 | 0.0290 | | 0.0290 | 0.0290 | 0.0000 | 415.3705 | 415.3705 | 7.9600e-003 | 7.6200e-003 | 417.8388 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 7.78375e+006 | 0.0420 | 0.3587 | 0.1526 | 2.2900e-003 | | 0.0290 | 0.0290 | | 0.0290 | 0.0290 | 0.0000 | 415.3705 | 415.3705 | 7.9600e-003 | 7.6200e-003 | 417.8388 |
| **Total** | | **0.0420** | **0.3587** | **0.1526** | **2.2900e-003** | | **0.0290** | **0.0290** | | **0.0290** | **0.0290** | **0.0000** | **415.3705** | **415.3705** | **7.9600e-003** | **7.6200e-003** | **417.8388** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 7.78375e+006 | 0.0420 | 0.3587 | 0.1526 | 2.2900e-003 | | 0.0290 | 0.0290 | | 0.0290 | 0.0290 | 0.0000 | 415.3705 | 415.3705 | 7.9600e-003 | 7.6200e-003 | 417.8388 |
| **Total** | | **0.0420** | **0.3587** | **0.1526** | **2.2900e-003** | | **0.0290** | **0.0290** | | **0.0290** | **0.0290** | **0.0000** | **415.3705** | **415.3705** | **7.9600e-003** | **7.6200e-003** | **417.8388** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 2.60153e+006 | 137.6747 | 0.0389 | 4.7200e-003 | 140.0548 |
| **Total** | | **137.6747** | **0.0389** | **4.7200e-003** | **140.0548** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 2.60153e+006 | 137.6747 | 0.0389 | 4.7200e-003 | 140.0548 |
| **Total** | | **137.6747** | **0.0389** | **4.7200e-003** | **140.0548** |

## 6.0 Area Detail

Hat Ranch Project - Agricultural Character Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Cleaning Supplies

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 4.2210 | 0.3631 | 15.2459 | 0.0444 | | 2.1969 | 2.1969 | | 2.1969 | 2.1969 | 291.4803 | 145.3176 | 436.7979 | 1.3673 | 2.6100e-003 | 471.7599 |
| Unmitigated | 4.4281 | 0.3688 | 15.8308 | 0.0445 | | 2.2003 | 2.2003 | | 2.2003 | 2.2003 | 291.4803 | 146.5157 | 437.9961 | 1.3691 | 2.6100e-003 | 473.0033 |

Hat Ranch Project - Agricultural Character Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.5558 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 2.3157 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 1.4838 | 0.3408 | 13.3964 | 0.0443 | | 2.1868 | 2.1868 | | 2.1868 | 2.1868 | 291.4803 | 142.5252 | 434.0056 | 1.3653 | 2.6100e-003 | 468.9178 |
| Landscaping | 0.0728 | 0.0281 | 2.4343 | 1.3000e-004 | | 0.0136 | 0.0136 | | 0.0136 | 0.0136 | 0.0000 | 3.9905 | 3.9905 | 3.8000e-003 | 0.0000 | 4.0855 |
| **Total** | **4.4281** | **0.3688** | **15.8308** | **0.0445** | | **2.2003** | **2.2003** | | **2.2003** | **2.2003** | **291.4803** | **146.5157** | **437.9961** | **1.3691** | **2.6100e-003** | **473.0033** |

Hat Ranch Project - Agricultural Character Alternative - San Joaquin Valley Unified APCD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.5558 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 2.1427 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 1.4838 | 0.3408 | 13.3964 | 0.0443 | | 2.1868 | 2.1868 | | 2.1868 | 2.1868 | 291.4803 | 142.5252 | 434.0056 | 1.3653 | 2.6100e-003 | 468.9178 |
| Landscaping | 0.0386 | 0.0224 | 1.8495 | 8.0000e-005 | | 0.0101 | 0.0101 | | 0.0101 | 0.0101 | 0.0000 | 2.7923 | 2.7923 | 1.9900e-003 | 0.0000 | 2.8421 |
| **Total** | **4.2210** | **0.3631** | **15.2459** | **0.0444** | | **2.1969** | **2.1969** | | **2.1969** | **2.1969** | **291.4803** | **145.3176** | **436.7979** | **1.3673** | **2.6100e-003** | **471.7599** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 16.1594 | 0.7011 | 0.0168 | 38.6980 |
| Unmitigated | 16.9645 | 0.7014 | 0.0168 | 39.5171 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| City Park | 0 / 8.22122 | 1.5228 | 4.3000e-004 | 5.0000e-005 | 1.5491 |
| Single Family Housing | 21.4357 / 13.5138 | 15.4418 | 0.7009 | 0.0168 | 37.9680 |
| **Total** | | **16.9645** | **0.7014** | **0.0168** | **39.5171** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| City Park | 0 / 6.57698 | 1.2182 | 3.4000e-004 | 4.0000e-005 | 1.2393 |
| Single Family Housing | 21.4357 / 10.811 | 14.9412 | 0.7008 | 0.0168 | 37.4588 |
| **Total** | | **16.1594** | **0.7011** | **0.0168** | **38.6980** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 79.8546 | 4.7193 | 0.0000 | 197.8364 |
| Unmitigated | 79.8546 | 4.7193 | 0.0000 | 197.8364 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| City Park | 0.59 | 0.1198 | 7.0800e-003 | 0.0000 | 0.2967 |
| Single Family Housing | 392.8 | 79.7349 | 4.7122 | 0.0000 | 197.5397 |
| **Total** | | **79.8546** | **4.7193** | **0.0000** | **197.8364** |

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| City Park | 0.59 | 0.1198 | 7.0800e-003 | 0.0000 | 0.2967 |
| Single Family Housing | 392.8 | 79.7349 | 4.7122 | 0.0000 | 197.5397 |
| **Total** | | **79.8546** | **4.7193** | **0.0000** | **197.8364** |

## 9.0 Operational Offroad

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

Hat Ranch Project - Agricultural Character Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

# Hat Ranch Project - Agricultural Character Alternative

**San Joaquin Valley Unified APCD Air District, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| City Park | 6.90 | Acre | 6.90 | 300,564.00 | 0 |
| Single Family Housing | 329.00 | Dwelling Unit | 72.10 | 592,200.00 | 1044 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.7 | **Precipitation Freq (Days)** | 45 |
| **Climate Zone** | 2 | | | **Operational Year** | 2035 |
| **Utility Company** | Pacific Gas and Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 116.67 | **CH4 Intensity (lb/MWhr)** | 0.033 | **N2O Intensity (lb/MWhr)** | 0.004 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor adjusted per PG&E's compliance with RPS.

Land Use - Lot acrages adjusted according to site plan.

Construction Phase - Architectural coating phase timing adjusted to occur during building construction.

Vehicle Trips -

Mobile Land Use Mitigation -

Area Mitigation - All electric landscaping equipment would be used, pursuant to AB 1346
Low VOC cleaning supplies required, per SJVAPCD Rule 4663

Water Mitigation - Water conservation strategy applied to reflect compliance with MWELO.

Woodstoves -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstructionPhase | NumDays | 110.00 | 1,550.00 |

Hat Ranch Project - Agricultural Character Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | |
|---|---|---|---|
| tblLandUse | LotAcreage | 106.82 | 72.10 |
| tblProjectCharacteristics | CO2IntensityFactor | 203.98 | 116.67 |

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2022 | 3.7041 | 38.8883 | 29.6734 | 0.0637 | 19.8049 | 1.6358 | 21.4183 | 10.1417 | 1.5049 | 11.6260 | 0.0000 | 6,170.8327 | 6,170.8327 | 1.9490 | 4.3100e-003 | 6,220.8436 |
| 2023 | 10.0994 | 34.5548 | 28.6262 | 0.0691 | 9.3679 | 1.4253 | 10.7932 | 3.6973 | 1.3113 | 5.0086 | 0.0000 | 6,906.5143 | 6,906.5143 | 1.9485 | 0.3256 | 7,020.9373 |
| 2024 | 9.9000 | 18.7228 | 26.8661 | 0.0681 | 2.9846 | 0.7102 | 3.6949 | 0.8046 | 0.6718 | 1.4764 | 0.0000 | 6,820.6729 | 6,820.6729 | 0.6839 | 0.3168 | 6,932.1770 |
| 2025 | 9.7107 | 17.6069 | 26.1830 | 0.0671 | 2.9847 | 0.6145 | 3.5991 | 0.8046 | 0.5812 | 1.3859 | 0.0000 | 6,735.0075 | 6,735.0075 | 0.6740 | 0.3080 | 6,843.6415 |
| 2026 | 9.6459 | 17.5418 | 25.7224 | 0.0662 | 2.9847 | 0.6139 | 3.5985 | 0.8046 | 0.5807 | 1.3853 | 0.0000 | 6,652.9151 | 6,652.9151 | 0.6689 | 0.2998 | 6,758.9837 |
| 2027 | 9.5878 | 17.4804 | 25.3010 | 0.0652 | 2.9847 | 0.6131 | 3.5977 | 0.8046 | 0.5799 | 1.3846 | 0.0000 | 6,571.2254 | 6,571.2254 | 0.6645 | 0.2918 | 6,674.8077 |
| 2028 | 9.5353 | 17.4315 | 24.9538 | 0.0644 | 2.9847 | 0.6123 | 3.5970 | 0.8046 | 0.5792 | 1.3838 | 0.0000 | 6,496.4385 | 6,496.4385 | 0.6607 | 0.2845 | 6,597.7485 |
| 2029 | 9.4860 | 17.3852 | 24.6559 | 0.0636 | 2.9847 | 0.6115 | 3.5962 | 0.8046 | 0.5785 | 1.3831 | 0.0000 | 6,427.2930 | 6,427.2930 | 0.6575 | 0.2778 | 6,526.5007 |
| **Maximum** | **10.0994** | **38.8883** | **29.6734** | **0.0691** | **19.8049** | **1.6358** | **21.4183** | **10.1417** | **1.5049** | **11.6260** | **0.0000** | **6,906.5143** | **6,906.5143** | **1.9490** | **0.3256** | **7,020.9373** |

Hat Ranch Project - Agricultural Character Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 2.1 Overall Construction (Maximum Daily Emission)

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2022 | 3.7041 | 38.8883 | 29.6734 | 0.0637 | 19.8049 | 1.6358 | 21.4183 | 10.1417 | 1.5049 | 11.6260 | 0.0000 | 6,170.8327 | 6,170.8327 | 1.9490 | 4.3100e-003 | 6,220.8436 |
| 2023 | 10.0994 | 34.5548 | 28.6262 | 0.0691 | 9.3679 | 1.4253 | 10.7932 | 3.6973 | 1.3113 | 5.0086 | 0.0000 | 6,906.5143 | 6,906.5143 | 1.9485 | 0.3256 | 7,020.9373 |
| 2024 | 9.9000 | 18.7228 | 26.8661 | 0.0681 | 2.9846 | 0.7102 | 3.6949 | 0.8046 | 0.6718 | 1.4764 | 0.0000 | 6,820.6729 | 6,820.6729 | 0.6839 | 0.3168 | 6,932.1770 |
| 2025 | 9.7107 | 17.6069 | 26.1830 | 0.0671 | 2.9847 | 0.6145 | 3.5991 | 0.8046 | 0.5812 | 1.3859 | 0.0000 | 6,735.0075 | 6,735.0075 | 0.6740 | 0.3080 | 6,843.6415 |
| 2026 | 9.6459 | 17.5418 | 25.7224 | 0.0662 | 2.9847 | 0.6139 | 3.5985 | 0.8046 | 0.5807 | 1.3853 | 0.0000 | 6,652.9151 | 6,652.9151 | 0.6689 | 0.2998 | 6,758.9837 |
| 2027 | 9.5878 | 17.4804 | 25.3010 | 0.0652 | 2.9847 | 0.6131 | 3.5977 | 0.8046 | 0.5799 | 1.3846 | 0.0000 | 6,571.2254 | 6,571.2254 | 0.6645 | 0.2918 | 6,674.8077 |
| 2028 | 9.5353 | 17.4315 | 24.9538 | 0.0644 | 2.9847 | 0.6123 | 3.5970 | 0.8046 | 0.5792 | 1.3838 | 0.0000 | 6,496.4385 | 6,496.4385 | 0.6607 | 0.2845 | 6,597.7485 |
| 2029 | 9.4860 | 17.3852 | 24.6559 | 0.0636 | 2.9847 | 0.6115 | 3.5962 | 0.8046 | 0.5785 | 1.3831 | 0.0000 | 6,427.2930 | 6,427.2930 | 0.6575 | 0.2778 | 6,526.5007 |
| **Maximum** | **10.0994** | **38.8883** | **29.6734** | **0.0691** | **19.8049** | **1.6358** | **21.4183** | **10.1417** | **1.5049** | **11.6260** | **0.0000** | **6,906.5143** | **6,906.5143** | **1.9490** | **0.3256** | **7,020.9373** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

Hat Ranch Project - Agricultural Character Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 52.7325 | 8.6231 | 353.7901 | 1.0825 | | 53.4870 | 53.4870 | | 53.4870 | 53.4870 | 7,836.6355 | 3,880.7576 | 11,717.3931 | 36.7547 | 0.0703 | 12,657.1942 |
| Energy | 0.2300 | 1.9653 | 0.8363 | 0.0125 | | 0.1589 | 0.1589 | | 0.1589 | 0.1589 | | 2,508.8633 | 2,508.8633 | 0.0481 | 0.0460 | 2,523.7723 |
| Mobile | 6.8482 | 9.4859 | 62.0063 | 0.1576 | 19.2876 | 0.1077 | 19.3953 | 5.1444 | 0.1013 | 5.2457 | | 17,282.8970 | 17,282.8970 | 0.6796 | 0.7987 | 17,537.9109 |
| **Total** | **59.8107** | **20.0742** | **416.6327** | **1.2526** | **19.2876** | **53.7536** | **73.0411** | **5.1444** | **53.7471** | **58.8915** | **7,836.6355** | **23,672.5179** | **31,509.1534** | **37.4823** | **0.9150** | **32,718.8774** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 51.4052 | 8.5593 | 347.2915 | 1.0820 | | 53.4487 | 53.4487 | | 53.4487 | 53.4487 | 7,836.6355 | 3,866.0827 | 11,702.7182 | 36.7325 | 0.0703 | 12,641.9653 |
| Energy | 0.2300 | 1.9653 | 0.8363 | 0.0125 | | 0.1589 | 0.1589 | | 0.1589 | 0.1589 | | 2,508.8633 | 2,508.8633 | 0.0481 | 0.0460 | 2,523.7723 |
| Mobile | 6.7908 | 9.3450 | 61.0012 | 0.1546 | 18.9018 | 0.1057 | 19.0075 | 5.0415 | 0.0994 | 5.1409 | | 16,947.1400 | 16,947.1400 | 0.6696 | 0.7858 | 17,198.0436 |
| **Total** | **58.4259** | **19.8696** | **409.1290** | **1.2491** | **18.9018** | **53.7133** | **72.6151** | **5.0415** | **53.7070** | **58.7485** | **7,836.6355** | **23,322.0861** | **31,158.7216** | **37.4502** | **0.9020** | **32,363.7811** |

Hat Ranch Project - Agricultural Character Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | 2.32 | 1.02 | 1.80 | 0.28 | 2.00 | 0.07 | 0.58 | 2.00 | 0.07 | 0.24 | 0.00 | 1.48 | 1.11 | 0.09 | 1.42 | 1.09 |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 5/1/2022 | 7/22/2022 | 5 | 60 | |
| 2 | Grading | Grading | 7/23/2022 | 2/24/2023 | 5 | 155 | |
| 3 | Paving | Paving | 2/25/2023 | 7/28/2023 | 5 | 110 | |
| 4 | Building Construction | Building Construction | 7/29/2023 | 7/6/2029 | 5 | 1550 | |
| 5 | Architectural Coating | Architectural Coating | 8/13/2023 | 7/20/2029 | 5 | 1550 | |

**Acres of Grading (Site Preparation Phase): 90**

**Acres of Grading (Grading Phase): 465**

**Acres of Paving: 0**

**Residential Indoor: 1,199,205; Residential Outdoor: 399,735; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | | | |
|---|---|---|---|---|---|
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 245.00 | 84.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 49.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.2 Site Preparation - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 19.6570 | 0.0000 | 19.6570 | 10.1025 | 0.0000 | 10.1025 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.1701 | 33.0835 | 19.6978 | 0.0380 | | 1.6126 | 1.6126 | | 1.4836 | 1.4836 | | 3,686.0619 | 3,686.0619 | 1.1922 | | 3,715.8655 |
| **Total** | **3.1701** | **33.0835** | **19.6978** | **0.0380** | **19.6570** | **1.6126** | **21.2696** | **10.1025** | **1.4836** | **11.5860** | | **3,686.0619** | **3,686.0619** | **1.1922** | | **3,715.8655** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0713 | 0.0403 | 0.5687 | 1.4100e-003 | 0.1479 | 8.1000e-004 | 0.1487 | 0.0392 | 7.5000e-004 | 0.0400 | | 143.4799 | 143.4799 | 4.3200e-003 | 3.8800e-003 | 144.7450 |
| **Total** | **0.0713** | **0.0403** | **0.5687** | **1.4100e-003** | **0.1479** | **8.1000e-004** | **0.1487** | **0.0392** | **7.5000e-004** | **0.0400** | | **143.4799** | **143.4799** | **4.3200e-003** | **3.8800e-003** | **144.7450** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.2 Site Preparation - 2022

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 19.6570 | 0.0000 | 19.6570 | 10.1025 | 0.0000 | 10.1025 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.1701 | 33.0835 | 19.6978 | 0.0380 | | 1.6126 | 1.6126 | | 1.4836 | 1.4836 | 0.0000 | 3,686.0619 | 3,686.0619 | 1.1922 | | 3,715.8655 |
| **Total** | **3.1701** | **33.0835** | **19.6978** | **0.0380** | **19.6570** | **1.6126** | **21.2696** | **10.1025** | **1.4836** | **11.5860** | **0.0000** | **3,686.0619** | **3,686.0619** | **1.1922** | | **3,715.8655** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0713 | 0.0403 | 0.5687 | 1.4100e-003 | 0.1479 | 8.1000e-004 | 0.1487 | 0.0392 | 7.5000e-004 | 0.0400 | | 143.4799 | 143.4799 | 4.3200e-003 | 3.8800e-003 | 144.7450 |
| **Total** | **0.0713** | **0.0403** | **0.5687** | **1.4100e-003** | **0.1479** | **8.1000e-004** | **0.1487** | **0.0392** | **7.5000e-004** | **0.0400** | | **143.4799** | **143.4799** | **4.3200e-003** | **3.8800e-003** | **144.7450** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.6248 | 38.8435 | 29.0415 | 0.0621 | | 1.6349 | 1.6349 | | 1.5041 | 1.5041 | | 6,011.4105 | 6,011.4105 | 1.9442 | | 6,060.0158 |
| **Total** | **3.6248** | **38.8435** | **29.0415** | **0.0621** | **9.2036** | **1.6349** | **10.8385** | **3.6538** | **1.5041** | **5.1579** | | **6,011.4105** | **6,011.4105** | **1.9442** | | **6,060.0158** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0793 | 0.0448 | 0.6319 | 1.5700e-003 | 0.1643 | 9.0000e-004 | 0.1652 | 0.0436 | 8.3000e-004 | 0.0444 | | 159.4222 | 159.4222 | 4.8000e-003 | 4.3100e-003 | 160.8278 |
| **Total** | **0.0793** | **0.0448** | **0.6319** | **1.5700e-003** | **0.1643** | **9.0000e-004** | **0.1652** | **0.0436** | **8.3000e-004** | **0.0444** | | **159.4222** | **159.4222** | **4.8000e-003** | **4.3100e-003** | **160.8278** |

## 3.3 Grading - 2022

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.6248 | 38.8435 | 29.0415 | 0.0621 | | 1.6349 | 1.6349 | | 1.5041 | 1.5041 | 0.0000 | 6,011.4105 | 6,011.4105 | 1.9442 | | 6,060.0158 |
| **Total** | **3.6248** | **38.8435** | **29.0415** | **0.0621** | **9.2036** | **1.6349** | **10.8385** | **3.6538** | **1.5041** | **5.1579** | **0.0000** | **6,011.4105** | **6,011.4105** | **1.9442** | | **6,060.0158** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0793 | 0.0448 | 0.6319 | 1.5700e-003 | 0.1643 | 9.0000e-004 | 0.1652 | 0.0436 | 8.3000e-004 | 0.0444 | | 159.4222 | 159.4222 | 4.8000e-003 | 4.3100e-003 | 160.8278 |
| **Total** | **0.0793** | **0.0448** | **0.6319** | **1.5700e-003** | **0.1643** | **9.0000e-004** | **0.1652** | **0.0436** | **8.3000e-004** | **0.0444** | | **159.4222** | **159.4222** | **4.8000e-003** | **4.3100e-003** | **160.8278** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.3217 | 34.5156 | 28.0512 | 0.0621 | | 1.4245 | 1.4245 | | 1.3105 | 1.3105 | | 6,011.4777 | 6,011.4777 | 1.9442 | | 6,060.0836 |
| **Total** | **3.3217** | **34.5156** | **28.0512** | **0.0621** | **9.2036** | **1.4245** | **10.6281** | **3.6538** | **1.3105** | **4.9643** | | **6,011.4777** | **6,011.4777** | **1.9442** | | **6,060.0836** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0726 | 0.0392 | 0.5750 | 1.5200e-003 | 0.1643 | 8.5000e-004 | 0.1651 | 0.0436 | 7.8000e-004 | 0.0444 | | 155.1920 | 155.1920 | 4.2800e-003 | 3.9600e-003 | 156.4785 |
| **Total** | **0.0726** | **0.0392** | **0.5750** | **1.5200e-003** | **0.1643** | **8.5000e-004** | **0.1651** | **0.0436** | **7.8000e-004** | **0.0444** | | **155.1920** | **155.1920** | **4.2800e-003** | **3.9600e-003** | **156.4785** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2023

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.3217 | 34.5156 | 28.0512 | 0.0621 | | 1.4245 | 1.4245 | | 1.3105 | 1.3105 | 0.0000 | 6,011.4777 | 6,011.4777 | 1.9442 | | 6,060.0836 |
| **Total** | **3.3217** | **34.5156** | **28.0512** | **0.0621** | **9.2036** | **1.4245** | **10.6281** | **3.6538** | **1.3105** | **4.9643** | **0.0000** | **6,011.4777** | **6,011.4777** | **1.9442** | | **6,060.0836** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0726 | 0.0392 | 0.5750 | 1.5200e-003 | 0.1643 | 8.5000e-004 | 0.1651 | 0.0436 | 7.8000e-004 | 0.0444 | | 155.1920 | 155.1920 | 4.2800e-003 | 3.9600e-003 | 156.4785 |
| **Total** | **0.0726** | **0.0392** | **0.5750** | **1.5200e-003** | **0.1643** | **8.5000e-004** | **0.1651** | **0.0436** | **7.8000e-004** | **0.0444** | | **155.1920** | **155.1920** | **4.2800e-003** | **3.9600e-003** | **156.4785** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Paving - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.0327** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0544 | 0.0294 | 0.4313 | 1.1400e-003 | 0.1232 | 6.4000e-004 | 0.1239 | 0.0327 | 5.8000e-004 | 0.0333 | | 116.3940 | 116.3940 | 3.2100e-003 | 2.9700e-003 | 117.3589 |
| **Total** | **0.0544** | **0.0294** | **0.4313** | **1.1400e-003** | **0.1232** | **6.4000e-004** | **0.1239** | **0.0327** | **5.8000e-004** | **0.0333** | | **116.3940** | **116.3940** | **3.2100e-003** | **2.9700e-003** | **117.3589** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Paving - 2023

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | 0.0000 | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.0327** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | **0.0000** | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0544 | 0.0294 | 0.4313 | 1.1400e-003 | 0.1232 | 6.4000e-004 | 0.1239 | 0.0327 | 5.8000e-004 | 0.0333 | | 116.3940 | 116.3940 | 3.2100e-003 | 2.9700e-003 | 117.3589 |
| **Total** | **0.0544** | **0.0294** | **0.4313** | **1.1400e-003** | **0.1232** | **6.4000e-004** | **0.1239** | **0.0327** | **5.8000e-004** | **0.0333** | | **116.3940** | **116.3940** | **3.2100e-003** | **2.9700e-003** | **117.3589** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0959 | 3.5503 | 1.1210 | 0.0169 | 0.5695 | 0.0240 | 0.5935 | 0.1640 | 0.0229 | 0.1869 | | 1,788.5339 | 1,788.5339 | 7.7400e-003 | 0.2675 | 1,868.4285 |
| Worker | 0.8892 | 0.4798 | 7.0441 | 0.0186 | 2.0126 | 0.0104 | 2.0230 | 0.5338 | 9.5500e-003 | 0.5434 | | 1,901.1020 | 1,901.1020 | 0.0524 | 0.0485 | 1,916.8615 |
| **Total** | **0.9851** | **4.0300** | **8.1650** | **0.0355** | **2.5821** | **0.0344** | **2.6165** | **0.6978** | **0.0325** | **0.7303** | | **3,689.6359** | **3,689.6359** | **0.0601** | **0.3159** | **3,785.2899** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2023

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | 0.0000 | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | **0.0000** | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0959 | 3.5503 | 1.1210 | 0.0169 | 0.5695 | 0.0240 | 0.5935 | 0.1640 | 0.0229 | 0.1869 | | 1,788.5339 | 1,788.5339 | 7.7400e-003 | 0.2675 | 1,868.4285 |
| Worker | 0.8892 | 0.4798 | 7.0441 | 0.0186 | 2.0126 | 0.0104 | 2.0230 | 0.5338 | 9.5500e-003 | 0.5434 | | 1,901.1020 | 1,901.1020 | 0.0524 | 0.0485 | 1,916.8615 |
| **Total** | **0.9851** | **4.0300** | **8.1650** | **0.0355** | **2.5821** | **0.0344** | **2.6165** | **0.6978** | **0.0325** | **0.7303** | | **3,689.6359** | **3,689.6359** | **0.0601** | **0.3159** | **3,785.2899** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2024

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4716 | 13.4438 | 16.1668 | 0.0270 | | 0.6133 | 0.6133 | | 0.5769 | 0.5769 | | 2,555.6989 | 2,555.6989 | 0.6044 | | 2,570.8077 |
| **Total** | **1.4716** | **13.4438** | **16.1668** | **0.0270** | | **0.6133** | **0.6133** | | **0.5769** | **0.5769** | | **2,555.6989** | **2,555.6989** | **0.6044** | | **2,570.8077** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0933 | 3.5530 | 1.0932 | 0.0167 | 0.5695 | 0.0242 | 0.5937 | 0.1640 | 0.0231 | 0.1871 | | 1,759.9487 | 1,759.9487 | 7.3900e-003 | 0.2631 | 1,838.5243 |
| Worker | 0.8186 | 0.4227 | 6.4966 | 0.0180 | 2.0126 | 9.8500e-003 | 2.0225 | 0.5338 | 9.0600e-003 | 0.5429 | | 1,852.9810 | 1,852.9810 | 0.0469 | 0.0448 | 1,867.5006 |
| **Total** | **0.9120** | **3.9757** | **7.5898** | **0.0346** | **2.5821** | **0.0340** | **2.6161** | **0.6978** | **0.0322** | **0.7300** | | **3,612.9297** | **3,612.9297** | **0.0543** | **0.3079** | **3,706.0249** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2024

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4716 | 13.4438 | 16.1668 | 0.0270 | | 0.6133 | 0.6133 | | 0.5769 | 0.5769 | 0.0000 | 2,555.6989 | 2,555.6989 | 0.6044 | | 2,570.8077 |
| **Total** | **1.4716** | **13.4438** | **16.1668** | **0.0270** | | **0.6133** | **0.6133** | | **0.5769** | **0.5769** | **0.0000** | **2,555.6989** | **2,555.6989** | **0.6044** | | **2,570.8077** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0933 | 3.5530 | 1.0932 | 0.0167 | 0.5695 | 0.0242 | 0.5937 | 0.1640 | 0.0231 | 0.1871 | | 1,759.9487 | 1,759.9487 | 7.3900e-003 | 0.2631 | 1,838.5243 |
| Worker | 0.8186 | 0.4227 | 6.4966 | 0.0180 | 2.0126 | 9.8500e-003 | 2.0225 | 0.5338 | 9.0600e-003 | 0.5429 | | 1,852.9810 | 1,852.9810 | 0.0469 | 0.0448 | 1,867.5006 |
| **Total** | **0.9120** | **3.9757** | **7.5898** | **0.0346** | **2.5821** | **0.0340** | **2.6161** | **0.6978** | **0.0322** | **0.7300** | | **3,612.9297** | **3,612.9297** | **0.0543** | **0.3079** | **3,706.0249** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0911 | 3.5410 | 1.0700 | 0.0164 | 0.5695 | 0.0242 | 0.5937 | 0.1640 | 0.0231 | 0.1871 | | 1,727.9016 | 1,727.9016 | 7.1000e-003 | 0.2581 | 1,804.9790 |
| Worker | 0.7578 | 0.3756 | 6.0160 | 0.0174 | 2.0126 | 9.3700e-003 | 2.0220 | 0.5338 | 8.6300e-003 | 0.5425 | | 1,807.6530 | 1,807.6530 | 0.0421 | 0.0416 | 1,821.1104 |
| **Total** | **0.8489** | **3.9166** | **7.0860** | **0.0337** | **2.5821** | **0.0335** | **2.6157** | **0.6978** | **0.0318** | **0.7296** | | **3,535.5545** | **3,535.5545** | **0.0492** | **0.2997** | **3,626.0894** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2025

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0911 | 3.5410 | 1.0700 | 0.0164 | 0.5695 | 0.0242 | 0.5937 | 0.1640 | 0.0231 | 0.1871 | | 1,727.9016 | 1,727.9016 | 7.1000e-003 | 0.2581 | 1,804.9790 |
| Worker | 0.7578 | 0.3756 | 6.0160 | 0.0174 | 2.0126 | 9.3700e-003 | 2.0220 | 0.5338 | 8.6300e-003 | 0.5425 | | 1,807.6530 | 1,807.6530 | 0.0421 | 0.0416 | 1,821.1104 |
| **Total** | **0.8489** | **3.9166** | **7.0860** | **0.0337** | **2.5821** | **0.0335** | **2.6157** | **0.6978** | **0.0318** | **0.7296** | | **3,535.5545** | **3,535.5545** | **0.0492** | **0.2997** | **3,626.0894** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2026

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0892 | 3.5219 | 1.0512 | 0.0161 | 0.5695 | 0.0241 | 0.5936 | 0.1640 | 0.0230 | 0.1870 | | 1,695.4184 | 1,695.4184 | 6.8500e-003 | 0.2530 | 1,770.9740 |
| Worker | 0.7053 | 0.3373 | 5.6478 | 0.0168 | 2.0126 | 8.9600e-003 | 2.0216 | 0.5338 | 8.2500e-003 | 0.5421 | | 1,766.3119 | 1,766.3119 | 0.0382 | 0.0390 | 1,778.8998 |
| **Total** | **0.7945** | **3.8592** | **6.6990** | **0.0329** | **2.5821** | **0.0330** | **2.6151** | **0.6978** | **0.0313** | **0.7291** | | **3,461.7303** | **3,461.7303** | **0.0450** | **0.2920** | **3,549.8738** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2026

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0892 | 3.5219 | 1.0512 | 0.0161 | 0.5695 | 0.0241 | 0.5936 | 0.1640 | 0.0230 | 0.1870 | | 1,695.4184 | 1,695.4184 | 6.8500e-003 | 0.2530 | 1,770.9740 |
| Worker | 0.7053 | 0.3373 | 5.6478 | 0.0168 | 2.0126 | 8.9600e-003 | 2.0216 | 0.5338 | 8.2500e-003 | 0.5421 | | 1,766.3119 | 1,766.3119 | 0.0382 | 0.0390 | 1,778.8998 |
| **Total** | **0.7945** | **3.8592** | **6.6990** | **0.0329** | **2.5821** | **0.0330** | **2.6151** | **0.6978** | **0.0313** | **0.7291** | | **3,461.7303** | **3,461.7303** | **0.0450** | **0.2920** | **3,549.8738** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2027

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0876 | 3.4988 | 1.0356 | 0.0157 | 0.5695 | 0.0239 | 0.5934 | 0.1640 | 0.0228 | 0.1868 | | 1,660.7133 | 1,660.7133 | 6.6200e-003 | 0.2476 | 1,734.6630 |
| Worker | 0.6583 | 0.3053 | 5.3097 | 0.0163 | 2.0126 | 8.4500e-003 | 2.0211 | 0.5338 | 7.7800e-003 | 0.5416 | | 1,727.1581 | 1,727.1581 | 0.0347 | 0.0369 | 1,739.0124 |
| **Total** | **0.7459** | **3.8041** | **6.3453** | **0.0320** | **2.5821** | **0.0323** | **2.6145** | **0.6978** | **0.0306** | **0.7285** | | **3,387.8714** | **3,387.8714** | **0.0413** | **0.2845** | **3,473.6753** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2027

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0876 | 3.4988 | 1.0356 | 0.0157 | 0.5695 | 0.0239 | 0.5934 | 0.1640 | 0.0228 | 0.1868 | | 1,660.7133 | 1,660.7133 | 6.6200e-003 | 0.2476 | 1,734.6630 |
| Worker | 0.6583 | 0.3053 | 5.3097 | 0.0163 | 2.0126 | 8.4500e-003 | 2.0211 | 0.5338 | 7.7800e-003 | 0.5416 | | 1,727.1581 | 1,727.1581 | 0.0347 | 0.0369 | 1,739.0124 |
| **Total** | **0.7459** | **3.8041** | **6.3453** | **0.0320** | **2.5821** | **0.0323** | **2.6145** | **0.6978** | **0.0306** | **0.7285** | | **3,387.8714** | **3,387.8714** | **0.0413** | **0.2845** | **3,473.6753** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2028

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0862 | 3.4817 | 1.0232 | 0.0154 | 0.5695 | 0.0237 | 0.5932 | 0.1640 | 0.0227 | 0.1867 | | 1,627.5717 | 1,627.5717 | 6.4400e-003 | 0.2424 | 1,699.9807 |
| Worker | 0.6157 | 0.2788 | 5.0307 | 0.0159 | 2.0126 | 7.9200e-003 | 2.0205 | 0.5338 | 7.2900e-003 | 0.5411 | | 1,692.4537 | 1,692.4537 | 0.0317 | 0.0351 | 1,703.6982 |
| **Total** | **0.7019** | **3.7605** | **6.0539** | **0.0313** | **2.5821** | **0.0317** | **2.6138** | **0.6978** | **0.0300** | **0.7278** | | **3,320.0254** | **3,320.0254** | **0.0381** | **0.2775** | **3,403.6790** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2028

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0862 | 3.4817 | 1.0232 | 0.0154 | 0.5695 | 0.0237 | 0.5932 | 0.1640 | 0.0227 | 0.1867 | | 1,627.5717 | 1,627.5717 | 6.4400e-003 | 0.2424 | 1,699.9807 |
| Worker | 0.6157 | 0.2788 | 5.0307 | 0.0159 | 2.0126 | 7.9200e-003 | 2.0205 | 0.5338 | 7.2900e-003 | 0.5411 | | 1,692.4537 | 1,692.4537 | 0.0317 | 0.0351 | 1,703.6982 |
| **Total** | **0.7019** | **3.7605** | **6.0539** | **0.0313** | **2.5821** | **0.0317** | **2.6138** | **0.6978** | **0.0300** | **0.7278** | | **3,320.0254** | **3,320.0254** | **0.0381** | **0.2775** | **3,403.6790** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2029

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0850 | 3.4622 | 1.0125 | 0.0151 | 0.5695 | 0.0236 | 0.5931 | 0.1640 | 0.0225 | 0.1865 | | 1,595.5510 | 1,595.5510 | 6.2800e-003 | 0.2375 | 1,666.4737 |
| Worker | 0.5756 | 0.2565 | 4.7913 | 0.0155 | 2.0126 | 7.4200e-003 | 2.0200 | 0.5338 | 6.8200e-003 | 0.5407 | | 1,661.5163 | 1,661.5163 | 0.0291 | 0.0336 | 1,672.2476 |
| **Total** | **0.6606** | **3.7187** | **5.8038** | **0.0306** | **2.5821** | **0.0310** | **2.6131** | **0.6978** | **0.0294** | **0.7272** | | **3,257.0673** | **3,257.0673** | **0.0354** | **0.2710** | **3,338.7213** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2029

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0850 | 3.4622 | 1.0125 | 0.0151 | 0.5695 | 0.0236 | 0.5931 | 0.1640 | 0.0225 | 0.1865 | | 1,595.5510 | 1,595.5510 | 6.2800e-003 | 0.2375 | 1,666.4737 |
| Worker | 0.5756 | 0.2565 | 4.7913 | 0.0155 | 2.0126 | 7.4200e-003 | 2.0200 | 0.5338 | 6.8200e-003 | 0.5407 | | 1,661.5163 | 1,661.5163 | 0.0291 | 0.0336 | 1,672.2476 |
| **Total** | **0.6606** | **3.7187** | **5.8038** | **0.0306** | **2.5821** | **0.0310** | **2.6131** | **0.6978** | **0.0294** | **0.7272** | | **3,257.0673** | **3,257.0673** | **0.0354** | **0.2710** | **3,338.7213** |

## 3.6 Architectural Coating - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1917 | 1.3030 | 1.8111 | 2.9700e-003 | | 0.0708 | 0.0708 | | 0.0708 | 0.0708 | | 281.4481 | 281.4481 | 0.0168 | | 281.8690 |
| **Total** | **7.3637** | **1.3030** | **1.8111** | **2.9700e-003** | | **0.0708** | **0.0708** | | **0.0708** | **0.0708** | | **281.4481** | **281.4481** | **0.0168** | | **281.8690** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1778 | 0.0960 | 1.4088 | 3.7200e-003 | 0.4025 | 2.0800e-003 | 0.4046 | 0.1068 | 1.9100e-003 | 0.1087 | | 380.2204 | 380.2204 | 0.0105 | 9.7000e-003 | 383.3723 |
| **Total** | **0.1778** | **0.0960** | **1.4088** | **3.7200e-003** | **0.4025** | **2.0800e-003** | **0.4046** | **0.1068** | **1.9100e-003** | **0.1087** | | **380.2204** | **380.2204** | **0.0105** | **9.7000e-003** | **383.3723** |

## 3.6 Architectural Coating - 2023

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1917 | 1.3030 | 1.8111 | 2.9700e-003 | | 0.0708 | 0.0708 | | 0.0708 | 0.0708 | 0.0000 | 281.4481 | 281.4481 | 0.0168 | | 281.8690 |
| **Total** | **7.3637** | **1.3030** | **1.8111** | **2.9700e-003** | | **0.0708** | **0.0708** | | **0.0708** | **0.0708** | **0.0000** | **281.4481** | **281.4481** | **0.0168** | | **281.8690** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1778 | 0.0960 | 1.4088 | 3.7200e-003 | 0.4025 | 2.0800e-003 | 0.4046 | 0.1068 | 1.9100e-003 | 0.1087 | | 380.2204 | 380.2204 | 0.0105 | 9.7000e-003 | 383.3723 |
| **Total** | **0.1778** | **0.0960** | **1.4088** | **3.7200e-003** | **0.4025** | **2.0800e-003** | **0.4046** | **0.1068** | **1.9100e-003** | **0.1087** | | **380.2204** | **380.2204** | **0.0105** | **9.7000e-003** | **383.3723** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2024

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1808 | 1.2188 | 1.8101 | 2.9700e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | | 281.4481 | 281.4481 | 0.0159 | | 281.8443 |
| **Total** | **7.3528** | **1.2188** | **1.8101** | **2.9700e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | | **281.4481** | **281.4481** | **0.0159** | | **281.8443** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1637 | 0.0845 | 1.2993 | 3.5900e-003 | 0.4025 | 1.9700e-003 | 0.4045 | 0.1068 | 1.8100e-003 | 0.1086 | | 370.5962 | 370.5962 | 9.3900e-003 | 8.9600e-003 | 373.5001 |
| **Total** | **0.1637** | **0.0845** | **1.2993** | **3.5900e-003** | **0.4025** | **1.9700e-003** | **0.4045** | **0.1068** | **1.8100e-003** | **0.1086** | | **370.5962** | **370.5962** | **9.3900e-003** | **8.9600e-003** | **373.5001** |

## 3.6 Architectural Coating - 2024

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1808 | 1.2188 | 1.8101 | 2.9700e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | 0.0000 | 281.4481 | 281.4481 | 0.0159 | | 281.8443 |
| **Total** | **7.3528** | **1.2188** | **1.8101** | **2.9700e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | **0.0000** | **281.4481** | **281.4481** | **0.0159** | | **281.8443** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1637 | 0.0845 | 1.2993 | 3.5900e-003 | 0.4025 | 1.9700e-003 | 0.4045 | 0.1068 | 1.8100e-003 | 0.1086 | | 370.5962 | 370.5962 | 9.3900e-003 | 8.9600e-003 | 373.5001 |
| **Total** | **0.1637** | **0.0845** | **1.2993** | **3.5900e-003** | **0.4025** | **1.9700e-003** | **0.4045** | **0.1068** | **1.8100e-003** | **0.1086** | | **370.5962** | **370.5962** | **9.3900e-003** | **8.9600e-003** | **373.5001** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **7.3429** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1516 | 0.0751 | 1.2032 | 3.4700e-003 | 0.4025 | 1.8700e-003 | 0.4044 | 0.1068 | 1.7300e-003 | 0.1085 | | 361.5306 | 361.5306 | 8.4300e-003 | 8.3200e-003 | 364.2221 |
| **Total** | **0.1516** | **0.0751** | **1.2032** | **3.4700e-003** | **0.4025** | **1.8700e-003** | **0.4044** | **0.1068** | **1.7300e-003** | **0.1085** | | **361.5306** | **361.5306** | **8.4300e-003** | **8.3200e-003** | **364.2221** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2025

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **7.3429** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1516 | 0.0751 | 1.2032 | 3.4700e-003 | 0.4025 | 1.8700e-003 | 0.4044 | 0.1068 | 1.7300e-003 | 0.1085 | | 361.5306 | 361.5306 | 8.4300e-003 | 8.3200e-003 | 364.2221 |
| **Total** | **0.1516** | **0.0751** | **1.2032** | **3.4700e-003** | **0.4025** | **1.8700e-003** | **0.4044** | **0.1068** | **1.7300e-003** | **0.1085** | | **361.5306** | **361.5306** | **8.4300e-003** | **8.3200e-003** | **364.2221** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2026

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **7.3429** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1411 | 0.0675 | 1.1296 | 3.3600e-003 | 0.4025 | 1.7900e-003 | 0.4043 | 0.1068 | 1.6500e-003 | 0.1084 | | 353.2624 | 353.2624 | 7.6300e-003 | 7.8100e-003 | 355.7800 |
| **Total** | **0.1411** | **0.0675** | **1.1296** | **3.3600e-003** | **0.4025** | **1.7900e-003** | **0.4043** | **0.1068** | **1.6500e-003** | **0.1084** | | **353.2624** | **353.2624** | **7.6300e-003** | **7.8100e-003** | **355.7800** |

## 3.6 Architectural Coating - 2026

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **7.3429** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1411 | 0.0675 | 1.1296 | 3.3600e-003 | 0.4025 | 1.7900e-003 | 0.4043 | 0.1068 | 1.6500e-003 | 0.1084 | | 353.2624 | 353.2624 | 7.6300e-003 | 7.8100e-003 | 355.7800 |
| **Total** | **0.1411** | **0.0675** | **1.1296** | **3.3600e-003** | **0.4025** | **1.7900e-003** | **0.4043** | **0.1068** | **1.6500e-003** | **0.1084** | | **353.2624** | **353.2624** | **7.6300e-003** | **7.8100e-003** | **355.7800** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2027

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **7.3429** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1317 | 0.0611 | 1.0619 | 3.2600e-003 | 0.4025 | 1.6900e-003 | 0.4042 | 0.1068 | 1.5600e-003 | 0.1083 | | 345.4316 | 345.4316 | 6.9300e-003 | 7.3700e-003 | 347.8025 |
| **Total** | **0.1317** | **0.0611** | **1.0619** | **3.2600e-003** | **0.4025** | **1.6900e-003** | **0.4042** | **0.1068** | **1.5600e-003** | **0.1083** | | **345.4316** | **345.4316** | **6.9300e-003** | **7.3700e-003** | **347.8025** |

## 3.6 Architectural Coating - 2027

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **7.3429** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1317 | 0.0611 | 1.0619 | 3.2600e-003 | 0.4025 | 1.6900e-003 | 0.4042 | 0.1068 | 1.5600e-003 | 0.1083 | | 345.4316 | 345.4316 | 6.9300e-003 | 7.3700e-003 | 347.8025 |
| **Total** | **0.1317** | **0.0611** | **1.0619** | **3.2600e-003** | **0.4025** | **1.6900e-003** | **0.4042** | **0.1068** | **1.5600e-003** | **0.1083** | | **345.4316** | **345.4316** | **6.9300e-003** | **7.3700e-003** | **347.8025** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2028

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **7.3429** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1231 | 0.0558 | 1.0061 | 3.1700e-003 | 0.4025 | 1.5800e-003 | 0.4041 | 0.1068 | 1.4600e-003 | 0.1082 | | 338.4907 | 338.4907 | 6.3300e-003 | 7.0200e-003 | 340.7397 |
| **Total** | **0.1231** | **0.0558** | **1.0061** | **3.1700e-003** | **0.4025** | **1.5800e-003** | **0.4041** | **0.1068** | **1.4600e-003** | **0.1082** | | **338.4907** | **338.4907** | **6.3300e-003** | **7.0200e-003** | **340.7397** |

## 3.6 Architectural Coating - 2028

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **7.3429** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1231 | 0.0558 | 1.0061 | 3.1700e-003 | 0.4025 | 1.5800e-003 | 0.4041 | 0.1068 | 1.4600e-003 | 0.1082 | | 338.4907 | 338.4907 | 6.3300e-003 | 7.0200e-003 | 340.7397 |
| **Total** | **0.1231** | **0.0558** | **1.0061** | **3.1700e-003** | **0.4025** | **1.5800e-003** | **0.4041** | **0.1068** | **1.4600e-003** | **0.1082** | | **338.4907** | **338.4907** | **6.3300e-003** | **7.0200e-003** | **340.7397** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2029

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **7.3429** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1151 | 0.0513 | 0.9583 | 3.0900e-003 | 0.4025 | 1.4800e-003 | 0.4040 | 0.1068 | 1.3600e-003 | 0.1081 | | 332.3033 | 332.3033 | 5.8100e-003 | 6.7100e-003 | 334.4495 |
| **Total** | **0.1151** | **0.0513** | **0.9583** | **3.0900e-003** | **0.4025** | **1.4800e-003** | **0.4040** | **0.1068** | **1.3600e-003** | **0.1081** | | **332.3033** | **332.3033** | **5.8100e-003** | **6.7100e-003** | **334.4495** |

## 3.6 Architectural Coating - 2029

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **7.3429** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1151 | 0.0513 | 0.9583 | 3.0900e-003 | 0.4025 | 1.4800e-003 | 0.4040 | 0.1068 | 1.3600e-003 | 0.1081 | | 332.3033 | 332.3033 | 5.8100e-003 | 6.7100e-003 | 334.4495 |
| **Total** | **0.1151** | **0.0513** | **0.9583** | **3.0900e-003** | **0.4025** | **1.4800e-003** | **0.4040** | **0.1068** | **1.3600e-003** | **0.1081** | | **332.3033** | **332.3033** | **5.8100e-003** | **6.7100e-003** | **334.4495** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

# 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 6.7908 | 9.3450 | 61.0012 | 0.1546 | 18.9018 | 0.1057 | 19.0075 | 5.0415 | 0.0994 | 5.1409 | | 16,947.1400 | 16,947.1400 | 0.6696 | 0.7858 | 17,198.0436 |
| Unmitigated | 6.8482 | 9.4859 | 62.0063 | 0.1576 | 19.2876 | 0.1077 | 19.3953 | 5.1444 | 0.1013 | 5.2457 | | 17,282.8970 | 17,282.8970 | 0.6796 | 0.7987 | 17,537.9109 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 5.38 | 13.52 | 15.11 | 16,940 | 16,601 |
| Single Family Housing | 3,105.76 | 3,138.66 | 2812.95 | 8,892,327 | 8,714,481 |
| Total | 3,111.14 | 3,152.18 | 2,828.06 | 8,909,267 | 8,731,082 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Single Family Housing | 10.80 | 7.30 | 7.50 | 45.60 | 19.00 | 35.40 | 86 | 11 | 3 |

## 4.4 Fleet Mix

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.552787 | 0.055429 | 0.175422 | 0.126588 | 0.020626 | 0.005781 | 0.013059 | 0.024880 | 0.000595 | 0.000297 | 0.020966 | 0.001153 | 0.002414 |
| Single Family Housing | 0.552787 | 0.055429 | 0.175422 | 0.126588 | 0.020626 | 0.005781 | 0.013059 | 0.024880 | 0.000595 | 0.000297 | 0.020966 | 0.001153 | 0.002414 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.2300 | 1.9653 | 0.8363 | 0.0125 | | 0.1589 | 0.1589 | | 0.1589 | 0.1589 | | 2,508.8633 | 2,508.8633 | 0.0481 | 0.0460 | 2,523.7723 |
| NaturalGas Unmitigated | 0.2300 | 1.9653 | 0.8363 | 0.0125 | | 0.1589 | 0.1589 | | 0.1589 | 0.1589 | | 2,508.8633 | 2,508.8633 | 0.0481 | 0.0460 | 2,523.7723 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 21325.3 | 0.2300 | 1.9653 | 0.8363 | 0.0125 | | 0.1589 | 0.1589 | | 0.1589 | 0.1589 | | 2,508.8633 | 2,508.8633 | 0.0481 | 0.0460 | 2,523.7723 |
| **Total** | | **0.2300** | **1.9653** | **0.8363** | **0.0125** | | **0.1589** | **0.1589** | | **0.1589** | **0.1589** | | **2,508.8633** | **2,508.8633** | **0.0481** | **0.0460** | **2,523.7723** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 21.3253 | 0.2300 | 1.9653 | 0.8363 | 0.0125 | | 0.1589 | 0.1589 | | 0.1589 | 0.1589 | | 2,508.8633 | 2,508.8633 | 0.0481 | 0.0460 | 2,523.7723 |
| **Total** | | **0.2300** | **1.9653** | **0.8363** | **0.0125** | | **0.1589** | **0.1589** | | **0.1589** | **0.1589** | | **2,508.8633** | **2,508.8633** | **0.0481** | **0.0460** | **2,523.7723** |

## 6.0 Area Detail

Hat Ranch Project - Agricultural Character Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Cleaning Supplies

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 51.4052 | 8.5593 | 347.2915 | 1.0820 | | 53.4487 | 53.4487 | | 53.4487 | 53.4487 | 7,836.6355 | 3,866.0827 | 11,702.7182 | 36.7325 | 0.0703 | 12,641.9653 |
| Unmitigated | 52.7325 | 8.6231 | 353.7901 | 1.0825 | | 53.4870 | 53.4870 | | 53.4870 | 53.4870 | 7,836.6355 | 3,880.7576 | 11,717.3931 | 36.7547 | 0.0703 | 12,657.1942 |

Hat Ranch Project - Agricultural Character Alternative - San Joaquin Valley Unified APCD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 3.0457 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 12.6886 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 36.1895 | 8.3110 | 326.7419 | 1.0810 | | 53.3364 | 53.3364 | | 53.3364 | 53.3364 | 7,836.6355 | 3,831.8824 | 11,668.5179 | 36.7081 | 0.0703 | 12,607.1558 |
| Landscaping | 0.8088 | 0.3121 | 27.0482 | 1.4300e-003 | | 0.1505 | 0.1505 | | 0.1505 | 0.1505 | | 48.8752 | 48.8752 | 0.0465 | | 50.0384 |
| **Total** | **52.7325** | **8.6231** | **353.7901** | **1.0825** | | **53.4869** | **53.4869** | | **53.4869** | **53.4869** | **7,836.6355** | **3,880.7576** | **11,717.3931** | **36.7547** | **0.0703** | **12,657.1942** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 3.0457 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 11.7411 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 36.1895 | 8.3110 | 326.7419 | 1.0810 | | 53.3364 | 53.3364 | | 53.3364 | 53.3364 | 7,836.6355 | 3,831.8824 | 11,668.5179 | 36.7081 | 0.0703 | 12,607.1558 |
| Landscaping | 0.4290 | 0.2483 | 20.5496 | 9.3000e-004 | | 0.1123 | 0.1123 | | 0.1123 | 0.1123 | | 34.2003 | 34.2003 | 0.0244 | | 34.8095 |
| **Total** | **51.4052** | **8.5593** | **347.2915** | **1.0820** | | **53.4487** | **53.4487** | | **53.4487** | **53.4487** | **7,836.6355** | **3,866.0827** | **11,702.7182** | **36.7325** | **0.0703** | **12,641.9653** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

Hat Ranch Project - Agricultural Character Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

# Hat Ranch Project - Agricultural Character Alternative

**San Joaquin Valley Unified APCD Air District, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| City Park | 6.90 | Acre | 6.90 | 300,564.00 | 0 |
| Single Family Housing | 329.00 | Dwelling Unit | 72.10 | 592,200.00 | 1044 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.7 | **Precipitation Freq (Days)** | 45 |
| **Climate Zone** | 2 | | | **Operational Year** | 2035 |
| **Utility Company** | Pacific Gas and Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 116.67 | **CH4 Intensity (lb/MWhr)** | 0.033 | **N2O Intensity (lb/MWhr)** | 0.004 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor adjusted per PG&E's compliance with RPS.

Land Use - Lot acrages adjusted according to site plan.

Construction Phase - Architectural coating phase timing adjusted to occur during building construction.

Vehicle Trips -

Mobile Land Use Mitigation -

Area Mitigation - All electric landscaping equipment would be used, pursuant to AB 1346
Low VOC cleaning supplies required, per SJVAPCD Rule 4663

Water Mitigation - Water conservation strategy applied to reflect compliance with MWELO.

Woodstoves -

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstructionPhase | NumDays | 110.00 | 1,550.00 |

Hat Ranch Project - Agricultural Character Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | |
|---|---|---|---|
| tblLandUse | LotAcreage | 106.82 | 72.10 |
| tblProjectCharacteristics | CO2IntensityFactor | 203.98 | 116.67 |

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2022 | 3.6953 | 38.8964 | 29.5795 | 0.0635 | 19.8049 | 1.6358 | 21.4183 | 10.1417 | 1.5049 | 11.6260 | 0.0000 | 6,153.2112 | 6,153.2112 | 1.9495 | 4.8200e-003 | 6,203.3863 |
| 2023 | 9.9782 | 34.5618 | 28.5434 | 0.0667 | 9.3679 | 1.4253 | 10.7932 | 3.6973 | 1.3113 | 5.0086 | 0.0000 | 6,658.6209 | 6,658.6209 | 1.9490 | 0.3332 | 6,775.4773 |
| 2024 | 9.7908 | 19.0670 | 25.8101 | 0.0658 | 2.9846 | 0.7103 | 3.6949 | 0.8046 | 0.6719 | 1.4765 | 0.0000 | 6,579.7799 | 6,579.7799 | 0.6903 | 0.3238 | 6,693.5332 |
| 2025 | 9.6112 | 17.9395 | 25.2327 | 0.0649 | 2.9847 | 0.6146 | 3.5992 | 0.8046 | 0.5813 | 1.3859 | 0.0000 | 6,500.6438 | 6,500.6438 | 0.6799 | 0.3145 | 6,611.3695 |
| 2026 | 9.5552 | 17.8643 | 24.8459 | 0.0640 | 2.9847 | 0.6139 | 3.5986 | 0.8046 | 0.5807 | 1.3854 | 0.0000 | 6,424.3998 | 6,424.3998 | 0.6745 | 0.3059 | 6,532.4289 |
| 2027 | 9.5047 | 17.7941 | 24.4933 | 0.0631 | 2.9847 | 0.6132 | 3.5978 | 0.8046 | 0.5800 | 1.3846 | 0.0000 | 6,348.1306 | 6,348.1306 | 0.6697 | 0.2976 | 6,453.5632 |
| 2028 | 9.4585 | 17.7380 | 24.2015 | 0.0623 | 2.9847 | 0.6124 | 3.5970 | 0.8046 | 0.5793 | 1.3839 | 0.0000 | 6,278.0698 | 6,278.0698 | 0.6656 | 0.2900 | 6,381.1375 |
| 2029 | 9.4152 | 17.6854 | 23.9491 | 0.0616 | 2.9847 | 0.6116 | 3.5962 | 0.8046 | 0.5785 | 1.3831 | 0.0000 | 6,213.0555 | 6,213.0555 | 0.6621 | 0.2830 | 6,313.9422 |
| **Maximum** | **9.9782** | **38.8964** | **29.5795** | **0.0667** | **19.8049** | **1.6358** | **21.4183** | **10.1417** | **1.5049** | **11.6260** | **0.0000** | **6,658.6209** | **6,658.6209** | **1.9495** | **0.3332** | **6,775.4773** |

Hat Ranch Project - Agricultural Character Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 2.1 Overall Construction (Maximum Daily Emission)

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2022 | 3.6953 | 38.8964 | 29.5795 | 0.0635 | 19.8049 | 1.6358 | 21.4183 | 10.1417 | 1.5049 | 11.6260 | 0.0000 | 6,153.2112 | 6,153.2112 | 1.9495 | 4.8200e-003 | 6,203.3863 |
| 2023 | 9.9782 | 34.5618 | 28.5434 | 0.0667 | 9.3679 | 1.4253 | 10.7932 | 3.6973 | 1.3113 | 5.0086 | 0.0000 | 6,658.6209 | 6,658.6209 | 1.9490 | 0.3332 | 6,775.4773 |
| 2024 | 9.7908 | 19.0670 | 25.8101 | 0.0658 | 2.9846 | 0.7103 | 3.6949 | 0.8046 | 0.6719 | 1.4765 | 0.0000 | 6,579.7799 | 6,579.7799 | 0.6903 | 0.3238 | 6,693.5332 |
| 2025 | 9.6112 | 17.9395 | 25.2327 | 0.0649 | 2.9847 | 0.6146 | 3.5992 | 0.8046 | 0.5813 | 1.3859 | 0.0000 | 6,500.6438 | 6,500.6438 | 0.6799 | 0.3145 | 6,611.3695 |
| 2026 | 9.5552 | 17.8643 | 24.8459 | 0.0640 | 2.9847 | 0.6139 | 3.5986 | 0.8046 | 0.5807 | 1.3854 | 0.0000 | 6,424.3998 | 6,424.3998 | 0.6745 | 0.3059 | 6,532.4289 |
| 2027 | 9.5047 | 17.7941 | 24.4933 | 0.0631 | 2.9847 | 0.6132 | 3.5978 | 0.8046 | 0.5800 | 1.3846 | 0.0000 | 6,348.1306 | 6,348.1306 | 0.6697 | 0.2976 | 6,453.5632 |
| 2028 | 9.4585 | 17.7380 | 24.2015 | 0.0623 | 2.9847 | 0.6124 | 3.5970 | 0.8046 | 0.5793 | 1.3839 | 0.0000 | 6,278.0698 | 6,278.0698 | 0.6656 | 0.2900 | 6,381.1375 |
| 2029 | 9.4152 | 17.6854 | 23.9491 | 0.0616 | 2.9847 | 0.6116 | 3.5962 | 0.8046 | 0.5785 | 1.3831 | 0.0000 | 6,213.0555 | 6,213.0555 | 0.6621 | 0.2830 | 6,313.9422 |
| **Maximum** | **9.9782** | **38.8964** | **29.5795** | **0.0667** | **19.8049** | **1.6358** | **21.4183** | **10.1417** | **1.5049** | **11.6260** | **0.0000** | **6,658.6209** | **6,658.6209** | **1.9495** | **0.3332** | **6,775.4773** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

Hat Ranch Project - Agricultural Character Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 52.7325 | 8.6231 | 353.7901 | 1.0825 | | 53.4870 | 53.4870 | | 53.4870 | 53.4870 | 7,836.6355 | 3,880.7576 | 11,717.3931 | 36.7547 | 0.0703 | 12,657.1942 |
| Energy | 0.2300 | 1.9653 | 0.8363 | 0.0125 | | 0.1589 | 0.1589 | | 0.1589 | 0.1589 | | 2,508.8633 | 2,508.8633 | 0.0481 | 0.0460 | 2,523.7723 |
| Mobile | 5.3577 | 10.5667 | 60.5218 | 0.1449 | 19.2876 | 0.1078 | 19.3954 | 5.1444 | 0.1014 | 5.2458 | | 15,871.0135 | 15,871.0135 | 0.7443 | 0.8440 | 16,141.1421 |
| **Total** | **58.3202** | **21.1550** | **415.1482** | **1.2400** | **19.2876** | **53.7537** | **73.0412** | **5.1444** | **53.7473** | **58.8916** | **7,836.6355** | **22,260.6344** | **30,097.2699** | **37.5470** | **0.9603** | **31,322.1086** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 51.4052 | 8.5593 | 347.2915 | 1.0820 | | 53.4487 | 53.4487 | | 53.4487 | 53.4487 | 7,836.6355 | 3,866.0827 | 11,702.7182 | 36.7325 | 0.0703 | 12,641.9653 |
| Energy | 0.2300 | 1.9653 | 0.8363 | 0.0125 | | 0.1589 | 0.1589 | | 0.1589 | 0.1589 | | 2,508.8633 | 2,508.8633 | 0.0481 | 0.0460 | 2,523.7723 |
| Mobile | 5.2983 | 10.4097 | 59.6374 | 0.1421 | 18.9018 | 0.1058 | 19.0076 | 5.0415 | 0.0995 | 5.1410 | | 15,563.7778 | 15,563.7778 | 0.7343 | 0.8305 | 15,829.6210 |
| **Total** | **56.9335** | **20.9343** | **407.7652** | **1.2366** | **18.9018** | **53.7134** | **72.6152** | **5.0415** | **53.7071** | **58.7486** | **7,836.6355** | **21,938.7238** | **29,775.3593** | **37.5149** | **0.9467** | **30,995.3585** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **2.38** | **1.04** | **1.78** | **0.27** | **2.00** | **0.07** | **0.58** | **2.00** | **0.07** | **0.24** | **0.00** | **1.45** | **1.07** | **0.09** | **1.41** | **1.04** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 5/1/2022 | 7/22/2022 | 5 | 60 | |
| 2 | Grading | Grading | 7/23/2022 | 2/24/2023 | 5 | 155 | |
| 3 | Paving | Paving | 2/25/2023 | 7/28/2023 | 5 | 110 | |
| 4 | Building Construction | Building Construction | 7/29/2023 | 7/6/2029 | 5 | 1550 | |
| 5 | Architectural Coating | Architectural Coating | 8/13/2023 | 7/20/2029 | 5 | 1550 | |

**Acres of Grading (Site Preparation Phase): 90**

**Acres of Grading (Grading Phase): 465**

**Acres of Paving: 0**

**Residential Indoor: 1,199,205; Residential Outdoor: 399,735; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| | | | | | |
|---|---|---|---|---|---|
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 245.00 | 84.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 49.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.2 Site Preparation - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 19.6570 | 0.0000 | 19.6570 | 10.1025 | 0.0000 | 10.1025 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.1701 | 33.0835 | 19.6978 | 0.0380 | | 1.6126 | 1.6126 | | 1.4836 | 1.4836 | | 3,686.0619 | 3,686.0619 | 1.1922 | | 3,715.8655 |
| **Total** | **3.1701** | **33.0835** | **19.6978** | **0.0380** | **19.6570** | **1.6126** | **21.2696** | **10.1025** | **1.4836** | **11.5860** | | **3,686.0619** | **3,686.0619** | **1.1922** | | **3,715.8655** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0634 | 0.0476 | 0.4842 | 1.2500e-003 | 0.1479 | 8.1000e-004 | 0.1487 | 0.0392 | 7.5000e-004 | 0.0400 | | 127.6206 | 127.6206 | 4.7700e-003 | 4.3400e-003 | 129.0334 |
| **Total** | **0.0634** | **0.0476** | **0.4842** | **1.2500e-003** | **0.1479** | **8.1000e-004** | **0.1487** | **0.0392** | **7.5000e-004** | **0.0400** | | **127.6206** | **127.6206** | **4.7700e-003** | **4.3400e-003** | **129.0334** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.2 Site Preparation - 2022

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 19.6570 | 0.0000 | 19.6570 | 10.1025 | 0.0000 | 10.1025 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.1701 | 33.0835 | 19.6978 | 0.0380 | | 1.6126 | 1.6126 | | 1.4836 | 1.4836 | 0.0000 | 3,686.0619 | 3,686.0619 | 1.1922 | | 3,715.8655 |
| **Total** | **3.1701** | **33.0835** | **19.6978** | **0.0380** | **19.6570** | **1.6126** | **21.2696** | **10.1025** | **1.4836** | **11.5860** | **0.0000** | **3,686.0619** | **3,686.0619** | **1.1922** | | **3,715.8655** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0634 | 0.0476 | 0.4842 | 1.2500e-003 | 0.1479 | 8.1000e-004 | 0.1487 | 0.0392 | 7.5000e-004 | 0.0400 | | 127.6206 | 127.6206 | 4.7700e-003 | 4.3400e-003 | 129.0334 |
| **Total** | **0.0634** | **0.0476** | **0.4842** | **1.2500e-003** | **0.1479** | **8.1000e-004** | **0.1487** | **0.0392** | **7.5000e-004** | **0.0400** | | **127.6206** | **127.6206** | **4.7700e-003** | **4.3400e-003** | **129.0334** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.6248 | 38.8435 | 29.0415 | 0.0621 | | 1.6349 | 1.6349 | | 1.5041 | 1.5041 | | 6,011.4105 | 6,011.4105 | 1.9442 | | 6,060.0158 |
| **Total** | **3.6248** | **38.8435** | **29.0415** | **0.0621** | **9.2036** | **1.6349** | **10.8385** | **3.6538** | **1.5041** | **5.1579** | | **6,011.4105** | **6,011.4105** | **1.9442** | | **6,060.0158** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0705 | 0.0529 | 0.5380 | 1.3900e-003 | 0.1643 | 9.0000e-004 | 0.1652 | 0.0436 | 8.3000e-004 | 0.0444 | | 141.8007 | 141.8007 | 5.3000e-003 | 4.8200e-003 | 143.3704 |
| **Total** | **0.0705** | **0.0529** | **0.5380** | **1.3900e-003** | **0.1643** | **9.0000e-004** | **0.1652** | **0.0436** | **8.3000e-004** | **0.0444** | | **141.8007** | **141.8007** | **5.3000e-003** | **4.8200e-003** | **143.3704** |

## 3.3 Grading - 2022

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.6248 | 38.8435 | 29.0415 | 0.0621 | | 1.6349 | 1.6349 | | 1.5041 | 1.5041 | 0.0000 | 6,011.4105 | 6,011.4105 | 1.9442 | | 6,060.0158 |
| **Total** | **3.6248** | **38.8435** | **29.0415** | **0.0621** | **9.2036** | **1.6349** | **10.8385** | **3.6538** | **1.5041** | **5.1579** | **0.0000** | **6,011.4105** | **6,011.4105** | **1.9442** | | **6,060.0158** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0705 | 0.0529 | 0.5380 | 1.3900e-003 | 0.1643 | 9.0000e-004 | 0.1652 | 0.0436 | 8.3000e-004 | 0.0444 | | 141.8007 | 141.8007 | 5.3000e-003 | 4.8200e-003 | 143.3704 |
| **Total** | **0.0705** | **0.0529** | **0.5380** | **1.3900e-003** | **0.1643** | **9.0000e-004** | **0.1652** | **0.0436** | **8.3000e-004** | **0.0444** | | **141.8007** | **141.8007** | **5.3000e-003** | **4.8200e-003** | **143.3704** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.3217 | 34.5156 | 28.0512 | 0.0621 | | 1.4245 | 1.4245 | | 1.3105 | 1.3105 | | 6,011.4777 | 6,011.4777 | 1.9442 | | 6,060.0836 |
| **Total** | **3.3217** | **34.5156** | **28.0512** | **0.0621** | **9.2036** | **1.4245** | **10.6281** | **3.6538** | **1.3105** | **4.9643** | | **6,011.4777** | **6,011.4777** | **1.9442** | | **6,060.0836** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0647 | 0.0462 | 0.4922 | 1.3500e-003 | 0.1643 | 8.5000e-004 | 0.1651 | 0.0436 | 7.8000e-004 | 0.0444 | | 138.0905 | 138.0905 | 4.7500e-003 | 4.4200e-003 | 139.5271 |
| **Total** | **0.0647** | **0.0462** | **0.4922** | **1.3500e-003** | **0.1643** | **8.5000e-004** | **0.1651** | **0.0436** | **7.8000e-004** | **0.0444** | | **138.0905** | **138.0905** | **4.7500e-003** | **4.4200e-003** | **139.5271** |

Hat Ranch Project - Agricultural Character Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.3 Grading - 2023

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 9.2036 | 0.0000 | 9.2036 | 3.6538 | 0.0000 | 3.6538 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.3217 | 34.5156 | 28.0512 | 0.0621 | | 1.4245 | 1.4245 | | 1.3105 | 1.3105 | 0.0000 | 6,011.4777 | 6,011.4777 | 1.9442 | | 6,060.0836 |
| **Total** | **3.3217** | **34.5156** | **28.0512** | **0.0621** | **9.2036** | **1.4245** | **10.6281** | **3.6538** | **1.3105** | **4.9643** | **0.0000** | **6,011.4777** | **6,011.4777** | **1.9442** | | **6,060.0836** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0647 | 0.0462 | 0.4922 | 1.3500e-003 | 0.1643 | 8.5000e-004 | 0.1651 | 0.0436 | 7.8000e-004 | 0.0444 | | 138.0905 | 138.0905 | 4.7500e-003 | 4.4200e-003 | 139.5271 |
| **Total** | **0.0647** | **0.0462** | **0.4922** | **1.3500e-003** | **0.1643** | **8.5000e-004** | **0.1651** | **0.0436** | **7.8000e-004** | **0.0444** | | **138.0905** | **138.0905** | **4.7500e-003** | **4.4200e-003** | **139.5271** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.4 Paving - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.0327** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0486 | 0.0347 | 0.3692 | 1.0100e-003 | 0.1232 | 6.4000e-004 | 0.1239 | 0.0327 | 5.8000e-004 | 0.0333 | | 103.5679 | 103.5679 | 3.5700e-003 | 3.3200e-003 | 104.6453 |
| **Total** | **0.0486** | **0.0347** | **0.3692** | **1.0100e-003** | **0.1232** | **6.4000e-004** | **0.1239** | **0.0327** | **5.8000e-004** | **0.0333** | | **103.5679** | **103.5679** | **3.5700e-003** | **3.3200e-003** | **104.6453** |

## 3.4 Paving - 2023

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.0327 | 10.1917 | 14.5842 | 0.0228 | | 0.5102 | 0.5102 | | 0.4694 | 0.4694 | 0.0000 | 2,207.5841 | 2,207.5841 | 0.7140 | | 2,225.4336 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.0327** | **10.1917** | **14.5842** | **0.0228** | | **0.5102** | **0.5102** | | **0.4694** | **0.4694** | **0.0000** | **2,207.5841** | **2,207.5841** | **0.7140** | | **2,225.4336** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0486 | 0.0347 | 0.3692 | 1.0100e-003 | 0.1232 | 6.4000e-004 | 0.1239 | 0.0327 | 5.8000e-004 | 0.0333 | | 103.5679 | 103.5679 | 3.5700e-003 | 3.3200e-003 | 104.6453 |
| **Total** | **0.0486** | **0.0347** | **0.3692** | **1.0100e-003** | **0.1232** | **6.4000e-004** | **0.1239** | **0.0327** | **5.8000e-004** | **0.0333** | | **103.5679** | **103.5679** | **3.5700e-003** | **3.3200e-003** | **104.6453** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0901 | 3.8035 | 1.1586 | 0.0170 | 0.5695 | 0.0241 | 0.5936 | 0.1640 | 0.0230 | 0.1870 | | 1,792.0321 | 1,792.0321 | 7.4800e-003 | 0.2682 | 1,872.1536 |
| Worker | 0.7931 | 0.5664 | 6.0294 | 0.0165 | 2.0126 | 0.0104 | 2.0230 | 0.5338 | 9.5500e-003 | 0.5434 | | 1,691.6090 | 1,691.6090 | 0.0582 | 0.0542 | 1,709.2072 |
| **Total** | **0.8832** | **4.3699** | **7.1880** | **0.0335** | **2.5821** | **0.0344** | **2.6166** | **0.6978** | **0.0326** | **0.7304** | | **3,483.6411** | **3,483.6411** | **0.0657** | **0.3224** | **3,581.3608** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2023

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | 0.0000 | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | **0.0000** | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0901 | 3.8035 | 1.1586 | 0.0170 | 0.5695 | 0.0241 | 0.5936 | 0.1640 | 0.0230 | 0.1870 | | 1,792.0321 | 1,792.0321 | 7.4800e-003 | 0.2682 | 1,872.1536 |
| Worker | 0.7931 | 0.5664 | 6.0294 | 0.0165 | 2.0126 | 0.0104 | 2.0230 | 0.5338 | 9.5500e-003 | 0.5434 | | 1,691.6090 | 1,691.6090 | 0.0582 | 0.0542 | 1,709.2072 |
| **Total** | **0.8832** | **4.3699** | **7.1880** | **0.0335** | **2.5821** | **0.0344** | **2.6166** | **0.6978** | **0.0326** | **0.7304** | | **3,483.6411** | **3,483.6411** | **0.0657** | **0.3224** | **3,581.3608** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2024

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4716 | 13.4438 | 16.1668 | 0.0270 | | 0.6133 | 0.6133 | | 0.5769 | 0.5769 | | 2,555.6989 | 2,555.6989 | 0.6044 | | 2,570.8077 |
| **Total** | **1.4716** | **13.4438** | **16.1668** | **0.0270** | | **0.6133** | **0.6133** | | **0.5769** | **0.5769** | | **2,555.6989** | **2,555.6989** | **0.6044** | | **2,570.8077** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0876 | 3.8059 | 1.1308 | 0.0167 | 0.5695 | 0.0243 | 0.5938 | 0.1640 | 0.0232 | 0.1872 | | 1,763.4091 | 1,763.4091 | 7.1300e-003 | 0.2638 | 1,842.2028 |
| Worker | 0.7324 | 0.4988 | 5.5853 | 0.0160 | 2.0126 | 9.8500e-003 | 2.0225 | 0.5338 | 9.0600e-003 | 0.5429 | | 1,649.3532 | 1,649.3532 | 0.0525 | 0.0500 | 1,665.5654 |
| **Total** | **0.8200** | **4.3047** | **6.7161** | **0.0327** | **2.5821** | **0.0341** | **2.6162** | **0.6978** | **0.0323** | **0.7301** | | **3,412.7623** | **3,412.7623** | **0.0596** | **0.3138** | **3,507.7682** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2024

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4716 | 13.4438 | 16.1668 | 0.0270 | | 0.6133 | 0.6133 | | 0.5769 | 0.5769 | 0.0000 | 2,555.6989 | 2,555.6989 | 0.6044 | | 2,570.8077 |
| **Total** | **1.4716** | **13.4438** | **16.1668** | **0.0270** | | **0.6133** | **0.6133** | | **0.5769** | **0.5769** | **0.0000** | **2,555.6989** | **2,555.6989** | **0.6044** | | **2,570.8077** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0876 | 3.8059 | 1.1308 | 0.0167 | 0.5695 | 0.0243 | 0.5938 | 0.1640 | 0.0232 | 0.1872 | | 1,763.4091 | 1,763.4091 | 7.1300e-003 | 0.2638 | 1,842.2028 |
| Worker | 0.7324 | 0.4988 | 5.5853 | 0.0160 | 2.0126 | 9.8500e-003 | 2.0225 | 0.5338 | 9.0600e-003 | 0.5429 | | 1,649.3532 | 1,649.3532 | 0.0525 | 0.0500 | 1,665.5654 |
| **Total** | **0.8200** | **4.3047** | **6.7161** | **0.0327** | **2.5821** | **0.0341** | **2.6162** | **0.6978** | **0.0323** | **0.7301** | | **3,412.7623** | **3,412.7623** | **0.0596** | **0.3138** | **3,507.7682** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0854 | 3.7928 | 1.1074 | 0.0164 | 0.5695 | 0.0242 | 0.5937 | 0.1640 | 0.0232 | 0.1872 | | 1,731.3123 | 1,731.3123 | 6.8400e-003 | 0.2588 | 1,808.6002 |
| Worker | 0.6796 | 0.4430 | 5.1930 | 0.0155 | 2.0126 | 9.3700e-003 | 2.0220 | 0.5338 | 8.6300e-003 | 0.5425 | | 1,609.5076 | 1,609.5076 | 0.0473 | 0.0465 | 1,624.5328 |
| **Total** | **0.7650** | **4.2357** | **6.3003** | **0.0318** | **2.5821** | **0.0336** | **2.6157** | **0.6978** | **0.0318** | **0.7297** | | **3,340.8199** | **3,340.8199** | **0.0542** | **0.3052** | **3,433.1330** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2025

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0854 | 3.7928 | 1.1074 | 0.0164 | 0.5695 | 0.0242 | 0.5937 | 0.1640 | 0.0232 | 0.1872 | | 1,731.3123 | 1,731.3123 | 6.8400e-003 | 0.2588 | 1,808.6002 |
| Worker | 0.6796 | 0.4430 | 5.1930 | 0.0155 | 2.0126 | 9.3700e-003 | 2.0220 | 0.5338 | 8.6300e-003 | 0.5425 | | 1,609.5076 | 1,609.5076 | 0.0473 | 0.0465 | 1,624.5328 |
| **Total** | **0.7650** | **4.2357** | **6.3003** | **0.0318** | **2.5821** | **0.0336** | **2.6157** | **0.6978** | **0.0318** | **0.7297** | | **3,340.8199** | **3,340.8199** | **0.0542** | **0.3052** | **3,433.1330** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2026

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0835 | 3.7720 | 1.0882 | 0.0161 | 0.5695 | 0.0241 | 0.5936 | 0.1640 | 0.0231 | 0.1871 | | 1,698.7743 | 1,698.7743 | 6.6000e-003 | 0.2537 | 1,774.5337 |
| Worker | 0.6345 | 0.3976 | 4.8866 | 0.0150 | 2.0126 | 8.9600e-003 | 2.0216 | 0.5338 | 8.2500e-003 | 0.5421 | | 1,573.0859 | 1,573.0859 | 0.0430 | 0.0436 | 1,587.1377 |
| **Total** | **0.7180** | **4.1696** | **5.9748** | **0.0311** | **2.5821** | **0.0331** | **2.6152** | **0.6978** | **0.0313** | **0.7292** | | **3,271.8602** | **3,271.8602** | **0.0496** | **0.2972** | **3,361.6714** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2026

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0835 | 3.7720 | 1.0882 | 0.0161 | 0.5695 | 0.0241 | 0.5936 | 0.1640 | 0.0231 | 0.1871 | | 1,698.7743 | 1,698.7743 | 6.6000e-003 | 0.2537 | 1,774.5337 |
| Worker | 0.6345 | 0.3976 | 4.8866 | 0.0150 | 2.0126 | 8.9600e-003 | 2.0216 | 0.5338 | 8.2500e-003 | 0.5421 | | 1,573.0859 | 1,573.0859 | 0.0430 | 0.0436 | 1,587.1377 |
| **Total** | **0.7180** | **4.1696** | **5.9748** | **0.0311** | **2.5821** | **0.0331** | **2.6152** | **0.6978** | **0.0313** | **0.7292** | | **3,271.8602** | **3,271.8602** | **0.0496** | **0.2972** | **3,361.6714** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2027

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0819 | 3.7472 | 1.0723 | 0.0158 | 0.5695 | 0.0240 | 0.5935 | 0.1640 | 0.0229 | 0.1869 | | 1,664.0149 | 1,664.0149 | 6.3800e-003 | 0.2483 | 1,738.1625 |
| Worker | 0.5937 | 0.3598 | 4.6060 | 0.0145 | 2.0126 | 8.4500e-003 | 2.0211 | 0.5338 | 7.7800e-003 | 0.5416 | | 1,538.4944 | 1,538.4944 | 0.0392 | 0.0411 | 1,551.7256 |
| **Total** | **0.6756** | **4.1070** | **5.6783** | **0.0303** | **2.5821** | **0.0324** | **2.6145** | **0.6978** | **0.0307** | **0.7285** | | **3,202.5093** | **3,202.5093** | **0.0456** | **0.2894** | **3,289.8881** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2027

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0819 | 3.7472 | 1.0723 | 0.0158 | 0.5695 | 0.0240 | 0.5935 | 0.1640 | 0.0229 | 0.1869 | | 1,664.0149 | 1,664.0149 | 6.3800e-003 | 0.2483 | 1,738.1625 |
| Worker | 0.5937 | 0.3598 | 4.6060 | 0.0145 | 2.0126 | 8.4500e-003 | 2.0211 | 0.5338 | 7.7800e-003 | 0.5416 | | 1,538.4944 | 1,538.4944 | 0.0392 | 0.0411 | 1,551.7256 |
| **Total** | **0.6756** | **4.1070** | **5.6783** | **0.0303** | **2.5821** | **0.0324** | **2.6145** | **0.6978** | **0.0307** | **0.7285** | | **3,202.5093** | **3,202.5093** | **0.0456** | **0.2894** | **3,289.8881** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2028

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0806 | 3.7287 | 1.0597 | 0.0154 | 0.5695 | 0.0238 | 0.5933 | 0.1640 | 0.0228 | 0.1868 | | 1,630.8177 | 1,630.8177 | 6.2000e-003 | 0.2431 | 1,703.4195 |
| Worker | 0.5564 | 0.3284 | 4.3733 | 0.0141 | 2.0126 | 7.9200e-003 | 2.0205 | 0.5338 | 7.2900e-003 | 0.5411 | | 1,507.7748 | 1,507.7748 | 0.0360 | 0.0391 | 1,520.3234 |
| **Total** | **0.6369** | **4.0571** | **5.4330** | **0.0296** | **2.5821** | **0.0317** | **2.6138** | **0.6978** | **0.0301** | **0.7279** | | **3,138.5924** | **3,138.5924** | **0.0422** | **0.2822** | **3,223.7429** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2028

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0806 | 3.7287 | 1.0597 | 0.0154 | 0.5695 | 0.0238 | 0.5933 | 0.1640 | 0.0228 | 0.1868 | | 1,630.8177 | 1,630.8177 | 6.2000e-003 | 0.2431 | 1,703.4195 |
| Worker | 0.5564 | 0.3284 | 4.3733 | 0.0141 | 2.0126 | 7.9200e-003 | 2.0205 | 0.5338 | 7.2900e-003 | 0.5411 | | 1,507.7748 | 1,507.7748 | 0.0360 | 0.0391 | 1,520.3234 |
| **Total** | **0.6369** | **4.0571** | **5.4330** | **0.0296** | **2.5821** | **0.0317** | **2.6138** | **0.6978** | **0.0301** | **0.7279** | | **3,138.5924** | **3,138.5924** | **0.0422** | **0.2822** | **3,223.7429** |

Hat Ranch Project - Agricultural Character Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2029

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0794 | 3.7078 | 1.0488 | 0.0151 | 0.5695 | 0.0236 | 0.5931 | 0.1640 | 0.0226 | 0.1866 | | 1,598.7406 | 1,598.7406 | 6.0400e-003 | 0.2381 | 1,669.8515 |
| Worker | 0.5213 | 0.3020 | 4.1721 | 0.0138 | 2.0126 | 7.4200e-003 | 2.0200 | 0.5338 | 6.8200e-003 | 0.5407 | | 1,480.3271 | 1,480.3271 | 0.0331 | 0.0374 | 1,492.3007 |
| **Total** | **0.6007** | **4.0098** | **5.2209** | **0.0289** | **2.5821** | **0.0310** | **2.6132** | **0.6978** | **0.0294** | **0.7272** | | **3,079.0677** | **3,079.0677** | **0.0391** | **0.2755** | **3,162.1522** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.5 Building Construction - 2029

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0794 | 3.7078 | 1.0488 | 0.0151 | 0.5695 | 0.0236 | 0.5931 | 0.1640 | 0.0226 | 0.1866 | | 1,598.7406 | 1,598.7406 | 6.0400e-003 | 0.2381 | 1,669.8515 |
| Worker | 0.5213 | 0.3020 | 4.1721 | 0.0138 | 2.0126 | 7.4200e-003 | 2.0200 | 0.5338 | 6.8200e-003 | 0.5407 | | 1,480.3271 | 1,480.3271 | 0.0331 | 0.0374 | 1,492.3007 |
| **Total** | **0.6007** | **4.0098** | **5.2209** | **0.0289** | **2.5821** | **0.0310** | **2.6132** | **0.6978** | **0.0294** | **0.7272** | | **3,079.0677** | **3,079.0677** | **0.0391** | **0.2755** | **3,162.1522** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2023

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1917 | 1.3030 | 1.8111 | 2.9700e-003 | | 0.0708 | 0.0708 | | 0.0708 | 0.0708 | | 281.4481 | 281.4481 | 0.0168 | | 281.8690 |
| **Total** | **7.3637** | **1.3030** | **1.8111** | **2.9700e-003** | | **0.0708** | **0.0708** | | **0.0708** | **0.0708** | | **281.4481** | **281.4481** | **0.0168** | | **281.8690** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1586 | 0.1133 | 1.2059 | 3.3100e-003 | 0.4025 | 2.0800e-003 | 0.4046 | 0.1068 | 1.9100e-003 | 0.1087 | | 338.3218 | 338.3218 | 0.0117 | 0.0108 | 341.8415 |
| **Total** | **0.1586** | **0.1133** | **1.2059** | **3.3100e-003** | **0.4025** | **2.0800e-003** | **0.4046** | **0.1068** | **1.9100e-003** | **0.1087** | | **338.3218** | **338.3218** | **0.0117** | **0.0108** | **341.8415** |

## 3.6 Architectural Coating - 2023

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1917 | 1.3030 | 1.8111 | 2.9700e-003 | | 0.0708 | 0.0708 | | 0.0708 | 0.0708 | 0.0000 | 281.4481 | 281.4481 | 0.0168 | | 281.8690 |
| **Total** | **7.3637** | **1.3030** | **1.8111** | **2.9700e-003** | | **0.0708** | **0.0708** | | **0.0708** | **0.0708** | **0.0000** | **281.4481** | **281.4481** | **0.0168** | | **281.8690** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1586 | 0.1133 | 1.2059 | 3.3100e-003 | 0.4025 | 2.0800e-003 | 0.4046 | 0.1068 | 1.9100e-003 | 0.1087 | | 338.3218 | 338.3218 | 0.0117 | 0.0108 | 341.8415 |
| **Total** | **0.1586** | **0.1133** | **1.2059** | **3.3100e-003** | **0.4025** | **2.0800e-003** | **0.4046** | **0.1068** | **1.9100e-003** | **0.1087** | | **338.3218** | **338.3218** | **0.0117** | **0.0108** | **341.8415** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2024

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1808 | 1.2188 | 1.8101 | 2.9700e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | | 281.4481 | 281.4481 | 0.0159 | | 281.8443 |
| **Total** | **7.3528** | **1.2188** | **1.8101** | **2.9700e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | | **281.4481** | **281.4481** | **0.0159** | | **281.8443** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1465 | 0.0998 | 1.1171 | 3.2000e-003 | 0.4025 | 1.9700e-003 | 0.4045 | 0.1068 | 1.8100e-003 | 0.1086 | | 329.8706 | 329.8706 | 0.0105 | 0.0100 | 333.1131 |
| **Total** | **0.1465** | **0.0998** | **1.1171** | **3.2000e-003** | **0.4025** | **1.9700e-003** | **0.4045** | **0.1068** | **1.8100e-003** | **0.1086** | | **329.8706** | **329.8706** | **0.0105** | **0.0100** | **333.1131** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2024

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1808 | 1.2188 | 1.8101 | 2.9700e-003 | | 0.0609 | 0.0609 | | 0.0609 | 0.0609 | 0.0000 | 281.4481 | 281.4481 | 0.0159 | | 281.8443 |
| **Total** | **7.3528** | **1.2188** | **1.8101** | **2.9700e-003** | | **0.0609** | **0.0609** | | **0.0609** | **0.0609** | **0.0000** | **281.4481** | **281.4481** | **0.0159** | | **281.8443** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1465 | 0.0998 | 1.1171 | 3.2000e-003 | 0.4025 | 1.9700e-003 | 0.4045 | 0.1068 | 1.8100e-003 | 0.1086 | | 329.8706 | 329.8706 | 0.0105 | 0.0100 | 333.1131 |
| **Total** | **0.1465** | **0.0998** | **1.1171** | **3.2000e-003** | **0.4025** | **1.9700e-003** | **0.4045** | **0.1068** | **1.8100e-003** | **0.1086** | | **329.8706** | **329.8706** | **0.0105** | **0.0100** | **333.1131** |

## 3.6 Architectural Coating - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **7.3429** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1359 | 0.0886 | 1.0386 | 3.0900e-003 | 0.4025 | 1.8700e-003 | 0.4044 | 0.1068 | 1.7300e-003 | 0.1085 | | 321.9015 | 321.9015 | 9.4700e-003 | 9.2900e-003 | 324.9066 |
| **Total** | **0.1359** | **0.0886** | **1.0386** | **3.0900e-003** | **0.4025** | **1.8700e-003** | **0.4044** | **0.1068** | **1.7300e-003** | **0.1085** | | **321.9015** | **321.9015** | **9.4700e-003** | **9.2900e-003** | **324.9066** |

Hat Ranch Project - Agricultural Character Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2025

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **7.3429** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1359 | 0.0886 | 1.0386 | 3.0900e-003 | 0.4025 | 1.8700e-003 | 0.4044 | 0.1068 | 1.7300e-003 | 0.1085 | | 321.9015 | 321.9015 | 9.4700e-003 | 9.2900e-003 | 324.9066 |
| **Total** | **0.1359** | **0.0886** | **1.0386** | **3.0900e-003** | **0.4025** | **1.8700e-003** | **0.4044** | **0.1068** | **1.7300e-003** | **0.1085** | | **321.9015** | **321.9015** | **9.4700e-003** | **9.2900e-003** | **324.9066** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2026

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **7.3429** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1269 | 0.0795 | 0.9773 | 3.0000e-003 | 0.4025 | 1.7900e-003 | 0.4043 | 0.1068 | 1.6500e-003 | 0.1084 | | 314.6172 | 314.6172 | 8.6000e-003 | 8.7100e-003 | 317.4275 |
| **Total** | **0.1269** | **0.0795** | **0.9773** | **3.0000e-003** | **0.4025** | **1.7900e-003** | **0.4043** | **0.1068** | **1.6500e-003** | **0.1084** | | **314.6172** | **314.6172** | **8.6000e-003** | **8.7100e-003** | **317.4275** |

## 3.6 Architectural Coating - 2026

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **7.3429** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1269 | 0.0795 | 0.9773 | 3.0000e-003 | 0.4025 | 1.7900e-003 | 0.4043 | 0.1068 | 1.6500e-003 | 0.1084 | | 314.6172 | 314.6172 | 8.6000e-003 | 8.7100e-003 | 317.4275 |
| **Total** | **0.1269** | **0.0795** | **0.9773** | **3.0000e-003** | **0.4025** | **1.7900e-003** | **0.4043** | **0.1068** | **1.6500e-003** | **0.1084** | | **314.6172** | **314.6172** | **8.6000e-003** | **8.7100e-003** | **317.4275** |

## 3.6 Architectural Coating - 2027

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **7.3429** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1187 | 0.0720 | 0.9212 | 2.9100e-003 | 0.4025 | 1.6900e-003 | 0.4042 | 0.1068 | 1.5600e-003 | 0.1083 | | 307.6989 | 307.6989 | 7.8400e-003 | 8.2200e-003 | 310.3451 |
| **Total** | **0.1187** | **0.0720** | **0.9212** | **2.9100e-003** | **0.4025** | **1.6900e-003** | **0.4042** | **0.1068** | **1.5600e-003** | **0.1083** | | **307.6989** | **307.6989** | **7.8400e-003** | **8.2200e-003** | **310.3451** |

## 3.6 Architectural Coating - 2027

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **7.3429** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1187 | 0.0720 | 0.9212 | 2.9100e-003 | 0.4025 | 1.6900e-003 | 0.4042 | 0.1068 | 1.5600e-003 | 0.1083 | | 307.6989 | 307.6989 | 7.8400e-003 | 8.2200e-003 | 310.3451 |
| **Total** | **0.1187** | **0.0720** | **0.9212** | **2.9100e-003** | **0.4025** | **1.6900e-003** | **0.4042** | **0.1068** | **1.5600e-003** | **0.1083** | | **307.6989** | **307.6989** | **7.8400e-003** | **8.2200e-003** | **310.3451** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 3.6 Architectural Coating - 2028

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **7.3429** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1113 | 0.0657 | 0.8747 | 2.8300e-003 | 0.4025 | 1.5800e-003 | 0.4041 | 0.1068 | 1.4600e-003 | 0.1082 | | 301.5550 | 301.5550 | 7.1900e-003 | 7.8200e-003 | 304.0647 |
| **Total** | **0.1113** | **0.0657** | **0.8747** | **2.8300e-003** | **0.4025** | **1.5800e-003** | **0.4041** | **0.1068** | **1.4600e-003** | **0.1082** | | **301.5550** | **301.5550** | **7.1900e-003** | **7.8200e-003** | **304.0647** |

## 3.6 Architectural Coating - 2028

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **7.3429** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1113 | 0.0657 | 0.8747 | 2.8300e-003 | 0.4025 | 1.5800e-003 | 0.4041 | 0.1068 | 1.4600e-003 | 0.1082 | | 301.5550 | 301.5550 | 7.1900e-003 | 7.8200e-003 | 304.0647 |
| **Total** | **0.1113** | **0.0657** | **0.8747** | **2.8300e-003** | **0.4025** | **1.5800e-003** | **0.4041** | **0.1068** | **1.4600e-003** | **0.1082** | | **301.5550** | **301.5550** | **7.1900e-003** | **7.8200e-003** | **304.0647** |

## 3.6 Architectural Coating - 2029

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **7.3429** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1043 | 0.0604 | 0.8344 | 2.7600e-003 | 0.4025 | 1.4800e-003 | 0.4040 | 0.1068 | 1.3600e-003 | 0.1081 | | 296.0654 | 296.0654 | 6.6200e-003 | 7.4800e-003 | 298.4601 |
| **Total** | **0.1043** | **0.0604** | **0.8344** | **2.7600e-003** | **0.4025** | **1.4800e-003** | **0.4040** | **0.1068** | **1.3600e-003** | **0.1081** | | **296.0654** | **296.0654** | **6.6200e-003** | **7.4800e-003** | **298.4601** |

## 3.6 Architectural Coating - 2029

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 7.1720 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **7.3429** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.1043 | 0.0604 | 0.8344 | 2.7600e-003 | 0.4025 | 1.4800e-003 | 0.4040 | 0.1068 | 1.3600e-003 | 0.1081 | | 296.0654 | 296.0654 | 6.6200e-003 | 7.4800e-003 | 298.4601 |
| **Total** | **0.1043** | **0.0604** | **0.8344** | **2.7600e-003** | **0.4025** | **1.4800e-003** | **0.4040** | **0.1068** | **1.3600e-003** | **0.1081** | | **296.0654** | **296.0654** | **6.6200e-003** | **7.4800e-003** | **298.4601** |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

# 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 5.2983 | 10.4097 | 59.6374 | 0.1421 | 18.9018 | 0.1058 | 19.0076 | 5.0415 | 0.0995 | 5.1410 | | 15,563.7778 | 15,563.7778 | 0.7343 | 0.8305 | 15,829.6210 |
| Unmitigated | 5.3577 | 10.5667 | 60.5218 | 0.1449 | 19.2876 | 0.1078 | 19.3954 | 5.1444 | 0.1014 | 5.2458 | | 15,871.0135 | 15,871.0135 | 0.7443 | 0.8440 | 16,141.1421 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 5.38 | 13.52 | 15.11 | 16,940 | 16,601 |
| Single Family Housing | 3,105.76 | 3,138.66 | 2812.95 | 8,892,327 | 8,714,481 |
| Total | 3,111.14 | 3,152.18 | 2,828.06 | 8,909,267 | 8,731,082 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Single Family Housing | 10.80 | 7.30 | 7.50 | 45.60 | 19.00 | 35.40 | 86 | 11 | 3 |

## 4.4 Fleet Mix

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.552787 | 0.055429 | 0.175422 | 0.126588 | 0.020626 | 0.005781 | 0.013059 | 0.024880 | 0.000595 | 0.000297 | 0.020966 | 0.001153 | 0.002414 |
| Single Family Housing | 0.552787 | 0.055429 | 0.175422 | 0.126588 | 0.020626 | 0.005781 | 0.013059 | 0.024880 | 0.000595 | 0.000297 | 0.020966 | 0.001153 | 0.002414 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.2300 | 1.9653 | 0.8363 | 0.0125 | | 0.1589 | 0.1589 | | 0.1589 | 0.1589 | | 2,508.8633 | 2,508.8633 | 0.0481 | 0.0460 | 2,523.7723 |
| NaturalGas Unmitigated | 0.2300 | 1.9653 | 0.8363 | 0.0125 | | 0.1589 | 0.1589 | | 0.1589 | 0.1589 | | 2,508.8633 | 2,508.8633 | 0.0481 | 0.0460 | 2,523.7723 |

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 21325.3 | 0.2300 | 1.9653 | 0.8363 | 0.0125 | | 0.1589 | 0.1589 | | 0.1589 | 0.1589 | | 2,508.8633 | 2,508.8633 | 0.0481 | 0.0460 | 2,523.7723 |
| **Total** | | **0.2300** | **1.9653** | **0.8363** | **0.0125** | | **0.1589** | **0.1589** | | **0.1589** | **0.1589** | | **2,508.8633** | **2,508.8633** | **0.0481** | **0.0460** | **2,523.7723** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 21.3253 | 0.2300 | 1.9653 | 0.8363 | 0.0125 | | 0.1589 | 0.1589 | | 0.1589 | 0.1589 | | 2,508.8633 | 2,508.8633 | 0.0481 | 0.0460 | 2,523.7723 |
| **Total** | | **0.2300** | **1.9653** | **0.8363** | **0.0125** | | **0.1589** | **0.1589** | | **0.1589** | **0.1589** | | **2,508.8633** | **2,508.8633** | **0.0481** | **0.0460** | **2,523.7723** |

## 6.0 Area Detail

Hat Ranch Project - Agricultural Character Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Cleaning Supplies

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 51.4052 | 8.5593 | 347.2915 | 1.0820 | | 53.4487 | 53.4487 | | 53.4487 | 53.4487 | 7,836.6355 | 3,866.0827 | 11,702.7182 | 36.7325 | 0.0703 | 12,641.9653 |
| Unmitigated | 52.7325 | 8.6231 | 353.7901 | 1.0825 | | 53.4870 | 53.4870 | | 53.4870 | 53.4870 | 7,836.6355 | 3,880.7576 | 11,717.3931 | 36.7547 | 0.0703 | 12,657.1942 |

Hat Ranch Project - Agricultural Character Alternative - San Joaquin Valley Unified APCD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 3.0457 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 12.6886 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 36.1895 | 8.3110 | 326.7419 | 1.0810 | | 53.3364 | 53.3364 | | 53.3364 | 53.3364 | 7,836.6355 | 3,831.8824 | 11,668.5179 | 36.7081 | 0.0703 | 12,607.1558 |
| Landscaping | 0.8088 | 0.3121 | 27.0482 | 1.4300e-003 | | 0.1505 | 0.1505 | | 0.1505 | 0.1505 | | 48.8752 | 48.8752 | 0.0465 | | 50.0384 |
| **Total** | **52.7325** | **8.6231** | **353.7901** | **1.0825** | | **53.4869** | **53.4869** | | **53.4869** | **53.4869** | **7,836.6355** | **3,880.7576** | **11,717.3931** | **36.7547** | **0.0703** | **12,657.1942** |

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 3.0457 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 11.7411 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 36.1895 | 8.3110 | 326.7419 | 1.0810 | | 53.3364 | 53.3364 | | 53.3364 | 53.3364 | 7,836.6355 | 3,831.8824 | 11,668.5179 | 36.7081 | 0.0703 | 12,607.1558 |
| Landscaping | 0.4290 | 0.2483 | 20.5496 | 9.3000e-004 | | 0.1123 | 0.1123 | | 0.1123 | 0.1123 | | 34.2003 | 34.2003 | 0.0244 | | 34.8095 |
| **Total** | **51.4052** | **8.5593** | **347.2915** | **1.0820** | | **53.4487** | **53.4487** | | **53.4487** | **53.4487** | **7,836.6355** | **3,866.0827** | **11,702.7182** | **36.7325** | **0.0703** | **12,641.9653** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# APPENDIX D

MONK & ASSOCIATES
**Environmental Consultants**

# BIOLOGICAL RESOURCE ANALYSIS
# HAT RANCH PROPERTY
# CITY OF MANTECA, CALIFORNIA

**December 1, 2020**

**Prepared for**

Raney Planning & Management
1401 Halyard Drive, Suite 120
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Attention: Mr. Rod Stinson

**Prepared by**

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## FIGURES
(At Back of Report)

Figure 1. Regional map of the Hat Ranch Project Site.

Figure 2. Hat Ranch Project Site Location.

Figure 3. Aerial photograph of the Hat Ranch Project Site.

Figure 4. Closest Known Records for Special-Status Species Within 5 Miles of the Hat Ranch Project Site.

## TABLES
(At Back of Report)

Table 1. Plant Species Observed on the Hat Ranch Project Site.

Table 2. Wildlife Species Observed on the Hat Ranch Project Site.

Table 3. Special-Status Plant Species Known to Occur in the Vicinity of the Hat Ranch Project Site.

Table 4 Special-Status Wildlife Species Known to Occur in the Vicinity of the Hat Ranch Project Site.

# 1. INTRODUCTION

Monk & Associates, Inc. (M&A) has prepared this biological resource analysis for the proposed Hat Ranch development site (herein referred to as the project site) located in the City of Manteca, California (Figures 1 and 2). The purpose of our analysis is to provide a description of existing biological resources on the project site and to identify potentially significant impacts that could occur to sensitive biological resources from the construction of single-family residential lots.

Biological resources include common plant and animal species, and special-status plants and animals as designated by the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (the CDFW), National Marine Fisheries Service (NMFS), and other resource organizations including the California Native Plant Society. Biological resources also include waters of the United States and State, as regulated by the U.S. Army Corps of Engineers (Corps), California Regional Water Quality Control Board (RWQCB), and the CDFW. It is important to note that our analysis includes an assessment of the potential for impacts to regulated waters but does not provide the level of detail required for a formal delineation of waters suitable for submittal to the Corps, the regulatory agency that defines "waters of the U.S."

This biological resources analysis also provides mitigation measures for "potentially significant" and "significant" impacts that could occur to biological resources. Whenever possible, upon implementation, the mitigation measures would reduce impacts to levels considered less than significant pursuant to the California Environmental Quality Act (CEQA). Accordingly, this report is suitable for review and inclusion in any review being conducted by the City of Manteca for the proposed project pursuant to the CEQA.

# 2. PROPERTY LOCATION AND SETTING

The approximately 184-acre project site is located in California's Central Valley in San Joaquin County. It is located within the City of Manteca at 9701 Sedan Avenue which is south of Woodward Avenue between Manteca and Austin Roads (Figures 2 and 3). Pillsbury Road bisects the project site; this portion of the road, however, is currently unpaved. The project site is located in an agricultural area that is transforming into residential neighborhoods; a housing development (Pillsbury Estates) sits immediately to the north of the western portion of the project site. Almond orchards, berry farms and vineyards border all other sides of the project site. An existing mansion (very large residence) that is approximately 20,000 square feet in size is present on the property. This residence is bordered by landscape vegetation. The remainder of the project site is a vineyard (i.e., planted with grapes).

## 2.1 Assessor's Parcel Numbers (APNs)

The project site is made up of three parcels. Project site parcels to be developed to the west of Pillsbury Road are APNs 226-120-10 and -11. The parcel to be developed to the east of Pillsbury Road is APN 226-140-04.

## 3. PROJECT COMPONENTS

The proposed project would be a master planned residential community of up to 740 single-family residences and half-plex units, two neighborhood parks, an elementary/middle school, and associated circulation improvements located on approximately 184.4 acres of land in unincorporated San Joaquin County and within the City of Manteca's Sphere of Influence. The proposed project would require annexation to the City of Manteca, Prezoning, and a General Plan Amendment (GPA). The proposed project would also require two Vesting Tentative Maps (VTM), Development Agreement approval, and Design Review for the proposed half-plex units.

The site consists of three parcels and is currently designated Urban Reserve-Low Density Family Residential (UR-LDR), Open Space-Park (OS-P), and Commercial Mixed Use (CMU) by the City of Manteca General Plan. The San Joaquin County General Plan designates the site as Agriculture-Urban Reserve (A/UR). Currently, the site is planted with vineyards and contains a large barn, an office structure, a tree-lined driveway, and a 20,000-square-foot (sf) residential mansion.

## 4. ANALYSIS METHODS

Prior to preparing this biological resource analysis report, M&A researched the most recent version of the Department's Natural Diversity Database, RareFind 5 application (CNDDB 2020) for historic and recent records of special-status plant and animal species (that is, threatened, endangered, rare) known to occur in the region of the project site. M&A also searched the 2020 electronic version of the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Plants of California* (CNPS 2001) for records of special-status plants known in the region of the project site. All special-status species records were compiled in tables. M&A examined all known record locations for special-status species to determine if special-status species could occur on the project site or within an area of effect.

M&A biologists Mr. Zach Stratton and Ms. Monica Mathews conducted a general survey of the project site on September 11, 2020 to record biological resources and to assess the likelihood of agency regulated areas on the project site. The survey involved searching all habitats on the site and recording all plant and wildlife species observed. M&A cross-referenced the habitats found on the project site against the habitat requirements of local or regionally known special-status species to determine if the proposed project could directly or indirectly impact such species.

M&A's site evaluation also included a cursory examination of the site to determine if any areas within the project site would be subject to regulation as waters of the United States and/or State (the level of analysis was not sufficient for a preliminary wetlands investigation report suitable for submittal to the Corps). The results of our literature research and field reconnaissance are provided in the sections below.

## 5. RESULTS OF RESEARCH AND PROJECT SITE ANALYSES

### 5.1 Topography

The topography is relatively flat with elevations ranging between approximately 38 and 45 feet above mean sea level (U.S. Geological Survey, Manteca, California 7.5 minute quadrangle;

Figure 2). It is likely that years of agricultural practices on the project site and in the surrounding areas have altered the natural topography.

## 5.2 Hydrology

The 1972 USGS Manteca quadrangle shows a dashed blue line drainage cutting through the northwestern corner of the project site, exiting the site, and then re-entering the northern end of the northeastern side of the project site. Based on the straightness of the dashed blue lines it appears this drainage was historically channelized. Today there is no evidence of this drainage on the project site. Agricultural activities on and off site have likely changed the natural drainage patterns, which resulted in the removal of this feature sometime in the distant past.

## 5.3 Plant Communities and Associated Wildlife Habitats

A complete list of plant species observed on the project site is presented in Table 1. Nomenclature used for plant names follows *The Jepson Manual, 2nd edition* (Baldwin 2012) and changes made to this manual as published on the Jepson Interchange Project website. Table 2 is a list of wildlife species observed on the project site. Nomenclature for wildlife follows CDFW's *Complete list of amphibian, reptile, bird, and mammal species in California* (CDFW 2016) and any changes made to species nomenclature as published in scientific journals since the publication of CDFW's list.

Grape vineyards are planted throughout the property. The existing residence and its landscape vegetation are the only physical break from the rows of grapes. The ornamental landscaping around the residence has not been well maintained recently and is interspersed with ruderal (weedy), herbaceous vegetation. A discussion of both the vineyard and the ornamental landscaping on site is provided below.

### 5.3.1 Plantation (Vineyard)

Vineyards are a type of "plantation" community because a vineyard is composed of grape vines typically planted in rows (Holland and Keil 1995). Figure 3, the aerial photograph of the project site, shows the vineyard rows. The grape vines over the majority of the project site were well maintained. However, in the northeastern portion of the project site, there is a section of the vineyard that appears decadent and overgrown (not maintained). In this section of the vineyard, the grape vines, which are typically trained to grow on wires, have become long and rangy, and have extended past their wires onto the ground. A few small cottonwood trees have also established sporadically within this section. (This section of the project site is heavily interspersed with ruderal herbaceous habitat. Ruderal (weedy) communities are assemblages of plants that thrive in waste areas, roadsides and other sites that have been disturbed by human activity).

Vineyards, unless grown organically, require a high amount of pesticides, herbicides and rodenticides. The use of these chemicals limits the diversity of animals that are found in proximity to these growing sites. Rodenticides are often applied to control ground squirrels and other agricultural "pests." Herbicides and pesticides are often applied to the vines to control insect damage, which in turn limits the number of insect-eating birds found foraging on and among the vines. The decadent vineyard on the project site appears unmaintained and therefore

has likely not been treated with herbicides or pesticides. Thus, it may provide additional foraging habitat for birds, rodents, and rabbits which in turn provide a prey source for raptors (birds of prey), red foxes (*Vulpes vulpes*) and coyote (*Canis latrans*). Raccoon (*Procyon lotor*) tracks were observed in the sand along the vineyard's vehicle access road. M&A did not observe any rodent burrows on the project site. It is likely that years of poisoning rodents, not only on the project site but in the surrounding orchards and farms, has greatly reduced any local rodent populations.

#### 5.3.2 ORNAMENTAL LANDSCAPING

Ornamental vegetation has been planted around the existing residence. This ornamental vegetation includes lawn areas, trees, shrubs, perennial plants and vines. Some examples of landscape vegetation on site include a pomegranate tree (*Punica granatum*), apricot tree (*Prunus armeniaca*), English ivy (*Hedera helix*), wisteria (*Wisteria* sp.) and red canna lily (*Canna* sp.). Interior live oak (*Quercus wislizenii*), a native California oak tree, has been planted in rows along either side of the long driveway leading to the residence.

The lawns surrounding the house are not well maintained or manicured, and a number of weedy grass and forb species such as puncture vine (*Tribulus terrestris*), Indian chickweed (*Mollugo verticillata*), common dandelion (*Taraxacum officinale*), hairy crabgrass (*Digitaria sanguinalis*) and red-stem filaree (*Erodium cicutarium*) have become established in the sod.

Ornamental vegetation typically provides habitat for birds and small mammals that are found in urban or suburban settings. Bird species including Northern Mockingbird (*Mimus polyglottos*), California Scrub Jay (*Aphelocoma californica*), Mourning Dove (*Zenaida macroura*) and Anna's Hummingbird (*Calypte anna*) were observed on this site near the residence. A cottontail rabbit (*Sylvilagus audubonii*), which is more common in fields and horse pastures than near residences, was seen using habitat in both the lawn area and the adjacent vineyard.

## 6. SPECIAL-STATUS SPECIES DEFINITION

### 6.1 Definitions

For purposes of this analysis, special-status species are defined as plants and animals that are legally protected under the California and Federal Endangered Species Acts (CESA and FESA, respectively) or other regulations, and species that are considered rare by the scientific community (for example, the CNPS). Special-status species are defined as:

- plants and animals that are listed or proposed for listing as threatened or endangered under the CESA (Fish and Game Code §2050 *et seq*.; 14 CCR §670.1 *et seq.*) or the FESA (50 CFR 17.12 for plants; 50 CFR 17.11 for animals; various notices in the Federal Register [FR] for proposed species);

- plants and animals that are candidates for possible future listing as threatened or endangered under the FESA (50 CFR 17; FR Vol. 64, No. 205, pages 57533-57547, October 25, 1999); and under the CESA (California Fish and Game Code §2068);

- plants and animals that meet the definition of endangered, rare, or threatened under the California Environmental Quality Act (CEQA) (14 CCR §15380) that may include species not found on either State or Federal Endangered Species lists;

- Plants occurring on Ranks 1A, 1B, 2A, 2B, 3, and 4 of CNPS' *Electronic Inventory* (CNPS 2001). The California CDFW of Fish and Wildlife (the CDFW) recognizes that Ranks 1A, 1B, and 2 of the CNPS inventory contain plants that, in the majority of cases, would qualify for State listing, and the CDFW requests their inclusion in EIRs. Plants occurring on CNPS Ranks 3 and 4 are "plants about which more information is necessary," and "plants of limited distribution," respectively (CNPS 2001). Such plants may be included as special-status species on a case-by-case basis due to local significance or recent biological information;

- migratory nongame birds of management concern listed by U.S. Fish and Wildlife Service (Migratory Nongame Birds of Management Concern in the United States: The list 1995; Office of Migratory Bird Management; Washington D.C.; Sept. 1995);

- animals that are designated as "species of special concern" by the CDFW (2020);

- Animal species that are "fully protected" in California (Fish and Game Codes 3511, 4700, 5050, and 5515).

In the paragraphs below we provide further definitions of legal status as they pertain to the special-status species discussed in this report or in the attached tables.

Federal Endangered or Threatened Species. A species listed as Endangered or Threatened under the FESA is protected from unauthorized "take" (that is, to harass, harm, pursue, hunt, shoot, or trap that species). If it is necessary to take a Federal listed Endangered or Threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from the USFWS prior to initiating the take.

State Threatened Species. A species listed as threatened under the CESA (§2050 of California Fish and Game Code) is protected from unauthorized "take" (that is, to harass, pursue, hunt, shoot, trap that species). If it is necessary to "take" a State-listed threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from the CDFW prior to initiating the take.

California Species of Special Concern. These are species for which California breeding populations are seriously declining and extirpation from all or a portion of their range is possible. This designation affords no legally mandated protection; however, pursuant to the CEQA Guidelines (14 CCR §15380), some species of special concern could be considered "rare." Pursuant to its rarity status, any unmitigated impacts to rare species could be considered a "significant effect on the environment" (§15382). Thus, species of special concern must be considered in any project that will, or is currently, undergoing CEQA review, and/or that must obtain an environmental permit(s) from a public agency.

CNPS Rank Species. The CNPS maintains an "Inventory" of special-status plant species. This inventory has four lists of plants with varying rarity. These lists are: Rank 1, Rank 2, Rank 3, and Rank 4. Although plants on these lists have no formal legal protection (unless they are also state or federally-listed species), the CDFW requests the inclusion of Rank 1 species in environmental documents. In addition, other state and local agencies may request the inclusion of species on other lists as well. The Rank 1 and 2 species are defined below:

- Rank 1A: Presumed extinct in California;
- Rank 1B: Rare, threatened, or endangered in California and elsewhere;
- Rank 2A: Plants presumed extirpated in California, but more common elsewhere;
- Rank 2B: Rare, threatened, or endangered in California, but more common elsewhere.

All of the plants constituting Rank 1B meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (CESA) of the Fish and Game Code and are eligible for State listing (CNPS 2001). Rank 2 species are rare in California, but more common elsewhere. Ranks 3 and 4 contain species about which there is some concern and are reviewed by the CDFW and maintained on "watch lists."

Additionally, in 2006, the CNPS updated their lists to include "threat code extensions" for each list. For example, Rank 1B species would now be categorized as Rank 1B.1, Rank 1B.2, or Rank 1B.3. These threat codes are defined as follows:

- 1 is considered "seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)";
- 2 is "fairly endangered in California (20-80% of occurrences threatened)";
- 3 is "not very endangered in California (less than 20% of occurrences threatened or no current threats known)."

Under the CEQA review process only CNPS Rank 1 and 2 species are considered since these are the only CNPS species that meet CEQA's definition of "rare" or "endangered." Impacts to Rank 3 and 4 species are not regarded as significant pursuant to CEQA.

Fully Protected Birds. Fully protected birds, such as the White-tailed Kite (*Elanus leucurus*) and Golden Eagle (*Aquila chrysaetos*), are protected under California Fish and Game Code (§3511). Fully protected birds may not be "taken" or possessed (i.e., kept in captivity) at any time.

### 6.2 Potential Special-Status Plants on the Project Site

Figure 4 provides a graphical illustration of the closest known records for special-status plant and animal species within 5 miles of the project site, and helps readers visually understand the number of sensitive species that occur in the vicinity of the project site. No special-status plants have been mapped on or adjacent the project site; this is likely due to the long history of agricultural practices in the region. According to the 1972 USGS Manteca, California quadrangle, the project site and surrounding properties have been farmed for at least the last 40 years. Farming likely predates even the last 40 years to a time before the USGS maps were created.

There were 19 special-status plant species found using a CNPS Nine Quad Search in the vicinity of the project site: No suitable habitats exist on or adjacent to the project site; the entire site is planted with vineyards or is landscaped. Due to the project site's long history of disturbance associated with agricultural practices, which has altered the soil profile, plant communities, and hydrology patterns, there are no natural or native habitats left on the project site. Thus, there are no areas on the project site that would be regarded as suitable for any special-status plant species. Thus, the project will not impact special-status plant species, and mitigation for potential impacts to special-status plants is not warranted for this project.

### 6.3 Potential Special-Status Animals on the Project Site

Figure 4 provides a graphical illustration of the closest known records for special-status species within 5 miles of the project site. No special-status animals have ever been mapped on or adjacent to the project site; this is likely due to the long history of agricultural practices in the region. According to the 1972 USGS Manteca, California quadrangle, the project site and surrounding properties have been farmed for at least 40 years. This number is likely higher, dating back to before the USGS maps were created.

Three (3) special-status animal species have been identified within 5 miles of the project site (Table 4). Due to the project site's long history of disturbance associated with agricultural practices, which has altered the soil profile, plant communities and hydrology patterns, there are no natural or native habitats left on the project site. Thus, there are no areas that would be regarded as suitable for special-status animal species. No burrows, ponds, wetlands, or suitable host-plant species are present on the project site. While interior live oaks have been planted along both sides of the driveway that lead to the existing residence, these trees occur in a highly trafficked area and are therefore unlikely to be used by most nesting wildlife. However, nesting passerine (perching) birds may still nest in these oaks, and thus cannot be dismissed from further consideration.

Since there are trees and shrubs on the project site that could be used by nesting passerines, and as nesting birds are protected pursuant to California Fish and Game Code and the Migratory Bird Treaty Act, nesting surveys for passerine birds should be conducted on the project site prior to any tree removal or earth-moving disturbance. Please see the "Impacts and Mitigation Measures" section for details.

Another special-status animal species listed in the CNDDB that should be discussed in this report, although it would not be expected on site, is the Swainson's Hawk (*Buteo swainsonii*). The Swainson's Hawk is a state-listed threatened species afforded protection pursuant to the California Endangered Species Act, Title 14, California Code of Regulations. While it has no special federal status, it is protected from direct take under the Federal Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711). In the Central Valley of California, the majority of Swainson's Hawk nests and territories are associated with riparian systems, where nests are commonly found in cottonwoods and oaks (Schlorff et. al. 1984). This species has also been documented nesting in eucalyptus (*Eucalyptus* spp.), black walnut (*Juglans hindsii*), black locust (*Robinia*

*pseudoacacia*), almond (*Prunus dulcis*), Osage orange (*Maclura pomifera*), Arizona cypress (*Cupressus arizonica*) and pine (*Pinus* spp.) (CNDDB records).

Foraging habitats for this species include alfalfa fields, fallow fields, beet, tomato, and other low-growing row or field crops, dry-land and irrigated pasture, and rice land, when not flooded (CDFG 1994). The Swainson's Hawk generally forages in open habitats with short vegetation containing small mammals, reptiles, birds, and insects.

A 2009 record for a nesting Swainson's Hawk is located approximately 1.6 miles south of the project site in a Eucalyptus tree surrounded by orchards (CNDDB Occurrence No. 2434). Swainson's Hawks have not been observed nesting any closer than 1.6 miles from the project site, likely because the surrounding area is also agricultural and does not provide suitable nesting habitat. M&A did not observe any raptor stick nests or sign of nesting Swainson's hawks on the project site or nearby during our site survey. The project site does not provide suitable foraging or nesting habitat for the Swainson's Hawk. The entire property outside of the existing residence and its ornamental vegetation is planted with vineyards. Vineyards do not provide suitable foraging habitat for large raptors (birds of prey), including the Swainson's Hawk. Thus, it is M&A's conclusion that project site development would not impact either the nesting or foraging habitat of Swainson's Hawks.

## 7. REGULATORY FRAMEWORK FOR NATIVE WILDLIFE, FISH, AND PLANTS

This section provides a discussion of those laws and regulations that are in place to protect native wildlife, fish, and plants. Under each law we discuss their pertinence to the proposed development.

### 7.1 Federal Endangered Species Act

The Federal Endangered Species Act (FESA) forms the basis for the federal protection of threatened or endangered plants, insects, fish and wildlife. FESA contains four main elements, which are as follows:

Section 4 (16 USCA §1533): Species listing, Critical Habitat Designation, and Recovery Planning: outlines the procedure for listing endangered plants and wildlife.

Section 7 (§1536): Federal Consultation Requirement: imposes limits on the actions of federal agencies that might impact listed species.

Section 9 (§1538): Prohibition on Take: prohibits the "taking" of a listed species by anyone, including private individuals, and state and local agencies.

Section 10: Exceptions to the Take Prohibition: non-federal agencies can obtain an incidental take permit through approval of a Habitat Conservation Plan.

In the case of saltwater fish and other marine organisms, the requirements of FESA are enforced by the National Marine Fisheries Service (NMFS). The USFWS enforces all other cases. Below,

Sections 9, 7, and 10 of FESA are discussed, since they are the sections most relevant to the proposed project.

Section 9 of FESA as amended, prohibits the "take" of any fish or wildlife species listed under FESA as endangered. Under Federal regulation, "take" of fish or wildlife species listed as threatened is also prohibited unless otherwise specifically authorized by regulation. "Take," as defined by FESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. "Harm" includes not only the direct taking of a species itself, but the destruction or modification of the species' habitat resulting in the potential injury of the species. As such, "harm" is further defined to mean "an act which actually kills or injures wildlife; such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 CFR 17.3). A December 2001 decision by the 9th Circuit Court of Appeals (Arizona Cattle Growers' Association, Jeff Menges, vs. the U.S. Fish and Wildlife Service and Bureau of Land Management, and the Southwest Center for Biological Diversity) ruled that the USFWS must show that a threatened or endangered species is present on a project site and that it would be taken by the project activities. According to this ruling, the USFWS can no longer require mitigation based on the probability that the species could use the site. Rather, they must show that it is actually present.

Section 9 applies to any person, corporation, federal agency, or any local or State agency. If "take" of a listed species is necessary to complete an otherwise lawful activity, this either triggers the need to obtain an incidental take permit through a Section 7 Consultation, as discussed further below (for federal actions or private actions that are permitted or funded by a federal agency), or requires preparation of a Habitat Conservation Plan (HCP) pursuant to Section 10 of FESA (for state and local agencies, or individuals, and projects without a federal "nexus").

Section 7(a)(2) of the Act requires that each federal agency consult with the USFWS to ensure that any action authorized, funded or carried out by such agency is not likely to jeopardize the continued existence of an endangered or threatened species, or result in the destruction or adverse modification of critical habitat for listed species. Critical habitat designations mean: (1) specific areas within a geographic region currently occupied by a listed species, on which are found those physical or biological features that are essential to the conservation of a listed species and that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by a listed species that are determined essential for the conservation of the species.

The Section 7 consultation process only applies to actions taken by federal agencies that are considering authorizing discretionary projects. Section 7 is by and between the NMFS and/or the USFWS and the federal agency contemplating a discretionary approval (that is, the "federal nexus agency," for example, the Corps or the Federal Highway Administration). Private parties, cities, counties, etc. (i.e., applicants) may participate in the Section 7 consultation *at the discretion of the federal agencies conducting the Section 7 consultation*. The Section 7 consultation process is triggered by a determination of the "action agency" – that is, the federal agency carrying out, funding, or approving a project – that the project "may affect" a listed species or critical habitat. If an action is likely to adversely affect a listed species or designated

critical habitat, formal consultation between the nexus agency and the USFWS/NMFS is required. As part of the formal consultation, the USFWS/NMFS may resolve any issues informally with the nexus agency or may prepare a formal Biological Opinion assessing whether the proposed action would be likely to result in "jeopardy" to a listed species or if it could adversely modify designated critical habitat. If the USFWS/NMFS prepares a Biological Opinion, it will contain either a "jeopardy" or "non-jeopardy" decision. If the USFWS/NMFS concludes that a proposed project would result in adverse modification of critical habitat or would jeopardize the continued existence of a federal listed species (that is, it will issue a jeopardy decision), the nexus federal agency would be the most unlikely to authorize its discretionary permit. If the USFWS/NMFS prepares a "non-jeopardy" Biological Opinion, the nexus federal agency may authorize the discretionary permit making all conditions of the Biological Opinion conditions of its discretionary permit. A non-jeopardy Biological Opinion constitutes an "incidental take" permit that allows applicants to "take" federally listed species while otherwise carrying out legally sanctioned projects.

For non-federal entities (e.g. private parties, cities, or counties) that are considering a discretionary permit, Section 10 provides the mechanism for obtaining take authorization. Under Section 10 of FESA, the applicant for an "incidental take permit" is required to submit a "conservation plan" to USFWS or NMFS that specifies, among other things, the impacts that are likely to result from the taking, the measures the permit applicant will undertake to minimize and mitigate such impacts, and the funding that will be available to implement those steps. Conservation plans under FESA have come to be known as "habitat conservation plans" or "HCPs" for short. The terms incidental take permit, Section 10 permit, and Section 10(a)(1)(B) permit are used interchangeably by USFWS. Section 10(a)(2)(B) of FESA provides statutory criteria that must be satisfied before an incidental take permit can be issued.

#### 7.1.1 RESPONSIBLE AGENCY

FESA gives regulatory authority over terrestrial species and non-anadromous fish to the USFWS. The NMFS has authority over marine mammals and anadromous fish.

#### 7.1.2 APPLICABILITY TO THE PROPOSED PROJECT

The project site is almost entirely planted with grapes. The only portion of the project site not under agricultural practices is where the existing 20,000-square foot house is located. Thus, there are no areas of the project site that provide suitable habitat for federally listed plants, animals, or fish. No impacts to federally listed species are expected from the proposed project.

### 7.2 Federal Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (16 U.S.C. §§ 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989) makes it unlawful to "take" (kill, harm, harass, shoot, etc.) any migratory bird listed in Title 50 of the Code of Federal Regulations, Section 10.13, including their nests, eggs, or young. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (such as warblers, flycatchers, swallows, etc.).

Executive Order 13186 for conservation of migratory birds (January 11, 2001) requires that any project with federal involvement address impacts of federal actions on migratory birds. The order is designed to assist federal agencies in their efforts to comply with the MBTA and does not constitute any legal authorization to take migratory birds. The order also requires federal agencies to work with the USFWS to develop a memorandum of understanding (MOU). Protocols developed under the MOU must promote the conservation of migratory bird populations through the following means:

- avoid and minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions;

- restore and enhance habitat of migratory birds, as practicable, and prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

#### 7.2.1 Applicability to The Proposed Project

Generally, development projects are not expected to harm adult birds as typically they can fly out of harm's way. However, the eggs and young of nesting birds are susceptible to "take" from development projects that demolish or alter habitat occupied by nesting birds. The project site does not provide likely nesting habitat for nesting raptors. The live oak trees and ornamental fruit trees on the project site are generally too short or too small to be used by nesting raptors. However, these oak trees and a few other ornamental trees on the project site provide suitable nesting habitat for passerine birds. Thus, nesting surveys should be conducted prior to tree removal or ground disturbance to ensure there are no impacts to nesting birds.

As long as there is no direct mortality of species protected pursuant to the Migratory Bird Treaty Act caused by development of the site, there should be no constraints to development on site. To comply with the Migratory Bird Treaty Act, all active nest sites would have to be avoided while such birds were nesting. Upon completion of nesting, the project could commence as otherwise planned. Please review specific requirements for avoidance of nest sites for potentially occurring species in the Impacts and Mitigations section below.

### 7.3 **State Endangered Species Act**

#### 7.3.1 Section 2081 of the State Endangered Species Act

In 1984, the state legislated the California Endangered Species Act (CESA) (Fish and Game Code §2050). The basic policy of CESA is to conserve and enhance endangered species and their habitats. State agencies will not approve private or public projects under their jurisdiction that would impact threatened or endangered species if reasonable and prudent alternatives are available. Because CESA does not have a provision for "harm" (see discussion of FESA above), the CDFW considerations pursuant to CESA are limited to those actions that would result in the direct take of a listed species.

If the CDFW determines that a proposed project could impact a State listed threatened or endangered species, the CDFW will provide recommendations for "reasonable and prudent"

project alternatives. The CEQA lead agency can only approve a project if these alternatives are implemented, unless it finds that the project's benefits clearly outweigh the costs, reasonable mitigation measures are adopted, there has been no "irreversible or irretrievable" commitment of resources made in the interim, and the resulting project would not result in the extinction of the species. In addition, if there would be impacts to threatened or endangered species, the lead agency typically requires project applicants to demonstrate that they have acquired "incidental take" permits from the CDFW and/or USFWS (if it is a Federally-listed species) prior to allowing/permitting impacts to such species.

If proposed projects would result in impacts to a State listed species, an "incidental take" permit pursuant to §2081 of the Fish and Game Code would be necessary (versus a Federal incidental take permit for Federally listed species). The CDFW will issue an incidental take permit only if:

1) The authorized take is incidental to an otherwise lawful activity;
2) the impacts of the authorized take are minimized and fully mitigated;
3) measures required to minimize and fully mitigate the impacts of the authorized take:
    a) are roughly proportional in extent to the impact of the taking on the species;
    b) maintain the project applicant's objectives to the greatest extent possible; and,
    c) are capable of successful implementation; and,
4) adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with, and the effectiveness of, these measures.

If an applicant is preparing a habitat conservation plan (HCP) as part of the federal 10(a) permit process, the HCP might be incorporated into the §2081 permit if it meets the substantive criteria of §2081(b). To ensure that an HCP meets the mitigation and monitoring standards in Section 2081(b), an applicant should involve the CDFW staff in development of the HCP. If a final Biological Opinion (federal action) has been issued for the project pursuant to Section 7 of the federal Endangered Species Act, it might also be incorporated into the §2081 permit if it meets the standards of §2081(b).

No §2081 permit may authorize the take of a species for which the Legislature has imposed strict prohibitions on all forms of "take." These species are listed in several statutes that identify "fully protected" species and "specified birds." See Fish and Game Code §§ 3505, 3511, 4700, 5050, 5515, and 5517. If a project is planned in an area where a "fully protected" species or a "specified bird" occurs, an applicant must design the project to avoid all take.

In September 1997, Assembly Bill 21 (Fish and Game Code §2080.1) was passed. This bill allows an applicant who has obtained a "non-jeopardy" federal Biological Opinion pursuant to Section 7, or who has received a federal 10(a) permit (federal incidental take permit), to submit the federal opinion or permit to the CDFW for a determination as to whether the federal document is "consistent" with CESA. If after 30 days the CDFW determines that the federal incidental take permit is consistent with state law, and that all state listed species under consideration have been considered in the federal Biological Opinion, then no further permit or consultation is required under CESA for the project. However, if the CDFW determines that the federal opinion or permit is not consistent with CESA, or that there are state listed species that were not considered in the federal Biological Opinion, then the applicant must apply for a state

permit under Section 2081(b). The process provided in Fish and Game Code §2080.1 (Assembly Bill 21) may be of use when the incidental take would occur for species that are listed under both the federal and state endangered species acts. Assembly Bill 21 is of no use if an affected species is state listed, but not federally listed.

State and federal incidental take permits are issued on a discretionary basis, and are typically only authorized if applicants are able to demonstrate that impacts to the listed species in question are unavoidable, and can be mitigated to an extent that the reviewing agency can conclude that the proposed impacts would not jeopardize the continued existence of the listed species under review. Typically, if there would be impacts to a listed species, mitigation that includes habitat avoidance, preservation, and creation of endangered species habitat is necessary to demonstrate that projects would not threaten the continued existence of a species. In addition, management endowment fees are usually collected as part of the agreement for the incidental take permit(s). The endowment is used to manage any lands set aside to protect listed species, and for biological mitigation monitoring of these lands over (typically) a five-year period.

#### 7.3.2 Applicability to Proposed Project

The project site is almost entirely planted with grapes. The only portion of the project site not under agricultural practices is where the existing 30,000-square foot house is located. Thus, there are no areas of the project site that provide suitable habitat for state listed plants, animals, or fish. No impacts to state listed species are expected from the proposed project.

### 7.4 Applicable CEQA Regulations

Section 15380 of CEQA defines "endangered" species as those whose survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors. "Rare" species are defined by CEQA as those who are in such low numbers that they could become endangered if their environment worsens; or the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in FESA. The CEQA Guidelines also state that a project will normally have a significant effect on the environment if it will "substantially affect a rare or endangered species of animal or plant or the habitat of the species." The significance of impacts to a species under CEQA, therefore, must be based on analyzing actual rarity and threat of extinction to that species despite its legal status or lack thereof.

#### 7.4.1 Applicability to The Proposed Project

This document addresses impacts to species that would be defined as endangered or rare pursuant to Section 15380 of the CEQA. This document is suitable for use by the CEQA lead agency (in this case the City of Manteca) for preparation of any CEQA review document prepared for the proposed project. This report has been prepared as a Biology Section that is suitable for incorporation into an initial study or the biology section of an Environmental Impact Report.

## 7.5 California Fish and Game Code § 3503, 3503.5, 3511, and 3513

California Fish and Game Code §3503, 3503.5, 3511, and 3513 prohibit the "take, possession, or destruction of birds, their nests or eggs." Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered "take." Such a take would also violate federal law protecting migratory birds (Migratory Bird Treaty Act).

All raptors (that is, hawks, eagles, owls) their nests, eggs, and young are protected under California Fish and Game Code (§3503.5). Additionally, "fully protected" birds, such as the White-tailed Kite (*Elanus leucurus*) and Golden Eagle (*Aquila chrysaetos*), are protected under California Fish and Game Code (§3511). "Fully protected" birds may not be taken or possessed (that is, kept in captivity) at any time.

### 7.5.1 Applicability to the Proposed Project

The interior live oak trees and a few ornamental trees on the project site provide suitable nesting habitat for passerine birds. Preconstruction surveys should therefore be conducted for nesting passerine bird species to ensure that there is no direct take of these birds including their eggs, or young. Any active nests that were found during preconstruction surveys would have to be avoided by the project. To avoid impacts to nesting birds suitable non-disturbance buffers would have to be established around nest sites until the nesting cycle is complete. More specifics on the size of buffers are provided below in the Impacts and Mitigations section.

## 7.6 San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

The San Joaquin Council of Governments (SJCOG) adopted a habitat conservation plan for off-setting impacts to (sensitive) biological resources by projects within San Joaquin County. The plan was prepared with the cooperation of regulatory agencies, cities, and other interested parties. The resulting document is the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) dated November 14, 2000. The purpose of the plan is to balance the often conflicting interests of agriculture, development, and the environment.

One of the primary goals of the SJMSCP was to obtain permits from state and federal agencies that would cover a variety of project activities over the next 50 years. This goal was partially achieved when the USFWS and the CDFW issued incidental take permits in conformance with the Federal Endangered Species Act (FESA) and the California Endangered Species Act (CESA). The SJMSCP has a variety of mechanisms for complying with the CESA and FESA, as described in the appropriate sections in this document.

The SJMSCP provides a mechanism for applicants to pay a fee to the SJCOG to mitigate impacts to special-status plant and animal species that could occur on a project site. Use of the SJMSCP can save an applicant considerable time in permitting a project that may affect special-status species and/or those species protected pursuant to the CESA and FESA.

It should be noted that two important federal agencies (U.S. Army Corps of Engineers and the California Regional Water Quality Control Board) have not issued permits to the SJCOG and so payment of the fee to use the SJMSCP will not modify requirements now imposed by these two agencies. In addition, activities affecting special-status marine species including Chinook salmon

(*Oncorhynchus tshawytscha*) and steelhead (*Oncorhynchus mykiss*) must still be permitted separately by the National Marine Fisheries Service (NMFS). Similarly, take of Delta smelt (*Hypomesus transpacificus*), and giant garter snake (*Thamnophis gigas*), and several other species protected pursuant to the FESA, are not covered by use of the SJMSCP. If the NMFS or the U.S. Fish and Wildlife Service (USFWS) determine the project site provides suitable habitat for giant garter snake or Delta smelt, an incidental take permit would be required from the USFWS. Similarly, those projects affecting waters of the United States must still be permitted by the U.S. Army Corps of Engineers (Corps) and the California Regional Water Quality Control Board (RWQCB).

When a project proponent in San Joaquin County chooses to use the SJMSCP, an application is submitted to the city having jurisdiction over the proposed project site, providing the city in question adopted and otherwise ratified the SJMSCP. Outside city limits, an application is made directly to the SJCOG via a formal application. The SJCOG then assigns a biologist from their on-call consultant list to determine how the project can be constructed while remaining in conformance with the SJMSCP. M&A is one of several consulting firms selected by the SJCOG to assist with implementation of the SJMSCP. Accordingly, we can prepare this submittal for the SJCOG.

#### 7.6.1 APPLICABILITY TO THE PROPOSED PROJECT

The project site is not within the SJMSCP "covered area." Rather, it is currently within an area of unincorporated land that is outside the SJMSCP boundaries. The City of Manteca is a signatory to the SJMSCP, and typically requires all areas within the city limits to participate in the SJMSCP. Therefore, upon annexation of the proposed project to the City, the City would also require the project to seek coverage under the SJMSCP. The San Joaquin Council of Governments (SJCOG) would be required to process, review and approve requests to annex the proposed project to the SJMSCP. By being annexed into the covered area the applicant could then use the SJMSCP to address any project impacts to general wildlife habitat and open space that supports wildlife populations.

### 7.7 City of Manteca General Plan

The City of Manteca General Plan, 2023, Policy Document was adopted by the City Council on October 6, 2003 and has since been updated on three occasions (2010, 2011, and 2016). Below we discuss those portions of the General Plan that have to do with Biological Resources.

**Goal RC-10.** Protect sensitive native vegetation and wildlife communities and habitat in Manteca.

#### 7.7.1.1 Policies: Biological Resources

**RC-P-31. Minimize impact of new development on native vegetation and wildlife**.

The project site does not support any native vegetation communities. It consists of a vineyard and ornamental landscaping associated with a large residence. However, some of the planted trees, the interior live oaks, for example, provide suitable habitat for nesting passerine birds. Thus, nesting surveys would need to be conducted prior to any tree removal or earth work near the trees to ensure that these activities did not impact nesting birds. See the Impacts and Mitigations section for details.

**RC-P-32. Condition new development in the vicinity of the San Joaquin River and Walthall Slough to protect riparian habitat, wetlands, and other native vegetation and wildlife communities and habitats.**

The project site is not within the vicinity of the San Joaquin River or Walthall Slough. Additionally, the project site does not provide riparian habitat or other native vegetation or wildlife habitat. There are no drainages onsite or adjacent.

**RC-P-33. Discourage the premature removal of orchard trees in advance of development and discourage the removal of other existing healthy mature trees, both native and introduced.**

There are no orchard trees on the project site. The planted interior live oaks on the project site are healthy and it may be possible to incorporate them into the site development plan. If not, however, landscape planting associated with the proposed development would compensate for the loss of these trees.

**RC-P-34. Protect special status species and other species that are sensitive to human activities.**

The project site does not provide habitat for special-status species.

**RC-P-35. Allow contiguous habitat areas.**

The project site does not provide any contiguous habitat since it is all vineyard. Additionally, the project site is surrounded by agricultural lands (orchard, vineyard, berry farms) and there is no habitat surrounding.

**RC-P-36. Consider the development of new drainage channels planted with native vegetation, which would provide habitat as well as drainage.**

There are no drainages planned as part of the project.

8.10.2 Implementation: Biological Resources

**RC-I-32. Continue to support and comply with the requirements of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) when reviewing proposed public and private land use changes.**

The project site is not within the coverage area of the SJMSCP but could be annexed into the area of coverage. If the proposed project site is annexed into the SJMSCP covered area then the project shall be required to pay a fee to use the SJMSCP. This fee will cover (mitigate) impacts to all SJMSCP covered species and for loss of open space lands that otherwise support common wildlife species.

**RC-I-33. Project proponents who opt not to participate in the SJMSCP shall:**

• Satisfy applicable U.S. Endangered Species Act (FESA), California Endangered Species Act (CESA), National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and other applicable local, state, and federal laws and regulation provisions through consultations with the Permitting Agencies and local planning agencies.

• Provide site-specific research and ground surveys for proposed development projects. This research must include a detailed inventory of all biological resources onsite, and appropriate mitigation measures for avoiding or reducing impact to these biological resources. This requirement may be waived if determined by the City that the proposed project area is already sufficiently surveyed.

M&A biologists surveyed the project site for biological resources and determined that neither native nor naturalized plant communities or wildlife habitats nor habitat for sensitive or special-status biological resources occur on site (the project site supports only a residence and a

vineyard). Therefore, the proposed project would be most unlikely to result in impacts to state or federally-listed plant or animal species. However, the project site provides suitable nesting habitat for passerine birds. Nesting passerine birds are protected pursuant to the Federal Migratory Bird Treaty Act and California Fish and Game Code. The SJMSCP has Incidental Take Minimization Measures (ITMMs) that when implemented will protect nesting songbirds that are protected pursuant to the Migratory Bird Treaty Act and Fish and Game Code. By annexing the project site into the SJMSCP covered area, the project proponent can mitigate for any potential impacts to special-status species and species protected by other environmental laws through payment of a fee to the City of Manteca for use of the SJMSCP.

**RC-I-34. Until such time that a Clean Water Act regional general permit or its equivalent is issued for coverage under the SJMSCP, acquisition of a Section 404 permit by project proponents will continue to occur as required by existing regulations. Project proponents shall comply with all requirements for protecting federally protected wetlands.**

There are no potential waters of the U.S./State on the project site. Accordingly, authorization of the proposed project under Sections 404 and 401 of the Clean Water Act would not necessary.

**RC-I-35. Continue to enforce the City's heritage tree ordinance which defines and identifies mature trees to be protected, and establishes regulations for their protection and removal.**

The Manteca Municipal Code calls for the avoidance of heritage trees as defined under section 17.61.030. Heritage trees are any natural woody plant rooted in the ground and having a diameter of 30 inches or more when measured two feet above the ground.

**RC-I-36. Limit the access of pedestrians and bicyclists to wetland areas so that access is compatible with long-term protection of these natural resources.**

There are no wetland areas on the project site.

**RC-I-37. The City shall implement multiple use of resource areas, where feasible, that includes passive recreational and educational opportunities with the protection of wildlife and vegetation habitat areas.**

The project site in its current condition does not provide any resource areas.

### 7.8 City Tree Ordinance

The landscape tree protection ordinance (Chapter 17.48 Landscape Care, Maintenance and Replacement) requires:

"*For landscaping for multi-family and nonresidential development, removal of trees planted as part of an approved landscape plan shall be limited to trees that are in poor health, structurally distressed, or unsafe. The removal of a tree shall be the final recourse upon determining that it is infeasible to save the tree by any other method (e.g., pruning, treatment of*

*diseases, fertilizing).* ***Landscape Replacement.*** *All plant material removed from a multi-family or nonresidential project in which the Community Development Department has approved the landscape plan shall be replaced. Replacement shrubs shall be a minimum 5-gallon size. Ground cover shall be a minimum size of a full flat*."

#### 7.8.1 APPLICABILITY TO THE PROPOSED PROJECT

Trees planted for landscaping on the project site were not planted as part of a multi-family or nonresidential development. The existing trees were planted by the owner of the existing single-family residence. They are not part of an approved landscape plan for a larger development project. Therefore, according to the City's Chapter 17.48 on Landscape Care, Maintenance and Replacement, there would be no requirement to mitigate for the removal of the existing landscape trees.

## 8. REGULATORY REQUIREMENTS PERTAINING TO WATERS OF THE UNITED STATES AND STATE

This section presents an overview of the criteria used by the Corps, the RWQCB, the State Water Resources Control Board (SWRCB), and the CDFW to determine those areas within a project area that would be subject to their regulation.

### 8.1 U.S. Army Corps of Engineers Jurisdiction and General Permitting

#### 8.1.1 SECTION 404 OF THE CLEAN WATER ACT

Congress enacted the Clean Water Act "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (33 U.S.C. §1251(a)). Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), the U.S. Army Corps of Engineers (Corps) regulates the disposal of dredged or fill material into "waters of the United States" (33 CFR Parts 328 through 330). This requires project applicants to obtain authorization from the Corps prior to discharging dredged or fill materials into any water of the United States.

##### 8.1.1.1 Navigable Waters Protection Rule

On April 21, 2020, the U.S. Environmental Protection Agency (EPA) and the Corps (together, ''the agencies'') published the Navigable Waters Protection Rule re-defining the scope of waters subject to federal regulation under the Clean Water Act (CWA or the Act), in light of the U.S. Supreme Court cases in *United States* v. *Riverside Bayview Homes* (*Riverside Bayview*), *Solid Waste Agency of Northern Cook County* v. *United States* (*SWANCC*), and *Rapanos* v. *United States* (*Rapanos*), and consistent with Executive Order 13778, signed on February 28, 2017, entitled ''Restoring the Rule of Law, Federalism, and Economic Growth by Reviewing the 'Waters of the United States' Rule.'' This Final Rule became effective on June 22, 2020 (Corps 2020).

In this final rule, the agencies interpret the term ''waters of the United States'' to encompass:

1. The territorial seas and traditional navigable waters;
2. perennial and intermittent tributaries that contribute surface water flow to such waters;
3. certain lakes, ponds, and impoundments of jurisdictional waters; and,

4. wetlands adjacent to other jurisdictional waters.

Paragraph (a) of the final rule identifies these four categories of waters that are ‘‘waters of the United States.’’ These waters are referred to as ‘‘jurisdictional.’’

Section 404 jurisdiction in "other waters" such as lakes, ponds, and streams, extends to the upward limit of the ordinary high water mark (OHWM) or the upward extent of any adjacent wetland. The OHWM on a non-tidal water is:

- the "line on shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR Section 328.3[7]).

### 8.1.2 Clean Water Act Defined Wetlands

Wetlands are defined as: “...those areas that are inundated or saturated by surface or ground water at a frequency and duration to support a prevalence of vegetation adapted for life in saturated soil conditions” (33 CFR Section 328.3 [16]). Wetlands usually must possess hydrophytic vegetation (i.e., plants adapted to inundated or saturated conditions), wetland hydrology (e.g., topographic low areas, exposed water tables, stream channels), and hydric soils (i.e., soils that are periodically or permanently saturated, inundated or flooded and that exhibit properties that typically include redoximorphic chemical changes to the soil properties indicative of periodic saturation or inundation, and, thus that meet the hydric soil criterion). All three parameters must be present to be regarded as a Clean Water Act defined wetland. Wetlands may or may not be regulated by the Corps pursuant to the Clean Water Act depending on whether they occur as part of a navigable water or have direct adjacency to a navigable waters, as defined above.

#### 8.1.2.1 Permitting Corps Jurisdictional Areas

To remain in compliance with Section 404 of the Clean Water Act, project proponents and property owners (applicants) are required to be permitted by the Corps prior to discharging or otherwise impacting waters of the U.S. In many cases, the Corps must visit a proposed project area (to conduct a “jurisdictional determination”) to confirm the extent of area falling under their jurisdiction prior to authorizing any permit for that project area. Typically, at the time the jurisdictional determination is conducted, applicants (or their representative) will discuss the appropriate permit application that would be filed with the Corps for permitting the proposed impact(s) to “waters of the United States.”

Pursuant to Section 404, the Corps normally provides two alternatives for permitting impacts to waters of the U.S. The first alternative would be to use Nationwide Permit(s) (NWP). The second alternative is to apply to the Corps for an Individual Permit (33 CFR Section 235.5(2)(b)). The application process for Individual Permits is extensive and includes public interest review procedures (i.e., public notice and receipt of public comments) and must contain an “alternatives analysis” that is prepared pursuant to Section 404(b) of the Clean Water Act (33 U.S.C. 1344(b)). The alternatives analysis is also typically reviewed by the federal EPA and thus brings

another resource agency into the permitting framework. Both the Corps and EPA take the initial viewpoint that there are practical alternatives to the proposed project if there would be impacts to waters of the U.S., and the proposed permitted action is not a water dependent project (e.g., a pier or a dredging project). Alternative analyses therefore must provide convincing reasons that the proposed permitted impacts are unavoidable. Individual Permits may be available for use in the event that discharges into regulated waters fail to meet conditions of NWP(s).

NWPs are a type of general permit administered by the Corps and issued on a nationwide basis that authorize minor activities that affect Corps regulated waters. Under a NWP, if certain conditions are met, the specified activities can take place without the need for an individual or regional permit from the Corps (33 CFR, Section 235.5[c][2]). In order to use NWP(s), a project must meet 27 general nationwide permit conditions, and all specific conditions pertaining to the NWP being used (as presented at 33 CFR Section 330, Appendices A and C). It is also important to note that pursuant to 33 CFR Section 330.4(e), there may be special regional conditions or modifications to a given NWP that could have relevance to individual proposed projects. Finally, pursuant to 33 CFR Section 330.6(a), Nationwide permittees may, and in some cases must, request from the Corps confirmation that an activity complies with the terms and conditions of the NWP intended for use (i.e., must receive "verification" from the Corps).

Prior to finalizing design plans, the applicant needs to be aware that the Corps maintains a policy of "no net loss" of wetlands (waters of the U.S.) from project area development. Therefore, it is incumbent upon applicants that propose to impact Corps regulated areas to submit a mitigation plan that demonstrates that impacted regulated areas would be recreated (i.e., impacts would be mitigated). Typically, the Corps requires mitigation to be "in-kind" (i.e., seasonal wetlands would be filled, mitigation would include seasonal wetland mitigation), and at a minimum of a 1:1 replacement ratio (i.e., one acre or fraction thereof recreated for each acre or fraction thereof lost). Often a 2:1 replacement ratio is required if the Permittee is responsible for the mitigation. In some cases, the Corps allows "out-of-kind" mitigation if the compensation site has greater value than the impacted site. Finally, there are many Corps approved wetland mitigation banks where wetland mitigation credits can be purchased by applicants to meet mitigation compensation requirements. Mitigation banks have defined service areas and the Corps may only allow their use when a project would have minimal impacts to wetlands.

### 8.1.3 Applicability to the Proposed Project

Almost the entire project site is planted with grapes. The only exception is where a large residence exists and landscape vegetation is planted. According to the 1972 USGS Manteca, California quadrangle, the project site and surrounding properties have been farmed for 40+ years (and likely much longer), well before the Clean Water Act was legislated. There are no areas on the project site that now constitute "farmed wetlands" or that would otherwise suggest that agricultural activities converted waters of the U.S. into cropland (in other words, there are no existing wetlands or other waters on the site that are currently farmed). Thus, there is no reason to believe that the project site supports prior converted cropland. Development of the project site should not impact waters of the U.S.

## 8.2 California Regional Water Quality Control Board (RWQCB)

### 8.2.1 Section 401 of the Clean Water Act

The SWRCB and RWQCB regulate activities in "waters of the State" (which includes wetlands) through Section 401 of the Clean Water Act. While the Corps administers a permitting program that authorizes impacts to waters of the U.S., including wetlands and other waters, any Corps permit authorized for a proposed project would be inoperative unless it is a NWP that has been certified for use in California by the SWRCB, or if the RWQCB has issued a project specific certification of water quality. Certification of NWPs requires a finding by the SWRCB that the activities permitted by the NWP will not violate water quality standards individually or cumulatively over the term of the permit (the term is typically for five years). Certification must be consistent with the requirements of the federal Clean Water Act, the CEQA, the CESA, and the SWRCB's mandate to protect beneficial uses of waters of the State. Any denied (i.e., not certified) NWPs, and all Individual Corps permits, would require a project specific RWQCB certification of water quality. Where a project will result in dredge or fill of non-federal waters of the State, the RWQCB will authorize those fills through waste discharge requirements issued under the Porter Cologne Water Quality Control Act.

On April 2, 2019, the SWRCB adopted a state-level definition of "wetlands,' the definition of which is broader than the federal definition in that unvegetated areas may be considered a wetland water of the State. As a part of the same policy, the SWRCB adopted permit procedures and standards governing the discharge of dredged or fill material into wetlands and other waters of the State. The policy includes, among other things, requirements for analyses to identify the least environmentally damaging practicable alternative (LEDPA) and compensatory mitigation standards including a minimum 1:1 ratio for wetlands and streams, and full functional replacement of all waters on top of this minimum where applicable. The policy governs both Section 401 certifications and Waste Discharge Requirements (WDRs).

As of May 28, 2020, the SWRCB formally adopted the Clean Water Act 404(b)1 Guidelines heretofore previously only enforced by the Corps for projects exceeding 0.5-acre of impact and over 300 linear feet of tributary of waters of the U.S. The RWQCB has since one upped the Corps by requiring the 404(b)(1) guidelines for projects **that impact 1 square foot or greater** and they require a thorough discussion of onsite and offsite alternatives in line with the 404(b)1 Guidelines. This is clear upon review of both the Procedures and the Implementation Guidance which relies heavily on multiple references relating to the 404(b)1 process as long exercised by the Corps. The RWQCB alternatives analysis has a "tiered" approach depending on the acreage of project impacts to waters of the State. Each tier level has different analysis requirements that must be followed. These three tiers have low thresholds for impacts. The tiers run from Tier 3 (highest level) down to Tier 1 (lowest).

### 8.2.2 Applicability to the Proposed Project

There are no features on the project site that meet the definition of wetlands or other waters of the U.S. or waters of the State. Prior authorization from the RWQCB pursuant to Section 401 of the Clean Water Act is not required for the proposed project.

### 8.2.1 PORTER-COLOGNE WATER QUALITY CONTROL ACT

The uncontrolled discharge of pollutants into impaired water bodies is considered particularly detrimental. According to the EPA, **sediment is one of the most widespread pollutants contaminating U.S. rivers and streams**. Sediment runoff from construction sites is 10 to 20 times greater than from agricultural lands and 1,000 to 2,000 times greater than from forest lands (EPA 2005). Consequently, the discharge of stormwater from large construction sites is regulated by the RWQCB under the Clean Water Act and California's Porter-Cologne Water Quality Control Act.

The Porter-Cologne Water Quality Control Act, Water Code § 13260, requires that "any person discharging waste, or proposing to discharge waste, that could affect the waters of the State to file a report of discharge" with the RWQCB through an application for waste discharge (Water Code Section 13260(a)(1). The term "waters of the State" is defined as any surface water or groundwater, including saline waters, within the boundaries of the State (Water Code § 13050(e)). It should be noted that pursuant to the Porter-Cologne Water Quality Control Act, the RWQCB also regulates "isolated wetlands," or those wetlands considered to be outside of the Corps' jurisdiction (see Corps Section above).

The RWQCB generally considers filling in waters of the State to constitute "pollution." Pollution is defined as an alteration of the quality of the waters of the State by waste that unreasonably affects its beneficial uses (Water Code §13050(1)). The RWQCB litmus test for determining if a project should be regulated pursuant to the Porter-Cologne Water Quality Control Act is if the action could result in any "threat" to water quality.

The RWQCB requires complete pre- and post-development Best Management Practices (BMPs) for any portion of the project site that is developed. This means that a water quality treatment plan for the pre- and post-developed project site must be prepared and implemented. Preconstruction requirements must be consistent with the requirements of the National Pollutant Discharge Elimination System (NPDES). That is, a Stormwater Pollution Prevention Plan (SWPPP) must be developed prior to the time that a site is graded (see NPDES section below). In addition, a post construction BMPs plan, or a Stormwater Management Plan (SWMP) must be developed and incorporated into any site development plan.

### 8.2.2 APPLICABILITY TO THE PROPOSED PROJECT

The project site does not have a stormwater drainage system, and no municipal provision for stormwater management exists on the project site. Rather, the project site relies on natural flow to convey stormwater runoff. Therefore, when the property is developed, a stormwater management plan/program will need to be implemented to address storm water runoff and treatment. A stormwater management system (and sewer system) will need to be installed into the street rights-of-way, and tied into existing infrastructure. To the extent possible, the project should tie into any existing stormwater system owned and operated by the City of Manteca.

## 9. STATE WATER RESOURCES CONTROL BOARD (SWRCB)/RWQCB – STORMWATER MANAGEMENT

### 9.1 Construction General Permit

While federal Clean Water Act NPDES regulations allow two permitting options for construction related stormwater discharges (individual permits and General Permits), the SWRCB has elected to adopt only one statewide Construction General Permit at this time that will apply to all stormwater discharges associated with construction activity, except from those on Tribal Lands, in the Lake Tahoe Hydrologic Unit, and those performed by the CDFW of Transportation (CalTrans).

The Construction General Permit requires all dischargers where construction activity disturbs greater than one acre of land, or those sites less than one acre that are part of a common plan of development or sale that disturbs more than one acre of land surface, to:

1. Develop and implement a SWPPP which specifies BMPs that will prevent all construction pollutants from contacting stormwater with the intent of keeping all products of erosion from moving off site into receiving waters.

2. Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation. Achieve quantitatively-defined (i.e., numeric) pollutant-specific discharge standards, and conduct much more rigorous monitoring based on the project's projected risk level.

3. Perform inspections of all BMPs.

This Construction General Permit is implemented and enforced by the nine RWQCBs. It is also enforceable through citizens' suits and represents a dramatic shift in the SWRCB's approach to regulating new and redeveloped sites, imposing new affirmative duties and fixed standards on builders and developers.

Types of Construction Activity Covered by the Construction General Permit

- clearing,
- grading,
- disturbances to the ground such as stockpiling, or excavation that results in soil disturbances of at least one acre or more of total land area.

Construction activity that results in soil disturbances to a smaller area would still be subject to this General Permit if the construction activity is part of a larger common plan of development that encompasses greater than one acre of soil disturbance, or if there is significant water quality impairment resulting from the activity.

Construction activity does not include:

- routine maintenance to maintain original line and grade,

- hydraulic capacity, or original purpose of the facility,
- nor does it include emergency construction activities required to protect public health and safety.

The Construction General Permit includes several "post-construction" requirements. These requirements entail that site designs provide no net increase in overall site runoff and match pre-project hydrology by maintaining runoff volume and drainage concentrations. To achieve the required results where impervious surfaces such as roofs and paved surfaces are being increased, developers must implement non-structural off-setting BMPs such as landform grading, site design BMPs, and distributed structural BMPs (bioretention cells, rain gardens, and rain cisterns). This "runoff reduction" approach is essentially a SWRCB-imposed regulatory requirement to implement Low Impact Development ("LID") design features. Volume that cannot be addressed using non-structural BMPs must be captured in structural BMPs that are approved by the RWQCB.

Improving the quality of site runoff is necessary to improve water quality in impaired and threatened streams, rivers, and lakes (that is, water bodies on the EPA's 303(d) list). The RWQCB prioritizes the water bodies on the 303(d) list according to potential impacts to beneficial uses. Beneficial uses can include a wide range of uses, such as nautical navigation; wildlife habitat; fish spawning and migration; commercial fishing, including shellfish harvesting; recreation, including swimming, surfing, fishing, boating, beachcombing, and more; water supply for domestic consumption or industrial processes; and groundwater recharge, among other uses. The State is required to develop action plans and establish Total Maximum Daily Loads (TMDLs) to improve water quality within these impaired water bodies. The TMDL is the quantity of a pollutant that can be safely assimilated by a water body without violating the applicable water quality standards.

Pursuant to the Clean Water Act, the RWQCB regulates construction discharges under the NPDES. The project sponsor of construction, or of other activities that disturb more than one acre of land, must obtain coverage under NPDES Construction General Permit Order 2009-0009-DWQ, administered by the RWQCB[1].

#### 9.1.1 Applicability to The Proposed Project

To obtain coverage under the SWRCB administered Construction General Permit, the applicant (typically through its civil engineer) must electronically file a number of permit-related compliance documents Permit Registration Documents (PRDs), including a Notice of Intent (NOI), a risk assessment, site map, signed certification, SWPPP, Notice of Termination (NOT), NAL exceedance reports, and any other site-specific PRDs that may be required. The PRDs must be prepared by a Qualified SWPPP Practitioner (QSP) or Qualified SWPPP Developer (QSD) and filed by a Legally Responsible Person (LRP) on the RWQCB's Stormwater Multi-

[1] CGP Order 2009-0009-DWQ remains in effect, but has been amended by CGP Order 2009-0014-DWQ, effective February 14, 2011, and CGP Order 2009-0016-DWQ, effective July 17, 2012. The first amendment merely provided additional clarification to Order 2009-0009-DWQ, while Order 2009-0016-DWQ eliminated numeric effluent limits on pH and turbidity (except in the case of active treatment systems), in response to a legal challenge to the original order.

Application Report Tracking System (SMARTS) (QSDs are typically civil engineers, professional hydrologists, engineering geologists, or landscape architects). Once filed, these documents become immediately available to the public for review and comment. At a minimum, the SWPPP shall identify BMPs for implementation during project construction that are in accordance with the applicable guidance and procedures contained in the California Stormwater Quality Association's *California Stormwater Best Management Practices Handbook* (2015).

## 9.2 RWQCB Municipal Stormwater Permitting Programs

The federal Clean Water Act was amended in 1987 to address urban stormwater runoff pollution of the nation's waters. In 1990, the EPA promulgated rules establishing Phase 1 of the NPDES stormwater program. The Phase 1 program for Municipal Separate Storm Sewer System (MS4s) requires operators that serve populations of 100,000 or greater to implement a stormwater management program to control polluted discharges from these MS4s. While Phase 1 of the municipal stormwater program has focused on large urban areas, Phase 2 of the municipal stormwater program was promulgated by the EPA for smaller urban areas including non-traditional Small MS4s, which are governmental facilities such as military bases, public campuses, and prison and hospital complexes.

MS4 permits require the discharger (or dischargers that are permitted by the MS4 permittees) to develop and implement a SWMP with the goal of reducing the discharge of pollutants to the maximum extent practicable (MEP). MEP is the performance standard specified in Section 402(p) of the Clean Water Act. The management programs specify which BMPs will be used to address certain program areas. The program areas include public education and outreach; illicit discharge detection and elimination; construction and post-construction; and good housekeeping for municipal operations. In general, medium and large municipalities are required to conduct chemical monitoring, though small municipalities are not.

### 9.2.1 NPDES C.3 Requirements

The NPDES C.3 requirements went into effect for any project (public or private) that is "deemed complete" by the City or County (Lead Agency) on or after February 15, 2005, and which will result in the creation or replacement (other than normal maintenance) of at least 10,000 square feet of impervious surface area (roofs, streets, patios, parking lots, etc.). Provision C.3 requires the onsite treatment of stormwater prior to its discharge into downstream receiving waters. Note that these requirements are in addition to the existing NPDES requirements for erosion and sedimentation controls during project construction that are typically addressed through acquisition of coverage under the SWRCB administered Construction General Permit. The C.3 requirements are typically required to be implemented by MS4 permittees (and their constituencies).

Projects subject to Provision C3 must include the capture and onsite treatment of all stormwater from the site prior to its discharge, including rainwater falling on building rooftops. Project applicants are required to implement appropriate source control and site design measures, and to design and implement stormwater treatment measures in order to reduce the discharge of stormwater pollutants to the *maximum extent practicable.* While the Clean Water Act does not define "maximum extent practicable," the SWMPs required as a condition of the municipal

NPDES permits identify control measures (i.e., BMPs) and, where applicable, performance standards, to establish the level of effort required to satisfy the maximum extent practicable criterion. It is ultimately up to the professional judgment of the reviewing municipal staff in the individual jurisdictions to determine whether a project's proposed stormwater controls will satisfy the maximum extent practicable criterion. However, there are numeric criteria used to ensure that treatment BMPs have been adequately sized to accommodate and treat a site's stormwater. The C3 requirements are quite extensive, and their complete explanation is not provided here. However, the following are minimums that should be understood and adhered to:

- The applicant must provide a detailed and realistic site design *and impervious surface area calculations*. This site design *and calculations* will be used by the Lead Agency (County or City) to determine/*verify* the amount of impervious surface area that is being created or replaced. It should include all proposed buildings, roads, walkways, parking lots, landscape areas, etc., that are being created or redeveloped. If large (greater than 10,000 square feet) lots are being created, an effort will need to be made to determine the total impervious surface area that could be created on that parcel. For example, if only a portion of the lot is shown as a "building envelope," then the lead agency will need to consider that a driveway will have to be constructed to access the envelope, and that the envelope will then be developed as shown. If the C.3 thresholds are met (creation/redevelopment of 10,000 square feet of impervious surface area), a Stormwater Control Plan (SWCP) (if required by the Lead Agency), or whatever steps for compliance with Provision C3 are required locally, must accompany the application.

- If a SWCP is required by the Lead Agency for the project it must be stamped by a Licensed Civil Engineer, Architect, or Landscape Architect.

#### 9.2.2 Applicability to The Proposed Project

It is the applicant's responsibility to ensure that the project civil engineer prepares all required Stormwater Planning documents for submittal to the City of Manteca so that compliance with its MS4 permit requirements can be verified as reported to the RWQCB or as otherwise necessary to comply with the Clean Water Act NPDES requirements. The proposed project includes construction of bioretention basins located in the development's parklands to treat stormwater runoff prior to it being discharged offsite.

### 9.3 California Department of Fish and Wildlife Protections

#### 9.3.1 Section 1602 of California Fish and Game Code

Pursuant to Section 1602 of the California Fish and Game Code: "An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake, unless all of the following occur:

(1) CDFW receives written notification regarding the activity in the manner prescribed by CDFW. The notification shall include, but is not limited to, all of the following:

(A) A detailed description of the project's location and a map.
(B) The name, if any, of the river, stream, or lake affected.
(C) A detailed project description, including, but not limited to, construction plans and drawings, if applicable.
(D) A copy of any document prepared pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.
(E) A copy of any other applicable local, State, or federal permit or agreement already issued.
(F) Any other information required by CDFW" (Fish & Game Code 2018).

Please see Section 1602 of the current California Fish and Game Code for further details.

Please also note that while not stated in the regulations above, the CDFW typically considers its jurisdiction to include riparian vegetation (that is, the trees and bushes growing along the stream). Thus, any proposed activity in a natural stream channel that would substantially and adversely affect an existing fish and/or wildlife resource, including its riparian vegetation, would require entering into a Streambed Alteration Agreement (SBAA) with the CDFW prior to commencing work in the stream. However, prior to authorizing such permits, the CDFW typically reviews an analysis of the expected biological impacts, any proposed mitigation plans that would be implemented to offset biological impacts and engineering and erosion control plans.

#### 9.3.2 Applicability to The Proposed Project

There are no streams or drainages on or adjacent to the project site. Hence, prior authorization from the CDFW pursuant to Section 1602 of California Fish and Game Code should not be necessary for this project.

## 10. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) REGULATIONS

A CEQA lead agency must determine if a proposed activity constitutes a project requiring further review pursuant to the CEQA. Pursuant to CEQA, a lead agency would have to determine if there could be significant adverse impacts to the environment from a proposed project. Typically, if within the city limits, the city would be the CEQA lead agency. If a discretionary permit (i.e., conditional use permit) would be required for a project (e.g. an occupancy permit must be issued), the lead agency typically must determine if there could be significant environmental impacts. This is usually accomplished by an "Initial Study." If there could be significant environmental impacts, the lead agency must determine an appropriate level of environmental review prior to approving and/or otherwise permitting the impacts. In some cases, there are "Categorical Exemptions" that apply to the proposed activity; thus the activity is exempt from CEQA. The Categorical Exemptions are provided in CEQA. There are also Statutory Exemptions in CEQA that must be investigated for any proposed project. If the project is not exempt from CEQA, the lowest level of review typically reserved for projects with no significant effects on the environment would be for the lead agency to prepare a "Negative Declaration." If a proposed project would have only minimal impacts that can be mitigated to a level of no significance pursuant to the CEQA, then a "Mitigated Negative Declaration" (MND) is typically prepared by the lead agency. Finally, those projects that may have significant effects on the environment, or that have impacts that can't be mitigated to a level considered less than

significant pursuant to the CEQA, typically must be reviewed via an Environmental Impact Report (EIR). All CEQA review documents are subject to public circulation and comment periods.

Section 15380 of CEQA defines "endangered" species as those whose survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors. "Rare" species are defined by CEQA as those who are in such low numbers that they could become endangered if their environment worsens; or the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in FESA. The CEQA Guidelines also state that a project will normally have a significant effect on the environment if it will "substantially affect a rare or endangered species of animal or plant or the habitat of the species." The significance of impacts to a species under CEQA, therefore, must be based on analyzing actual rarity and threat of extinction to that species despite its legal status or lack thereof.

### 10.1.1 Applicability to the Proposed Project

This report has been prepared as a Biology Section that is suitable for incorporation into the biology section of a CEQA review document such as a Mitigated Negative Declaration or EIR. This document addresses potential impacts to species that would be defined as endangered or rare pursuant to Section 15380 of the CEQA. This document is suitable for use by the CEQA lead agency (in this case City of Manteca) for preparation of any CEQA review document prepared for the proposed project.

# 11. IMPACTS ANALYSIS

In this section we discuss potential impacts to sensitive biological resources including special-status species. We follow each impact with a mitigation prescription that when implemented would reduce impacts to the greatest extent possible.

## 11.1 Significance Criteria

A significant impact is determined using CEQA and CEQA Guidelines. Pursuant to CEQA §21068, a significant effect on the environment means a substantial, or potentially substantial, adverse change in the environment. Pursuant to CEQA Guideline §15382, a significant effect on the environment is further defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. Other federal, State, and local agencies' considerations and regulations are also used in the evaluation of significance of proposed actions.

Direct and indirect adverse impacts to biological resources are classified as "significant," "potentially significant," or "less than significant." Biological resources are broken down into four categories: vegetation, wildlife, threatened and endangered species, and regulated "waters of the United States" and/or stream channels.

### 11.1.1 THRESHOLDS OF SIGNIFICANCE

#### 11.1.1.1 Plants, Wildlife, Waters

In accordance with Appendix G (Environmental Checklist Form) of the CEQA Guidelines, implementing the project would have a significant biological impact if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS.

- Have a substantial adverse effect on state or federally protected "wetlands" (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

- Conflict with the provisions of an adopted HCP, Natural Community Conservation Plan, or other approved local, regional, or State HCP.

11.1.1.2 Waters of the United States and State.

Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), the Corps regulates the discharge of dredged or fill material into waters of the U.S., which includes wetlands, as discussed in the bulleted item above, and also includes "other waters" (stream channels, rivers) (33 CFR Parts 328 through 330). Substantial impacts to Corps regulated areas on a project site would be considered a significant adverse impact. Similarly, pursuant to Section 401 of the Clean Water Act, and to the Porter-Cologne Water Quality Control Act, the RWQCB regulates impacts to waters of the State. Thus, substantial impacts to RWQCB regulated areas on a project site would also be considered a significant adverse impact.

11.1.1.3 Stream Channels

Pursuant to Section 1602 of the California Fish and Game Code, the CDFW regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream which the CDFW typically considers to include riparian vegetation. Any proposed activity that would result in substantial modifications to a natural stream channel would be considered a significant adverse impact.

## 12. IMPACT ASSESSMENT AND PROPOSED MITIGATION

In this section we discuss potential impacts to sensitive biological resources including nesting passerine birds and open space areas. We follow each impact with a mitigation prescription that when implemented would reduce impacts to the greatest extent possible. This impact analysis is based on a tentative map provided by Raney Planning & Management in November 2020.

Appendix G, CEQA Checklist Items are listed below. Where there would be significant impacts to checklist categories, these impacts and required mitigation measures are fully discussed in the sections below.

***Would the Proposed Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS?***

No, aside from the project potentially impacting nesting birds which are protected under the federal Migratory Bird Treaty Act and California Fish and Game Code, no species identified as a candidate, sensitive, or special-status will be impacted by the proposed project. See the impacts and mitigations detailed below.

***Would the Proposed Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS?***

No. There is no riparian habitat or sensitive natural community on the project site that has been identified in local or regional plans, policies, regulations, or by the CDFW or USFWS.

Therefore, the Proposed Project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community.

***Would the Proposed Project have a substantial adverse effect on state or federally protected "wetlands" (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?***

No. There are no jurisdictional waters on the project site, including wetlands.

***Would the Proposed Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?***

No. The Proposed Project would not adversely impact or interfere with wildlife movement corridors. The majority of the project site is under intensive agricultural use and where it is not in agricultural use there is an existing residence. There are no local or regional wildlife corridors on or adjacent to the project site. There are no wildlife nursery sites. No impact is expected.

***Would the Proposed Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?***

No. There are no local policies or ordinances with which this project would conflict.

***Would the Proposed Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan****?*

No. Currently the project is not in conflict with the SJMSCP since it is not within the mapped area of the SJMSCP. Once the project is annexed into the City of Manteca, the San Joaquin County Council of Governments (SJCOG) will enact coverage under the SJMSCP.

### 12.1 Impact 1. The Project May Impact Nesting Passerine Birds (Potentially Significant)

If project site grubbing, grading, or construction takes place between February 1 and August 31, which is the nesting season, nesting passerine birds (that is, perching birds) could be impacted by the proposed project. Birds and their nests are protected under California Fish and Game Code (Sections 3503, 3503.5, 3513), and the Migratory Bird Treaty Act. Impacts to nesting birds, their eggs, and/or young resulting from the proposed project would be regarded as potentially significant pursuant to the CEQA. These impacts could be mitigated to a level considered less than significant.

Since typically most birds can fly out of harm's way, development of the project site would not be expected to harm adult birds. However, nesting birds are susceptible to take through disturbance that harms eggs or young. The project proponent can avoid impacts to nesting birds by conducting preconstruction nesting surveys and implementing nesting bird avoidance measures. The Impacts and Mitigations Section below presents avoidance measures that can be

implemented to ensure that the proposed project does not result in any violation of the Migratory Bird Treaty act, and otherwise that the project will remain in compliance with Fish and Game Code that protects nesting birds.

### 12.2 Mitigation Measure 1. Nesting Passerine Birds

A nesting bird survey should be conducted on the project site and within a zone of influence around the project site. The zone of influence includes those areas off the project site where nesting birds could be deleteriously disturbed by earth-moving vibrations, noise, or tree and/or building removal. Accordingly, the nesting survey(s) must cover the project site and an area around the project site boundary. If project site disturbance associated with the project would commence between March 1 and September 1st ("the nesting season") the nesting surveys should be completed 15 days prior to commencing with ground or vegetation disturbance. If common (that is, not special-status) bird species, for example, California Towhee (*Melozone crissalis*), California Scrub-Jay (*Aphelocoma californica*), or Acorn Woodpecker(*Melanerpes formicivorus*) are identified nesting on or adjacent to the project site, a non-disturbance buffer of 75 feet should be established or as otherwise prescribed by a qualified ornithologist. The buffer should be demarcated with painted orange lath and the installation of orange construction fencing. All disturbance within the buffer should be postponed until it is determined by a qualified ornithologist that the young have fledged and have attained sufficient flight skills to leave the area or that the nesting cycle has otherwise completed.

Typically, most birds nesting in the region of the project site are expected to complete nesting by August 1st. However, many species can complete nesting by the end of June or in early to mid-July. Regardless, nesting buffers should be maintained until September 1st unless a qualified ornithologist determines that young have fledged and are independent of their nests at an earlier date. If buffers are removed prior to September 1st, the qualified ornithologist conducting the nesting surveys should prepare a report that provides details about the nesting outcome and the removal of buffers. This report should be submitted to the City of Manteca prior to the time that nest protection buffers are removed if the date is before September 1st. After birds complete their nesting cycle and are deemed independent of their nests by a qualified ornithologist, no further actions are necessary to protect the nest site.

This mitigation measure would reduce impacts to nesting common bird species to a level considered **less than significant**.

### 12.3 Impact 2. The Development Project Conflicts with the Provisions an Adopted Habitat Conservation Plan (the SJMSCP) (Significant)

In accordance with Appendix G (Environmental Checklist Form) of the CEQA Guidelines, implementing the project would have a significant biological impact if it would:

*Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.*

The majority of the project site is agricultural, planted with grapes. The only exception is where the existing 20,000 square foot home and associated landscaping occurs on the project site.

Implementation of the proposed project would result in the conversion of approximately 184 acres of existing agricultural land (and an existing residence) into residential housing, a school, and parkland. Pursuant to the SJMSCP, conversion of agricultural land would be viewed by SJCOG as a loss of open space that otherwise provides support to wildlife communities in San Joaquin County. Currently the project is not in conflict with the SJMSCP since it is not within the mapped area of the SJMSCP. Regardless, the project site will be annexed into the SJMSCP to otherwise account for the loss of open space lands that may otherwise support common wildlife species.

### 12.4 Mitigation Measure 2. SJMSCP Conflicts

The proposed project is not in conflict with the provisions of a (regional) Habitat Conservation Plan since the project site is outside of the "covered area" of the SJMSCP. Regardless, the City of Manteca along with the CDFW, the USFWS, and with the San Joaquin Council of Governments (SJCOG), determined that the loss of general open space lands could be deleterious to special-status species and is deleterious to open spaces that otherwise support common wildlife species. As a condition for development of the proposed project the land will be annexed into the City of Manteca therefore enacting coverage under the SJMSCP. The SJMSCP will be used to compensate for general impacts to open space. Once in the covered area the applicant will then pay a fee to the City of Manteca to use the SJMSCP to mitigate this impact to a *less than significant* level since the fees are used by the SJCOG to otherwise preserve similar open space lands in perpetuity.

## 13. CUMULATIVE IMPACTS

The proposed project would contribute to the loss of general open space lands that support common wildlife species in the region of the project site. Given the amount and extent of similar agricultural lands that constitute open space in the area of the project site that are not proposed to be converted to residential housing, the cumulative loss of agricultural open space lands does not rise to a level regarded as a significant impact to plants or animals pursuant to the CEQA.

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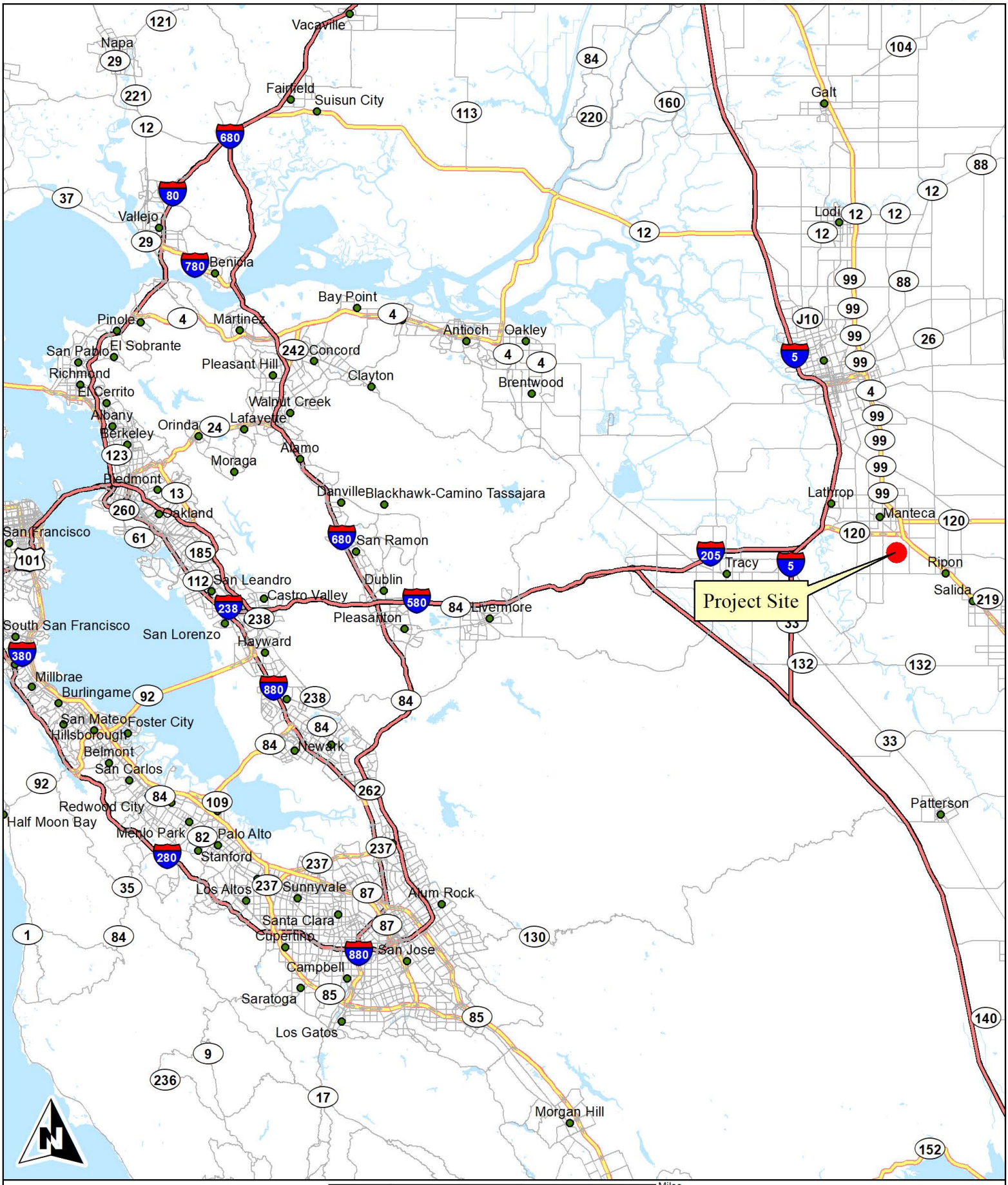
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Figure 1. Hat Ranch Project Site
Regional Map
Manteca, California

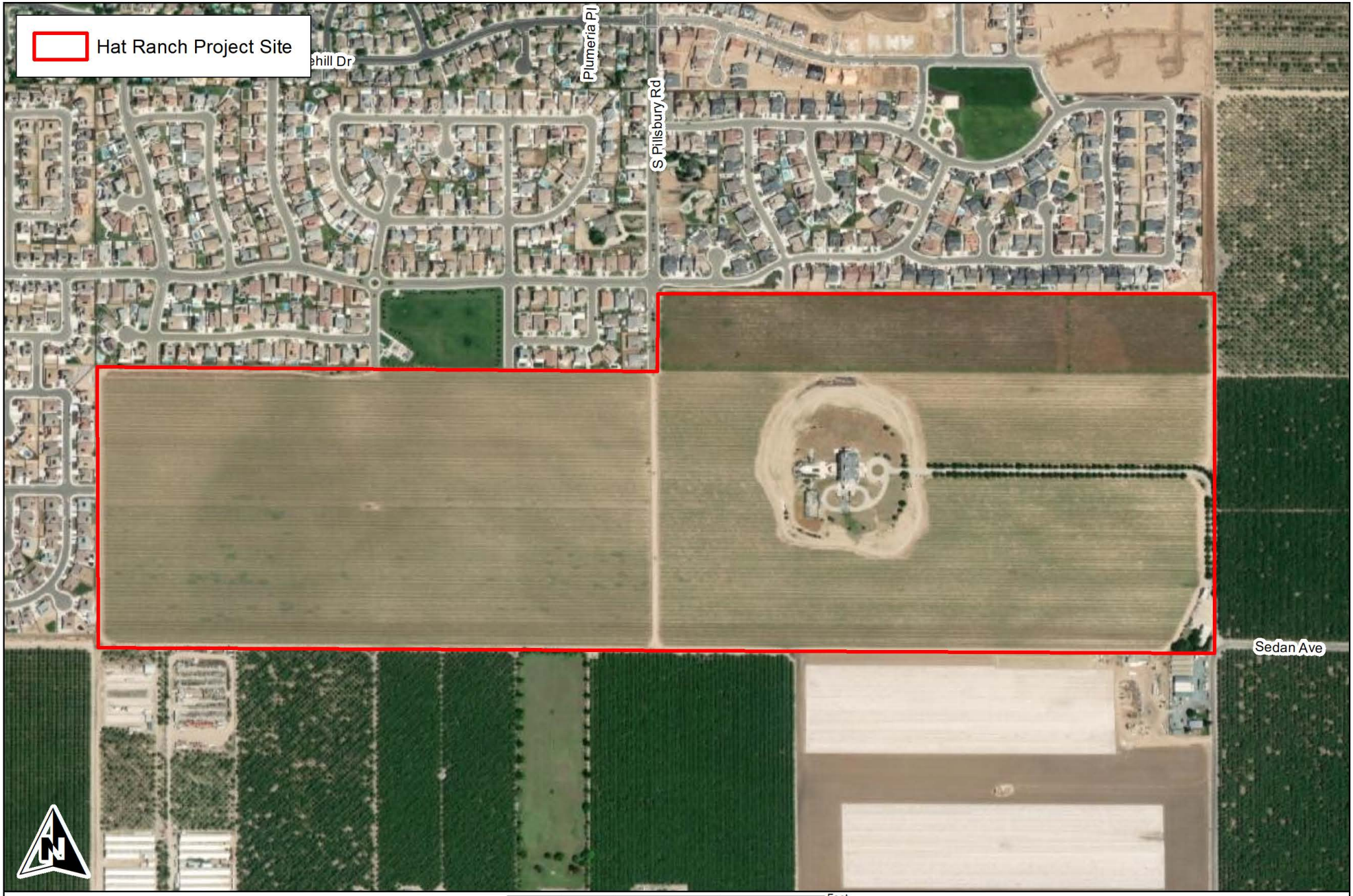
County: San Joaquin
Map Preparation Date: August 17, 2020




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Figure 2. Hat Ranch Project Site
Location Map
Manteca, California

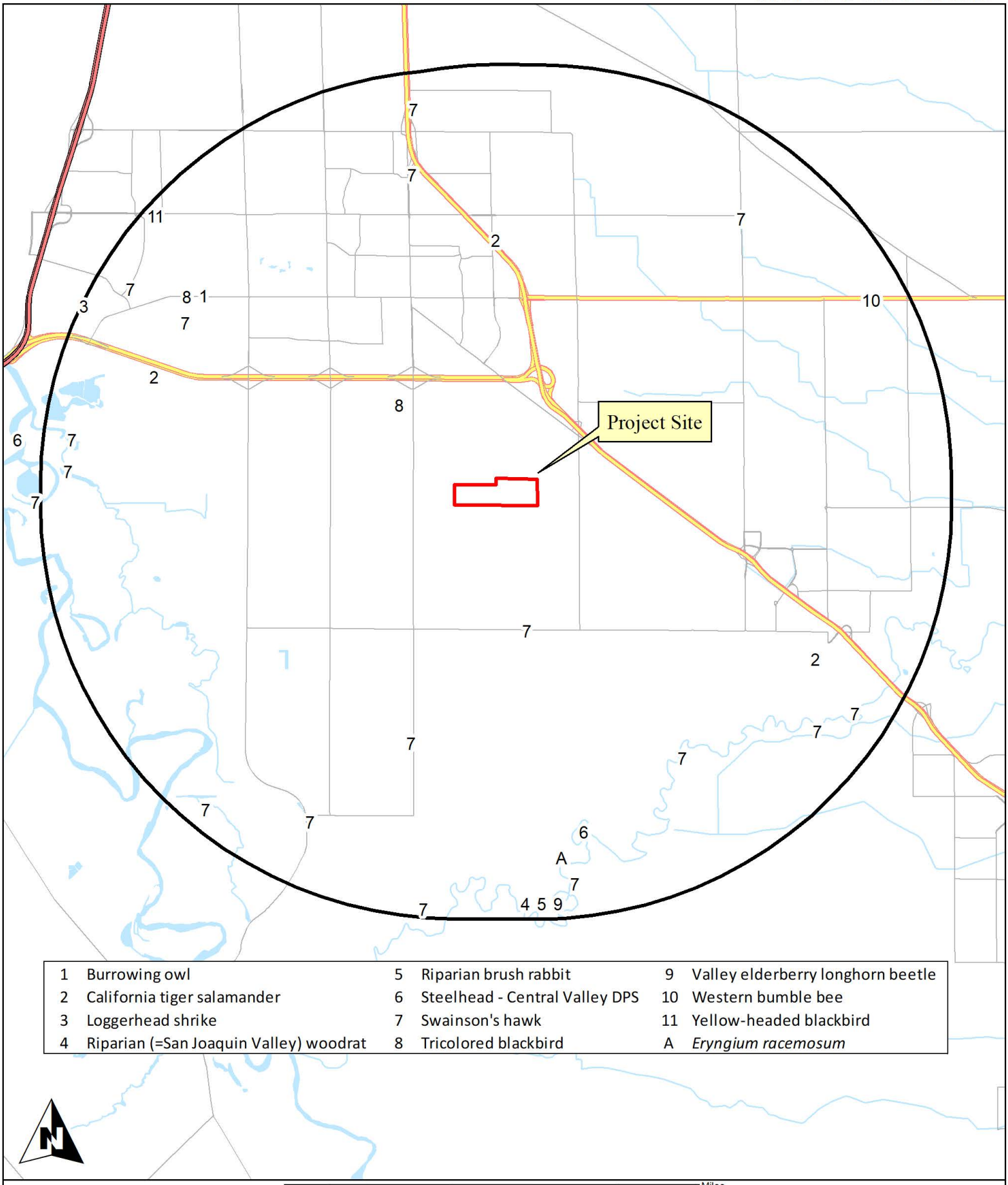
37.763036 -121.196616
7.5-Minute Manteca quadrangle
Section 16, 5: T2S R7E
Aerial Photograph Source: ESRI
Map Preparation Date: August 17, 2020




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Figure 3. Aerial Photograph of the
Hat Ranch Project Site
Manteca, California

Aerial Photograph Source: ESRI
Map Preparation Date: August 17, 2020




| | | | | | |
|---|---|---|---|---|---|
| 1 | Burrowing owl | 5 | Riparian brush rabbit | 9 | Valley elderberry longhorn beetle |
| 2 | California tiger salamander | 6 | Steelhead - Central Valley DPS | 10 | Western bumble bee |
| 3 | Loggerhead shrike | 7 | Swainson's hawk | 11 | Yellow-headed blackbird |
| 4 | Riparian (=San Joaquin Valley) woodrat | 8 | Tricolored blackbird | A | *Eryngium racemosum* |

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0 0.5 1 2 3 4 5 Miles

Figure 4. Known Special-Status CNDDB Species within 5 Miles of the Hat Ranch Project Site

Map Preparation Date:
December 1, 2020
5-Mile Radius
Source: CDFW, California Natural Diversity Data Base, 2020

# Table 1

## Plant Species Observed at the Hat Ranch Project Site

### Gymnosperms

#### Cupressaceae

| | |
|---|---|
| *Sequoia sempervirens* | Redwood |

#### Pinaceae

| | |
|---|---|
| *Pinus radiata* | Monterey pine |

### Angiosperms - Dicots

#### Araliaceae

| | |
|---|---|
| **Hedera helix* | English ivy |

#### Asteraceae

| | |
|---|---|
| **Helianthus maximillianii* | Maximillian's sunflower |
| **Taraxacum officinale* | Common dandelion |

#### Brassicaceae

| | |
|---|---|
| **Hirschfeldia incana* | Short-podded mustard |

#### Ericaceae

| | |
|---|---|
| *Arbutus unedo compacta* | Dwarf strawberry tree |

#### Fagaceae

| | |
|---|---|
| *Quercus agrifolia var. agrifolia* | Coast live oak |

#### Geraniaceae

| | |
|---|---|
| **Erodium cicutarium* | Red-stem filaree |

#### Lythraceae

| | |
|---|---|
| **Punica granatum* | Pomegranate |

#### Molluginaceae

| | |
|---|---|
| **Mollugo verticillata* | Indian chickweed |

#### Onagraceae

| | |
|---|---|
| *Epilobium brachycarpum* | Summer cottonweed |

#### Rosaceae

| | |
|---|---|
| **Prunus armeniaca* | Apricot |

#### Rutaceae

| | |
|---|---|
| **Citrus sp.* | orange tree |

#### Salicaceae

| | |
|---|---|
| *Populus fremontii subsp. fremontii* | Fremont cottonwood |

#### Solanaceae

| | |
|---|---|
| **Solanum sp.* | Nightshade |

#### Vitaceae

| | |
|---|---|
| **Vitis vinifera* | Cultivated grape |

#### Zygophyllaceae

| | |
|---|---|
| **Tribulus terrestris* | Puncture vine |

* Indicates a non-native species

## Table 1

## Plant Species Observed at the Hat Ranch Project Site

### Angiosperms -Monocots

#### Cyperaceae

| | |
|---|---|
| *Cyperus eragrostis* | Tall flatsedge |

#### Poaceae

| | |
|---|---|
| **Avena barbata* | Slender wild oat |
| **Bromus diandrus* | Ripgut grass |
| **Bromus hordeaceus* | Soft chess |
| **Digitaria sanguinalis* | Hairy crabgrass |
| **Panicum miliaceum subsp. miliaceum* | Broom corn millet |

* Indicates a non-native species

## Table 2
## Wildlife Species Observed on the Hat Ranch Project Site

| | |
|---|---|
| **Birds** | |
| Northern harrier | *Circus hudsonius* |
| Red-tailed hawk | *Buteo jamaicensis* |
| California quail | *Callipepla californica* |
| Killdeer | *Charadrius vociferus* |
| Mourning dove | *Zenaida macroura* |
| Anna's hummingbird | *Calypte anna* |
| Black phoebe | *Sayornis nigricans* |
| California scrub jay | *Aphelocoma californica* |
| Bewick's wren | *Thryomanes bewickii* |
| Northern mockingbird | *Mimus polyglottos* |
| Yellow warbler | *Setophaga petechia* |
| Townsend's warbler | *Setophaga townsendi* |
| Golden-crowned sparrow | *Zonotrichia atricapilla* |
| House finch | *Haemorhous mexicanus* |
| Lesser goldfinch | *Spinus psaltria* |
| **Mammals** | |
| Coyote (scat) | *Canis latrans* |
| Audubon's cottontail | *Sylvilagus audubonii* |
| Domestic dog | *Canis familiaris* |
| Raccoon | *Procyon lotor* |

# Table 3

## Special Status Plant Species Within the Vicinity of the Hat Ranch Project Site.

| Family<br>Taxon<br>Common Name | Status* | Flowering Period | Habitat | Area Locations | Probability on Project Site |
|---|---|---|---|---|---|
| **Alismataceae** | | | | | |
| *Sagittaria sanfordii*<br>Sanford's arrowhead | Fed: -<br>State: -<br>CNPS: Rank 1B | May-October | Marshes and swamps (assorted shallow freshwater). | CNPS 9 Quad Search. | None. No riparian habitat, seasonal wetlands, or vernal pools occur on or adjacent to the project site. Entire site is covered with vineyard or landscaped. No impact expected. |
| **Apiaceae** | | | | | |
| *Eryngium racemosum*<br>Delta button-celery | Fed: -<br>State: CE<br>CNPS: Rank 1B.1 | June-August | Riparian scrub (vernally mesic clay depressions). | Closest known record for this species is located approximately 4.4 miles south of the project site. (Occurrence No. 5) | None. No riparian habitat, seasonal wetlands, or vernal pools occur on or adjacent to the project site. Entire site is covered with vineyard or landscaped. No impact expected. |
| **Asteraceae** | | | | | |
| *Blepharizonia plumosa*<br>Big tarplant | Fed: -<br>State: -<br>CNPS: Rank 1B.1 | July-October | Valley and foothill grassland. | CNPS 9 Quad Search. | None. No scub or grassland occur on or adjacent to the project site. Entire site is covered with vineyard or landscaped. No impact expected. |
| *Centromadia parryi rudis*<br>Parry's red tarplant | Fed: -<br>State: -<br>CNPS: Rank 4 | May-October | Valley and foothill grassland (vernal pools; seeps and other wet areas (alkaline) | CNPS 9 Quad Search. | None. No riparian habitat, seasonal wetlands, or vernal pools occur on or adjacent to the project site. Entire site is covered with vineyard or landscaped. No impact expected. |
| *Cirsium crassicaule*<br>Slough thistle | Fed: -<br>State: -<br>CNPS: Rank 1B | May-August | Chenopod scrub; marshes and swamps (sloughs); riparian scrub. | CNPS 9 Quad Search. | None. No riparian habitat, seasonal wetlands, or vernal pools occur on or adjacent to the project site. Entire site is covered with vineyard or landscaped. No impact expected. |
| *Symphyotrichum lentum*<br>Suisun Marsh aster | Fed: -<br>State: -<br>CNPS: Rank 1B.2 | August-November | Marshes and swamps (brackish and fresh water) | CNPS 9 Quad Search. | None. No riparian habitat, seasonal wetlands, or vernal pools occur on or adjacent to the project site. Entire site is covered with vineyard or landscaped. No impact expected. |

# Table 3

## Special Status Plant Species Within the Vicinity of the Hat Ranch Project Site.

| Family<br>Taxon<br>Common Name | Status* | Flowering Period | Habitat | Area Locations | Probability on Project Site |
|---|---|---|---|---|---|
| *Trichocoronis wrightii wrightii*<br>Wright's trichocoronis | Fed: -<br>State: -<br>CNPS: Rank 2 | May-September | Meadows; marshes and swamps; riparian forest; venal pools; [alkaline]. | CNPS 9 Quad Search. | None. No riparian habitat, seasonal wetlands, or vernal pools occur on or adjacent to the project site. Entire site is covered with vineyard or landscaped. No impact expected. |
| **Cabombaceae** | | | | | |
| *Brasenia schreberi*<br>Watershield | Fed: -<br>State: -<br>CNPS: Rank 2.3 | June-September | Marshes and swamps (freshwater). | CNPS 9 Quad Search. | None. No riparian habitat, seasonal wetlands, or vernal pools occur on or adjacent to the project site. Entire site is covered with vineyard or landscaped. No impact expected. |
| **Chenopodiaceae** | | | | | |
| *Atriplex cordulata cordulata*<br>Heartscale | Fed: -<br>State: -<br>CNPS: Rank 1B.2 | April-October | Meadows and seeps; chenopod scrub; valley and foothill grassland (sandy); [saline or alkaline]. | CNPS 9 Quad Search. | None. No riparian habitat, seasonal wetlands, or vernal pools occur on or adjacent to the project site. Entire site is covered with vineyard or landscaped. No impact expected. |
| *Atriplex coronata coronata*<br>Crownscale | Fed: -<br>State: -<br>CNPS: Rank 4 | April-October | Chenopod scrub; valley and foothill grassland; vernal pools; [alkaline]. | CNPS 9 Quad Search. | None. No riparian habitat, seasonal wetlands, or vernal pools occur on or adjacent to the project site. Entire site is covered with vineyard or landscaped. No impact expected. |
| *Atriplex minuscula*<br>Lesser saltbush | Fed: -<br>State: -<br>CNPS: Rank 1B.1 | May-October | Chenopod scrub; playas; valley and foothill grassland [alkaline]. | CNPS 9 Quad Search. | None. No scub or grassland occur on or adjacent to the project site. Entire site is covered with vineyard or landscaped. No impact expected. |
| *Extriplex joaquinana*<br>San Joaquin spearscale | Fed: -<br>State: -<br>CNPS: Rank 1B.2 | April-October | Chenopod scrub; meadows; valley and foothill grassland; [alkaline]. | CNPS 9 Quad Search. | None. No scub or grassland occur on or adjacent to the project site. Entire site is covered with vineyard or landscaped. No impact expected. |

# Table 3

## Special Status Plant Species Within the Vicinity of the Hat Ranch Project Site.

| Family<br>Taxon<br>Common Name | Status* | Flowering Period | Habitat | Area Locations | Probability on Project Site |
|---|---|---|---|---|---|
| **Fabaceae** | | | | | |
| *Astragalus tener tener*<br>Alkali milkvetch | Fed: -<br>State: -<br>CNPS: Rank 1B.2 | March-June | Playas; mesic grasslands (adobe clay), vernal pools (alkaline). | CNPS 9 Quad Search. | None. No riparian habitat, seasonal wetlands, or vernal pools occur on or adjacent to the project site. Entire site is covered with vineyard or landscaped. No impact expected. |
| *Lathyrus jepsonii jepsonii*<br>Delta tule pea | Fed: -<br>State: -<br>CNPS: Rank 1B.2 | May-September | Marshes and swamps (freshwater and brackish). | CNPS 9 Quad Search. | None. No riparian habitat, seasonal wetlands, or vernal pools occur on or adjacent to the project site. Entire site is covered with vineyard or landscaped. No impact expected. |
| *Trifolium hydrophilum*<br>Saline clover | Fed: -<br>State: -<br>CNPS: Rank 1B.2 | April-June | Marshes and swamps; valley and foothill grassland (mesic, alkaline); vernal pools. 0-300 m. | CNPS 9 Quad Search. | None. No riparian habitat, seasonal wetlands, or vernal pools occur on or adjacent to the project site. Entire site is covered with vineyard or landscaped. No impact expected. |
| **Malvaceae** | | | | | |
| *Hibiscus lasiocarpos occidentalis*<br>Woolly rose-mallow | Fed: -<br>State: -<br>CNPS: Rank 1B.2 | June-September | Marshes and swamps (freshwater). | CNPS 9 Quad Search. | None. No riparian habitat, seasonal wetlands, or vernal pools occur on or adjacent to the project site. Entire site is covered with vineyard or landscaped. No impact expected. |
| **Orobanchaceae** | | | | | |
| *Chloropyron palmatum*<br>Palmate bracted bird's beak | Fed: FE<br>State: CE<br>CNPS: Rank 1B.1 | May-October | Chenopod scrub; valley and foothill grassland; (alkaline). | CNPS 9 Quad Search. | None. No scub or grassland occur on or adjacent to the project site. Entire site is covered with vineyard or landscaped. No impact expected. |

# Table 3

## Special Status Plant Species Within the Vicinity of the Hat Ranch Project Site.

| Family<br>Taxon<br>Common Name | Status* | Flowering Period | Habitat | Area Locations | Probability on Project Site |
|---|---|---|---|---|---|
| **Poaceae** | | | | | |
| *Puccinellia simplex*<br>California alkali grass | Fed:<br>State:<br>CNPS: Rank 1B.2 | March-June | Meadows and seeps, chenopod scrub, valley and foothill grasslands, vernal pools. Alkaline, vernally mesic. Sinks, flats, and lake margins. 1-915 m. | CNPS 9 Quad Search. | None. No riparian habitat, seasonal wetlands, or vernal pools occur on or adjacent to the project site. Entire site is covered with vineyard or landscaped. No impact expected. |
| **Ranunculaceae** | | | | | |
| *Delphinium recurvatum*<br>Recurved larkspur | Fed: -<br>State: -<br>CNPS: Rank 1B.2 | March-June | Chenopod scrub; cismontane woodland; valley and foothill grassland; [alkaline]. | CNPS 9 Quad Search. | None. No scub or grassland occur on or adjacent to the project site. Entire site is covered with vineyard or landscaped. No impact expected. |

***Status**

Federal:
FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate

State:
CE - California Endangered
CT - California Threatened
CR - California Rare
CC - California Candidate
CSC - California Species of Special Concern

CNPS:
Rank 1A - Presumed extinct in California
Rank 1B - Plants rare, threatened, or endangered in California and elsewhere
Rank 1B.1 - Seriously endangered in California (over 80% occurrences threatened/ high degree and immediacy of threat)
Rank 1B.2 - Fairly endangered in California (20-80% occurrences threatened)
Rank 1B.3 - Not very endangered in California (<20% of occurrences threatened or no current threats known)

CNPS Continued:
Rank 2 - Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 2A - Extirpated in California, common elsewhere
Rank 2B.1 - Seriously endangered in California, but more common elsewhere
Rank 2B.2 - Fairly endangered in California, but more common elsewhere
Rank 2B.3 - Not very endangered in California, but more common elsewhere
Rank 3 - Plants about which we need more information (Review List)
Rank 3.1 - Plants about which we need more information (Review List) Seriously endangered in California
Rank 3.2 - Plants about which we need more information (Review List) Fairly endangered in California
Rank 4 - Plants of limited distribution - a watch list

# Table 4

## Special Status Wildlife Within 5 Miles of the Hat Ranch Project Site

| Species | *Status | Habitat | Closest Locations | Probability on Project Site |
|---|---|---|---|---|
| **Insects** | | | | |
| Western bumble bee<br>*Bombus occidentalis* | Fed:<br>State: CC<br>Other: | Confined to high elevation sites and north coast. Inhabits grassland with select food plants: Melilotus, Cirsium, Trifolium, Centaurea, Chrysothamnus, and Eriogonum. Typically nests underground in abandoned rodent burrows or other cavities. | Closest record for this species is located approximately 4.7 miles northeast of the project site (Occurrence No.235). | None. No habitat occurs on or adjacent to the project sites. Entire site is planted with grapes or landscaped. |
| Valley elderberry longhorn beetle<br>*Desmocerus californicus dimorphus* | Fed: FT<br>State: -<br>Other: | Riparian and other habitats with elderberries (Sambucus sp.). Prefers shrubs with stems 1 to 5 inches in diameter. | Closest record for this species is located approximately 4.6 miles south of the project sites (Occurrence No. 45). | None. No riparian habitat or elderberry plants occur on or adjacent to the project sites. Entire site is planted with grapes or landscaped. |
| **Fish** | | | | |
| Steelhead - California Central Valley ESU<br>*Oncorhynchus mykiss* | Fed: FT<br>State: -<br>Other: | Found in the Sacramento and San Joaquin Rivers and their tributaries. Migrates through the estuary to spawning grounds. Eggs are laid in small and medium gravel and need a good water flow to survive. | Closest record for this species is located approximately 4.1 miles south of the project site (Occurrence No.20). | None. No water ways or wetlands occur on or adjacent to the project site. Entire site is planted with grapes or landscaped. |
| **Amphibians** | | | | |
| California tiger salamander (So Co DPS)<br>*Ambystoma californiense* | Fed: FE<br>State: CT<br>Other: | Found in grassland habitats of the valleys and foothills. Requires burrows for aestivation and standing water until late spring (May) for larvae to metamorphose. | Closest record for this species is a larval sighting in a pond located approximately 4.0 miles west of the project site (Occurrence No.37). | None. No suitable upland aestivation or open water habitat occurs on or adjacent to the project site. Entire site is planted with grapes or landscaped. |
| **Birds** | | | | |
| Swainson's hawk<br>*Buteo swainsoni* | Fed: -<br>State: CT<br>Other: | Migratory and resident raptor that breeds in open areas with scattered trees. Prefers riparian and sparse oak woodland habitats for nesting. Requires nearby grasslands, grain fields, or alfalfa for foraging. | Closest record for this species is located approximately 1.6 miles south of the project sites (Occurrence No. 2434). | None. No trees of suitable size for nesting occur on or adjacent to the project site. No foraging habitat - all vineyard. |

# Table 4

## Special Status Wildlife Within 5 Miles of the Hat Ranch Project Site

| Species | *Status | Habitat | Closest Locations | Probability on Project Site |
|---|---|---|---|---|
| Western burrowing owl<br>*Athene cunicularia hypugaea* | Fed: --<br>State: CSC<br>Other: | Found in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel. | Closest record for this species is located approximately 4.1 miles northwest of the project site (Occurrence No.251). | None. No suitable habitat occurs on or adjacent to the project site. No burrows were observed on the project site during the September 2020 survey. |
| Loggerhead shrike<br>*Lanius ludovicianus* | Fed: --<br>State: CSC<br>Other: | Found in broken woodlands, shrubland, and other habitats. Prefers open country with scattered perches for hunting and fairly dense brush for nesting. | Closest record for this species is located approximately 5 miles northwest of the project site (Occurrence No.112). | None. No suitable breeding habitat occurs on the project site. Regardless, preconstruction nesting bird surveys will be conducted. |
| Yellow warbler<br>*Setophaga petechia* | Fed: -<br>State: CSC<br>Other: | Found in riparian habitats with willows, cottonwoods, sycamores, and alders for nesting and foraging. | Two individuals were observed during a previous survey conducted by M&A in September 2013. | None. No suitable breeding habitat occurs on the project site. Regardless, preconstruction nesting bird surveys will be conducted. |
| Tricolored blackbird<br>*Agelaius tricolor* | Fed: -<br>State: CT<br>Other: - | Colonial nester in dense cattails, tules, brambles or other dense vegetation. Requires open water, dense vegetation, and open grassy areas for foraging. | Closest record for this species is located approximately 1.5 miles northwest of the project sites (Occurrence No. 100). | None. No open water or emergent marsh vegetation occur on or adjacent to the project sites. Entire site is planted with grapes or landscaped. |
| Yellow-headed blackbird<br>*Xanthocephalus xanthocephalus* | Fed: -<br>State: -<br>Other: | Nests in freshwater emergent wetlands with dense vegetation and deep water. Often along borders of lakes or ponds. | An historic (1894) record for this species is located approximately 5.0 miles west of the project sites (Occurrence No. 5). | None. No open water or wetlands occur on or adjacent to the project site. Entire site is planted with grapes or landscaped. |
| **Mammals** | | | | |
| Riparian brush rabbit<br>*Sylvilagus bachmani riparius* | Fed: FE<br>State: CE<br>Other: | There are only three known populations of this subspecies. One population occurs in Caswell Memorial State Park in Stanislaus County, two populations occur in San Joaquin County. One in Paradise Cut. And in a SJRiver oxbow west of the City of Lathrop. | Closest record for this species is located approximately 4.6 miles south of the project sites (Occurrence No. 2). | None. No riparian habitat occurs on or adjacent to the project site. Entire site is planted with grapes or landscaped. |

# Table 4

## Special Status Wildlife Within 5 Miles of the Hat Ranch Project Site

| Species | *Status | Habitat | Closest Locations | Probability on Project Site |
|---|---|---|---|---|
| Riparian woodrat<br>*Neotoma fuscipes riparia* | Fed: FE<br>State: CSC<br>Other: | Found only in riparian habitats along the San Joaquin, Stanislaus, and Tuolumne Rivers. Requires areas with a mix of trees and shrubs. | Closest record for this species is located approximately 4.6 miles south of the project sites (Occurrence No. 5). | None. No riparian habitat occurs on or adjacent to the project site. Entire site is planted with grapes or landscaped. |

***Status**

| Federal: | State: | State: |
|---|---|---|
| FE - Federal Endangered | CE - California Endangered | WL - Watch List. Not protected pursuant to CEQA |
| FT - Federal Threatened | CT - California Threatened | S1 - Critically Imperiled |
| FPE - Federal Proposed Endangered | CR - California Rare | S2 - Imperiled |
| FPT - Federal Proposed Threatened | CC - California Candidate | Global: |
| FC - Federal Candidate | CSC - California Species of Special Concern | G2 - Imperiled |
| FPD - Federally Proposed for delisting | FP - Fully Protected | G4 - Apparently Secure |

** This frog is listed as “endangered” in the Southern Sierra, central, and southern California coasts and “threatened” in the Northern Sierra and Feather River. This frog is not protected pursuant to CESA on the northern coast of California.

# APPENDIX E

# A Cultural Resources Survey for South of Woodward Avenue South - Hat Ranch Manteca, San Joaquin County, California

Eileen Barrow, M.A.

October 14, 2013

# A Cultural Resources Survey for South of Woodward Avenue South - Hat Ranch Manteca, San Joaquin County, California

Prepared by:



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October 14, 2013

## ABSTRACT

Tom Origer & Associates conducted a cultural resources survey for the proposed South of Woodward Avenue South - Hat Ranch Project, Manteca, San Joaquin County, California. The study was requested by Raney Planning and Management, Inc., in compliance with requirements of the City of Manteca Community Development Department. The study area consists of 184 acres of land located approximately 2.75 miles southeast of downtown Manteca.

This study included archival research at the Central California Information Center, California State University Stanislaus (CCIC File No. 8734L), examination of the library and files of Tom Origer & Associates, field inspection of the project location, and contact with the Native American community. Field survey of the project area found no cultural resources within the study area. Documentation pertaining to this study is on file at the offices of Tom Origer & Associates (File No. 13-104S).


**Synopsis**

Project: South of Woodward Avenue South - Hat Ranch
Location: off Sedan Avenue, Manteca, San Joaquin County, California
Quadrangle: Manteca, California 7.5' series
Study Type: Intensive survey
Scope: 184 acres
Finds: None

**Project Personnel**

Tom Origer provided project oversight and conducted a portion of the field survey for this study. Mr. Origer obtained a Master of Arts degree in Anthropology from San Francisco State University in 1983, after obtaining a Bachelor of Arts degree in Anthropology at Sonoma State University in 1974. He has over thirty years of experience in cultural resources management throughout Northern California. His experience includes work that has been completed in compliance with local ordinances, CEQA, NEPA, and Section 106 (NHPA) requirements. Mr. Origer has been teaching archaeological analysis and field archaeology classes at Santa Rosa Junior College since 1979. He is affiliated with the Society for California Archaeology (Presidential duties from April 1998 to April 2001), the International Association for Obsidian Studies (charter member and President from 1990-1992), the Archaeological Institute of America (President of the North Coast Society from 1985 to 1987), the Society for American Archaeology, the Society for Historical Archaeology, and the Register of Professional Archaeologists.

Eileen Barrow has been with Tom Origer & Associates since 2005. Mrs. Barrow holds a Master of Arts in cultural resources management and meets the Secretary of Interior's standards for archaeology. Professional affiliations include the Society for California Archaeology, the Cotati Historical Society, the Sonoma County Historical Society, and the Western Obsidian Focus Group, and the Register of Professional Archaeologists (#989269).. Ms. Barrow participated in the field phase of this study and prepared this report.

Glen Halverson participated in the field survey for this project. Mr. Halverson has been involved in Northern California archaeology since 2004.

Alexis Garcia participated in the field survey for this project. She has a Bachelor of Arts in Anthropology from the University of California at Santa Cruz and has been involved in Northern California archaeology since 2005.

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## INTRODUCTION

This report describes a cultural resources survey for the proposed South of Woodward Avenue South - Hat Ranch Project. This project consists of a residential subdivision proposed of parcels 226-120-10, 226-120-11, and 226-140-04 located off of Sedan Avenue, approximately 2.75 miles southeast of downtown Manteca, San Joaquin County, California (Figure 1). The study was requested by Raney Planning and Management, Inc., in compliance with requirements of the City of Manteca. Documentation pertaining to the study is on file at Tom Origer & Associates (File No. 13-104S).

## REGULATORY CONTEXT

The California Environmental Quality Act (CEQA) requires that cultural resources be considered during the environmental review process. This is accomplished by an inventory of resources within a study area and by assessing the potential that cultural resources could be affected by development.

This cultural resources survey was designed to satisfy environmental issues specified in the CEQA and its guidelines (Title 14 CCR §15064.5) by: (1) identifying all cultural resources within the project area; (2) offering a preliminary significance evaluation of the identified cultural resources; (3) assessing resource vulnerability to effects that could arise from project activities; and (4) offering suggestions designed to protect resource integrity, as warranted.

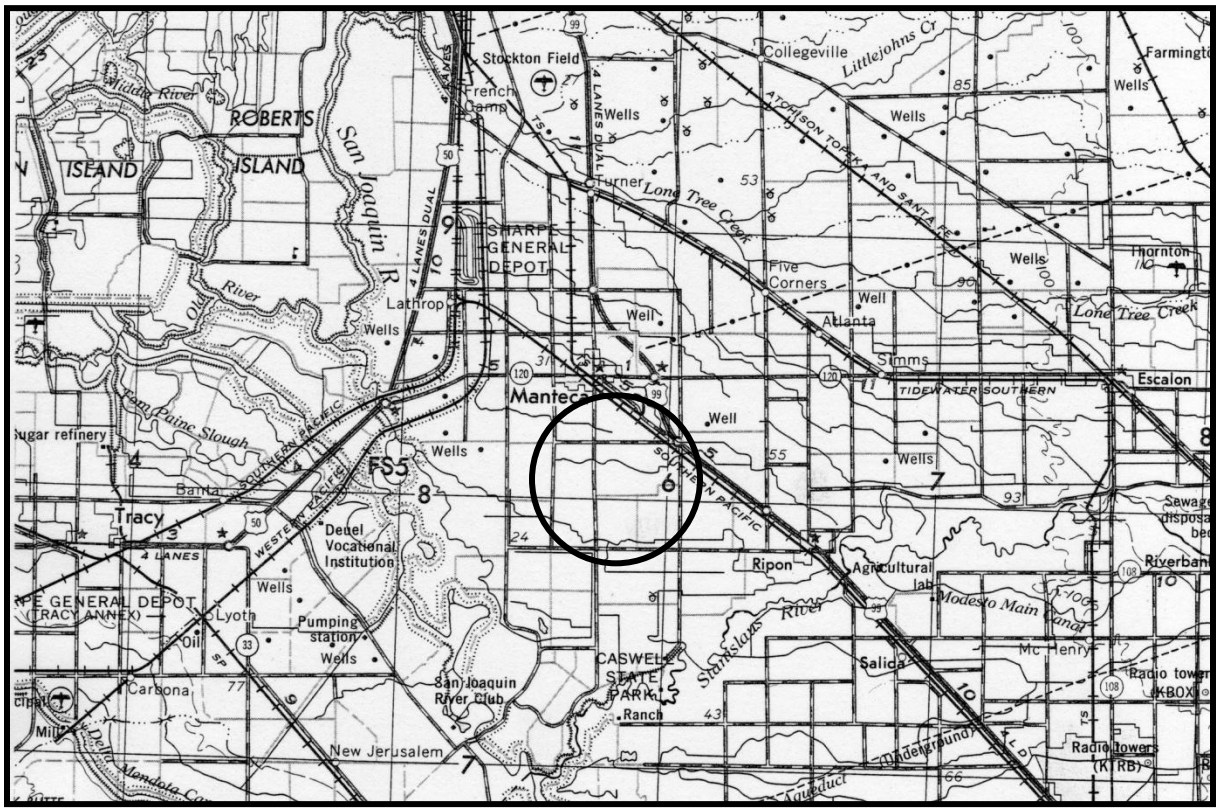


**Figure 1. Project vicinity** (adapted from the USACE 1962 San Jose 1:250,000-scale map).

## Resource Definitions

Cultural resources are classified by the State Office of Historic Preservation (OHP) as sites, buildings, structures, objects and districts, and each is described by OHP (1995) as follows.

> **Site.** A site is the location of a significant event, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archaeological value regardless of the value of any existing structure.
>
> **Building.** A building, such as a house, barn, church, hotel, or similar construction, is created principally to shelter any form of human activity. "Building" may also be used to refer to a historically and functionally related unit, such as a courthouse and jail, or a house and barn.
>
> **Structure.** The term "structure" is used to distinguish from buildings those functional constructions made usually for purposes other than creating human shelter.
>
> **Object.** The term "object" is used to distinguish from buildings and structures those constructions that are primarily artistic in nature or are relatively small in scale and simply constructed. Although it may be, by nature or design, movable, an object is associated with a specific setting or environment.
>
> **District.** A district possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development.

## Significance Criteria

When a project might affect a cultural resource, the project proponent is required to conduct an assessment to determine whether the effect may be one that is significant. Consequently, it is necessary to determine the importance of resources that could be affected. The importance of a resource is measured in terms of criteria for inclusion on the California Register of Historical Resources (Title 14 CCR, §4852(a)) as listed below. A resource may be important if it meets any one of the criteria below, or if it is already listed on the California Register of Historical Resources or a local register of historical resources.

An important historical resource is one which:

1. Is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.

2. Is associated with the lives of persons important to local, California, or national history.

3. It embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of a master or possesses high artistic values.

4. It has yielded, or may be likely to yield, information important to the pre-history or history of the local area, California, or the nation.

In addition to meeting one or more of the above criteria, eligibility for the California Register requires that a resource retains sufficient integrity to convey a sense of its significance or importance. Seven elements are considered key in considering a property's integrity: location, design, setting, materials, workmanship, feeling, and association.

Additionally, the OHP advocates that all historical resources over 45 years old be recorded for inclusion in the OHP filing system (OHP 1995:2), although the use of professional judgment is urged in determining whether a resource warrants documentation.

## PROJECT SETTING

### Study Area Location and Description

The study area comprises approximately 184 acres of relatively flat agricultural land located off of Sedan Avenue, Manteca, San Joaquin County, as shown on the Manteca, California 7.5' USGS topographic map (Figure 2). Presently, there are two large machine garages and a mansion located on parcel 226-140-04. County records indicate that the mansion was constructed in 1995. Aerial photos suggest the garages were built around or after this time as well.

Soils within the study area consist of the Delhi and Tinnin series soils (McElhiney 1992: Sheet 25). Delhi soils are excessively draining loamy sands formed from wind-modified alluvium (McElhiney 1992:50-51). Tinnin soils are well-draining loamy coarse sand formed on alluvial fans (McElhiney 1992:128). These soils are used primarily for irrigated crops, orchards or vineyards but have also been used for irrigated pasture and home sites (McElhiney 1992:31, 50-51, 128).

The project area has well-drained soils that probably once supported a variety of plants that could have served as food and cover for animals. In addition, fresh water and freshwater resources were available in nearby creeks and seasonal drainages. The presence of these attributes suggests that the study area would have been suitable to prehistoric occupants as a place to gather resources and hunt.

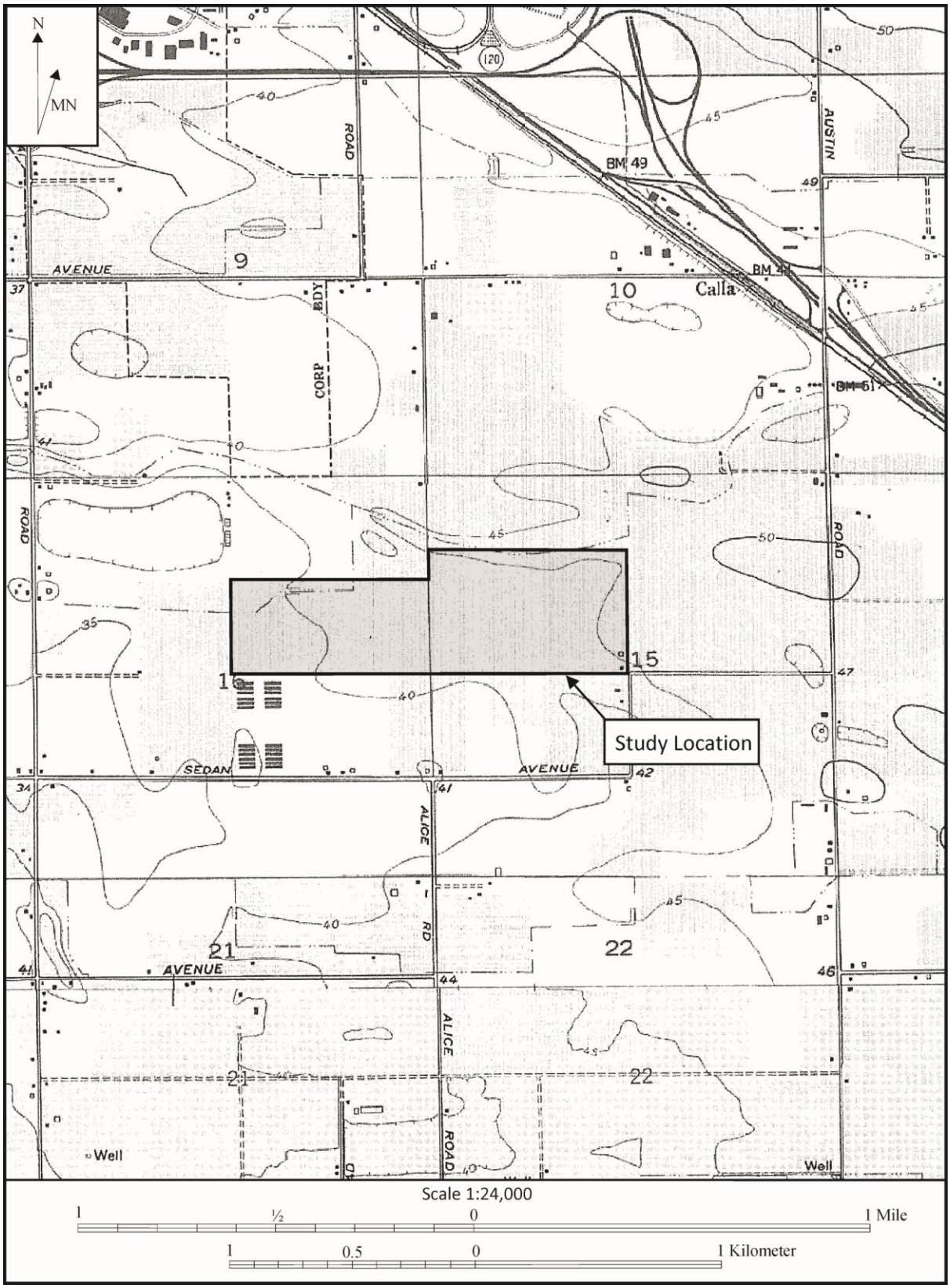



**Figure 2. Study location** (adapted from the USGS 1952 [photorevised 1987; minor revision 1994] Manteca 7.5' topographic map).

## Cultural Setting

Archaeological evidence indicates that human occupation of California began between 10,000 and 15,000 (Moratto 1984:71). Early occupants appear to have had an economy based largely on hunting, with limited exchange, and social structures based on the extended family unit. Later, milling technology and an inferred acorn economy were introduced. This diversification of economy appears to be coeval with the development of sedentism and population growth and expansion. Sociopolitical complexity and status distinctions based on wealth are also observable in the archaeological record, as evidenced by an increased range and distribution of trade goods (e.g., shell beads, obsidian tool stone), which are possible indicators of both status and increasingly complex exchange systems.

At the time of European settlement, the study area was situated in an area controlled by the Northern Valley Yokuts (Wallace 1978). The Northern Valley Yokuts were hunter-gatherers who lived in rich marsh and plains environments, which allowed for dense populations with complex social structures (Wallace 1978; Kroeber 1925). They settled in large, permanent villages about which were distributed seasonal camps and task-specific sites. Primary village sites were occupied throughout the year and generally were located on, or near, low mounds and the banks of large watercourses. Other sites were visited in order to procure particular resources that were especially abundant or available only during certain seasons. Populations were not evenly distributed, but rather clustered in a narrow strip of land along the San Joaquin and its main tributaries, in accordance with periodic flooding (Wallace 1979:463). This region provided variety and an abundance of fish, fowl, small and large game mammals, acorns, tule roots, and seeds as sources of subsistence.

# STUDY PROCEDURES AND FINDINGS

## Native American Contact

The State of California's Native American Heritage Commission and Katherine Erolinda Perez were contacted in writing. A log of contact efforts is provided at the end of this report (Appendix A).

## Archival Study Procedures

Archival research included examination of the library and project files at Tom Origer & Associates. A review (CCIC File No. 8734L) was completed of the archaeological site base maps and records, survey reports, and other materials on file at the Central California Information Center (CCIC), California State University Stanislaus, Turlock. Sources of information included but were not limited to the current listings of properties on the National Register of Historic Places (National Register), California Historical Landmarks, California Register of Historical Resources (California Register), and California Points of Historical Interest as listed in the Office of Historic Preservation's *Historic Property Directory* (OHP 2012).

The Office of Historic Preservation has determined that structures older than 45 years should be considered potentially important historical resources, and former building and structure locations could be potentially important historic archaeological sites. Archival research included an examination of historical maps to gain insight into the nature and extent of historical development in the general vicinity, and especially within the study area. Maps ranged from hand-drawn maps of the 1800s (e.g., General Land Office [GLO] plats) to topographic maps issued by the United States Geological Survey (USGS) and the Army Corps of Engineers (USACE) from the early to the middle 20th century.

In addition, ethnographic literature that describes appropriate Native American groups, county histories, and other primary and secondary sources were reviewed. Sources reviewed are listed in the "Materials Consulted" section of this report.

**Archival Study Findings**

Archival research found that the project area had not been subject to a prior cultural resources survey. The study parcel has been subject to two overview studies but these did not incorporate fieldwork into their study (Napton 1993; Windmiller and Napoli 2002). No cultural resources have been found within a one-mile radius of the project area that could extend into the current project area.

There are no reported ethnographic sites in the vicinity (Wallace 1978; Kroeber 1925).

The 1855 GLO shows a road bisecting a portion of the eastern portion of the study location. However, no subsequent maps show roads at this location. A house is shown on the 1952 topographic quadrangle in the far southeastern corner of the study location near Sedan Avenue. No other buildings are ever shown on the property (Britton & Rey 1895; GLO 1855; Thompson and West 1879; USGS 1914, 1952a 1952b).

**Field Survey Procedures**

A field survey of the property was completed by Eileen Barrow, Alexis Garcia, Glen Halverson, and Tom Origer on October 3 and 4, 2013. A majority of the project area was planted with vineyard. Visibility was excellent in the vineyard, with vegetation being the chief hindrance. Hoes were used to clear small patches of vegetation, as needed, so that the ground could be inspected. Survey was conducted in transects 30 meters or less apart, a zig-zag pattern was employed, where possible, to assure complete coverage.

Based on the distribution of known cultural resources and their environmental settings, it was anticipated that prehistoric archaeological sites could be found within the study area. Prehistoric archaeological site indicators expected to be found in the region include but are not limited to: obsidian and chert flakes and chipped stone tools; grinding and mashing implements such as slabs and handstones, and mortars and pestles; bedrock outcrops and boulders with mortar cups;

and locally darkened midden soils containing some of the previously listed items plus fragments of bone, shellfish, and fire affected stones. Historic period site indicators generally include: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

### Field Survey Findings

The building that was located at the southeastern corner of the study location is no longer present and in this area is located the two large machine garages. In this corner there were some fragments of glass and ceramic, however, these specimens were widely dispersed and are not considered an archaeological site. No cultural resources were found in the study location.

## RECOMMENDATIONS

### Known Resources

No prehistoric or historic-era archaeological sites were found within the study area; therefore, no resource-specific recommendations are warranted.

### Accidental Discovery

There is the possibility that buried archaeological deposits could be present, and accidental discovery could occur. In keeping with the CEQA guidelines, if archaeological remains are uncovered, work at the place of discovery should be halted immediately until a qualified archaeologist can evaluate the finds (§15064.5 [f]). Prehistoric archaeological site indicators include: obsidian and chert flakes and chipped stone tools; grinding and mashing implements (e.g., slabs and handstones, and mortars and pestles); bedrock outcrops and boulders with mortar cups; and locally darkened midden soils. Midden soils may contain a combination of any of the previously listed items with the possible addition of bone and shell remains, and fire affected stones. Historic period site indicators generally include: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

The following actions are promulgated in Public Resources Code 5097.98 and Health and Human Safety Code 7050.5, and pertain to the discovery of human remains. If human remains are encountered, excavation or disturbance of the location must be halted in the vicinity of the find, and the county coroner contacted. If the coroner determines the remains are Native American, the coroner will contact the Native American Heritage Commission. The Native American Heritage Commission will identify the person or persons believed to be most likely descended from the deceased Native American. The most likely descendent makes recommendations regarding the treatment of the remains with appropriate dignity.

## SUMMARY

Tom Origer & Associates conducted a cultural resources survey for the proposed South of Woodward Avenue South - Hat Ranch Project, Manteca, San Joaquin County, California. The study was requested by Raney Planning and Management, Inc., in compliance with requirements of the City of Manteca and the California Environmental Quality Act. No prehistoric or historic-era cultural resources were found within the project area, and no resource-specific recommendations were warranted. Documentation pertaining to this study is on file at the offices of Tom Origer & Associates (File No. 13-104S).

## MATERIALS CONSULTED

Department of Parks and Recreation
1976 *California Inventory of Historical Resources.* State of California, Sacramento.

General Land Office
1855 Survey plat for T2S/R7E, MDBM. Department of the Interior, Washington, D.C.

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1960 *California Place Names: The Origin and Ethnology of Current geographical Names.* University of California Press: Berkley.

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1914 Manteca, California, 7.5' series map (1:31680). Geological Survey, Washington, D.C.

1952a Manteca, California. 7.5' series map. Geological Survey, Washington, D.C.

1952b Manteca, California. 15' series map. Geological Survey, Washington, D.C.

Wallace, W.
1978 Northern Valley Yokuts. In *California*, pp. 462-470 edited by R. Heizer. Handbook of North American Indians, Vol. 8, W. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Windmiller, R. and D. Napoli
2002 *City of Manteca - General Plan Update: Background Reports.* Document SJ-4786 on file at Central California Information Center, CSU Stanislaus, Turlock.

**APPENDIX A**
**Native American Contact**

Contact Log
Correspondence and Maps

**Native American Contact Efforts**
**South of Woodward Avenue North Project, Manteca, San Joaquin County**

| Organization | Contact | Letters | Results |
|---|---|---|---|
| Native American Heritage Commission | | 9/17/13 | A response was received from the NAHC on September 18, 2013 stating that nothing was shown in their Sacred Land Files. A list of contacts was provided. |
| Katherine Erolinda Perez | | 9/19/13 | As of the date of this report no response has been received. |

## Sacred Lands File & Native American Contacts List Request

**NATIVE AMERICAN HERITAGE COMMISSION**
915 Capitol Mall, RM 364
Sacramento, CA 95814
(916) 373-5471
(916) 373-5471 – Fax
nahc@pacbell.net

*Information Below is Required for a Sacred Lands File Search*

Project: SOWA South - Hat Ranch EIR

County: San Joaquin

USGS Quadrangles

Name: Manteca
Township _2S_ Range_7E_ Section(s) 15 and 16

Company/Firm/Agency: Tom Origer & Associates
Contact Person: Eileen Barrow

Street Address: P.O. Box 1531
City: Rohnert Park Zip: 94927
Phone: (707) 584-8200 Fax: (707) 584-8300
Email: eileen@origer.com

Project Description: The project proponent is planning on developing approximately 184 acres into a residential subdivision.

Tom Origer & Associates
Archaeology / Historical Research

September 19, 2013

Katherine Erolinda Perez
P.O. Box 717
Linden, California 95236

Re: South of Woodward Avenue Area Hat Ranch Project EIR, Manteca, San Joaquin County, California.

Dear Ms. Erolinda Perez:

I write to notify you about a cultural resources study our firm is conducting for the South of Woodward Avenue Area Hat Ranch Project EIR, Manteca, San Joaquin County. This project will include the subdivision of 184 acres and the construction of single-family homes. The project area is shown on the enclosed portion of the Manteca, California 7.5' USGS quadrangle within Township 2 South, Range 7 East, within Sections 15 and 16.

While this notification does not constitute SB 18 or formal Section 106 consultation, if you have any information or concerns we would be happy to convey them to our client.

Please contact us at (707) 584-8200 if you need any additional information. Thank you for your help.

Sincerely,

Eileen Barrow
Associate

Encl. Portion of the Manteca 7.5' USGS map

P.O. Box 1531, Rohnert Park, California 94927 ♦ Phone (707) 584-8200 Fax (707) 584-8300

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

**NATIVE AMERICAN HERITAGE COMMISSION**
1550 Harbor Blvd.
West SACRAMENTO, CA 95691
(916) 373-3710
Fax (916) 373-5471

September 18, 2013

Eileen Barrow
Tom Origer & ASsociates
P.O. Box 1531,
Rohnert Park, CA 94927

By Fax: 707-584-8300

Number of Pages: 2

Re: SOWA South–Hat Ranch EIR Project & SOWA North EIR Project, San Joaquin County

Dear Ms. Barrow,

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 373-3713.

Sincerely,

Debbie Pilas-Treadway
Environmental Specialist III

# Native American Contacts
## San Joaquin County
## September 18, 2013

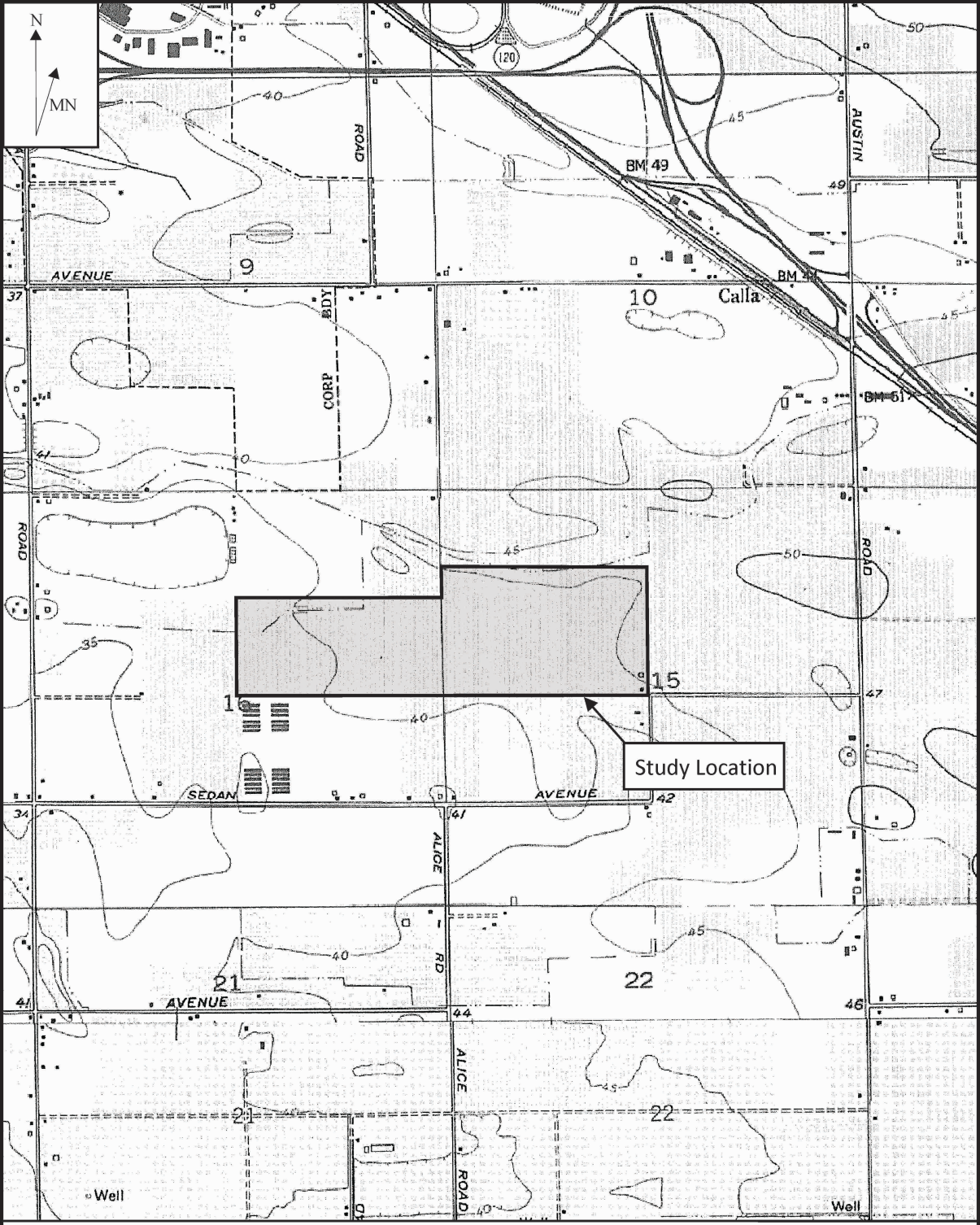
Katherine Erolinda Perez
PO Box 717
Linden , CA 95236
canutes@verizon.net
(209) 887-3415

Ohlone/Costanoan
Northern Valley Yokuts
Bay Miwok

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SOWA South-Hat Ranch EIR project, San Joaquin County


N
MN
Study Location
Calla
BM 49
BM 51
AUSTIN ROAD
ALICE RD
ALICE ROAD
SEDAN AVENUE
AVENUE
CORP
Well
Well
Scale 1:24,000
1 ½ 0 1 Mile
1 0.5 0 1 Kilometer

# APPENDIX F

# GEOTECHNICAL FEASIBILITY STUDY

Prepared for RICHLAND DEVELOPERS

In Support of Environmental Documentation For:

**Hat Property**

Manteca, CA

Project No.: AC198

November 26, 2012

**Prepared by:**

Acacia Consultants & Engineers, Inc.

3025 Venture Road

Placerville, CA 95667

www.acaciace.com

Acacia CE Engineer of Record

William M. Kenney CE, GE

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Mr. Clifton Taylor
Richland Developers, Inc
1508 Eureka Road, Suite 140
Roseville, CA 95661

Subject: Hat Property
Manteca, CA

**GEOTECHNICAL FEASIBILITY STUDY**

Dear Mr. Taylor:

Acacia Consultants & Engineers (ACE) is pleased to present this Geotechnical Feasibility Study for the subject site located in San Joaquin County, California (Property). The attached report was prepared in general accordance with the geotechnical scope of services presented in our proposal for engineering services dated April 4, 2012.

This study for geotechnical feasibility of the development, as currently proposed, is based on a review of published data (e.g. geologic maps, etc.) and information provided by Richland Developers. This report presents a summary of the general site geology, geologic hazards and geotechnical considerations for the project as currently proposed.

This study was conducted in support of project CEQA documentation and is not intended to be used as a geotechnical design level document. A design level geotechnical study will be required for building and infrastructure development.

We are pleased to serve you on this project. If you have any questions regarding the contents of our report, please contact us at (530) 748-1336.

Sincerely,

Acacia Consultants & Engineers, Inc.

William M. Kenney, GE
Principal Engineer

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### ATTACHMENTS

Attachment A – USGS Design Maps Summary Report
Attachment B – USDA NRCS Soil Report

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# 1.0 INTRODUCTION

Acacia CE (ACE) conducted a phase one environmental site assessment for the Property located along the north side of Sedan Avenue north of the intersection of Sedan Ave and Alice Avenue in the Manteca area of San Joaquin County, California (Figure 1.0). The purpose of this study is to provide geotechnical input for due diligence during the preparation of the project environmental documents as required by the California Environmental Quality Act (CEQA). This report presents a summary of the general Property geology, geologic hazards, and geotechnical considerations for the project as currently proposed.

## *1.1 Scope of Services*

This Geotechnical Feasibility Study was performed at the request of Richland Developers and conducted in general accordance with our Proposal for Engineering Services dated April 4, 2012. The objective of this study is to identify geotechnical conditions associated with the Property that may impact site development.

A design level geotechnical study will be required for building and infrastructure development. The design level geotechnical study should include subsurface exploration and laboratory testing of soil samples to provide site-specific geotechnical design parameters for development (e.g. allowable bearing capacity, settlement analysis, etc.).

# 2.0 PROJECT DESCRIPTION

## *2.1 Location*

The Property is an approximately 182 acre irregularly shaped Property composed of three parcels identified by Assessor's Parcel Numbers (APN) 226-120-10, 226-120-11, 226-140-04 shown on Figure 2.0. For reference purposes this report references the Property location as latitude 37.7635, longitude -121.1943.

## *2.2 Proposed Improvements*

The Owner proposes to develop the Property into an age restricted community with the existing residence as a centerpiece/clubhouse. Proposed improvements include typical improvements for projects of this type including single and multi-family low rise wood frame residential structures, roadways, and utilities (e.g. power, phone, sanitary sewer, etc).

## *2.3 Existing Conditions*

At the time of our visit on November 7, 2012, we observed the Property is currently developed as a rural residential property and winery. A 30,000 square foot residence, outdoor pool, tennis court, office building, and storage building are located within the eastern area of the Property. With the exception of landscape around the residence and winemaking facility, the site is composed of wine grape vineyards (Figure 2.0).

According to published topographic maps, the Property is relatively flat and ranges in elevation from approximately 45 feet above mean sea level (msl) in the east to approximately 40 feet above msl in the west, see Figure 3.0. Surface water discharge on the property typically drains from east to west.

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## 3.0 PREVIOUSLY COMPLETED REPORTS

No previous environmental or geotechnical reports were provided for our review.

## 4.0 GEOLOGY

### *4.1 Regional Geologic Setting*

California's geomorphic provinces are naturally defined geologic regions that display distinct landforms. Eleven geomorphic provinces are recognized in California. Each region displays unique, defining features based on geology, faults, topographic relief, and climate. The Property is located within the Great Valley geomorphic province.

The Great Valley geomorphic province is an alluvial plain about 50 miles wide and 400 miles long in the central portion of the state. The Project lies in the southern portion of the alluvial plain known as the San Joaquin Valley. The San Joaquin Valley is a deep structural trough that has been filled with sediment from the San Joaquin River and its tributaries.

### *4.2 Property Geology*

As shown on Figure 4.0, a portion of the Geologic Map of California, San Jose Sheet, by Jenkins (1966), the Property and vicinity is composed of Quaternary aged sediment. Based on the regional geologic map, we have inferred near surface soil at the Property includes dune sand deposits ($Q_s$) and fan deposits ($Q_f$).

### *4.3 Seismicity and Faulting*

The Project is located east of a seismically active region of California and active earthquake faults have been recognized within 50 miles of the Property (Figure 5.0). Potential seismic hazards can include moderate to strong ground motion, liquefaction, and seismic settlement.

Earthquake Fault Zones, formerly known as Special Studies Zones, have been established along active known faults in California in accordance with the Alquist-Priolo Earthquake Fault Zoning Act passed in 1972. The California Geological Survey (CGS) has developed criteria to describe fault activity as required by Alquist-Priolo. By CGS definition:

1. An *active fault* is one that has had surface displacement within the Holocene epoch (about the last 11,700 years).
2. A *potentially active fault* is a fault that has demonstrated surface displacement during the Quaternary period (the last 1.6 million years).
3. *Inactive faults* are faults that have not had any movement in the last 1.6 million years (Quaternary period).

No active, potentially active or inactive faults are mapped on or near the Property.

We screened the property for seismic hazard using the United States Geologic Survey (USGS) Geohazards website. The seismic design summary Report is included as Attachment A of this study. Based on the USGS design data the Property could be subject to seismic effects from Earthquakes occurring on faults west of the Property. Therefore, the potential for the Property to experience significant ground motion and other earthquake related phenomena is moderate to high.

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The design level geotechnical study should include estimates for earthquake related issues including but not limited to ground shaking intensity, seismic settlement, and liquefaction potential.

## 5.0 SOIL AND GROUNDWATER

### *5.1 Soil*

General Property soil conditions were obtained from the USDA Natural Resource Conservation Service (NRCS). The NRCS website includes a feature that will prepare a site specific Custom Soil Resource Report. We used the general location (longitude and latitude) to generate a site specific report for the Property. The Custom Soil Resource Report is attached as Attachment B.

General Property soil conditions were obtained from the USDA Soil Survey of San Joaquin County, California. The Soil Survey identifies the surficial soil as composed of the following three units:

- Unit 141 – *Delhi fine sand*: generally composed of fine sand overlying silty ("loamy") sand.
- Unit 142 - *Delhi loamy sand*: generally composed of sand and silty ("loamy") sand.
- Unit 255 - *Tinnin loamy coarse sand*: generally composed of silty ("loamy") sand.

The Delhi soil units were formed in wind modified alluvium (dunes) derived from granitic rock sources. The Tinnin soil is formed from alluvium derived from granitic rock sources.

The Delhi soil is excessively drained (very permeable).

The Tinnin soil is well drained (permeable).

Based on the soil descriptions near surface soils on the Property are non-plastic and should be considered to have very low to nil expansion potential.

Based on site topography the potential for landslides is considered nil.

### *5.2 Groundwater*

The site-specific depth to groundwater and direction of groundwater flow was not determined as part of this assessment. Groundwater direction is assumed to flow generally south to north. The California Environmental Protection Agency, Department of Water Resources (DWR) monitors groundwater elevations in water wells throughout the state. The closest monitoring well is State Well No. 02S07E11N002M, located approximately 1 mile northeast of the Property at a ground surface elevation of approximately 46 feet msl. Based on available records, the groundwater elevation in the well has fluctuated from an elevation of approximately 31 to 37 feet msl or about 9 to 15 feet below the ground surface. We expect the groundwater within the Property will have substantially similar elevations. The fluctuations in groundwater levels may occur seasonally or over a period of years due to variations in precipitation, temperature, irrigation pumping, and other factors.

## 6.0 EARTHWORK AND GRADING

Based on the conditions we observed and a review of available geologic data, we expect the Property will require minor earthwork and grading that can be accomplished with conventional construction equipment. We understand a site specific grading plan for the

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Property has not been prepared. However, based on our understanding of the "developable" areas of the Property, we anticipate cuts and fills of about 2 to 4 feet or less.

Specific grading recommendations for roadway construction and building pad preparation including, but not limited to, moisture conditioning and compaction should be provided in the design level geotechnical report.

Because of the primarily granular nature of the Property soil, utility installation greater than 4 feet may require continuous shoring. Specific requirements for utility excavation and installation including sloping and shoring requirements should be provided in the design level geotechnical study.

## 7.0 FOUNDATIONS

Based on the site conditions we observed and a review of available geologic data, we expect one and two story wood frame structures can be supported on standard isolated and continuous, reinforced concrete footings.

Foundation design recommendations, including but not limited to, allowable bearing capacity, sliding coefficient, and passive pressure, should be provided in the design level geotechnical study.

## 8.0 CONCLUSIONS

Based on the information referenced herein, the Property is considered suitable for the proposed development from a geotechnical standpoint. No geologic or seismic conditions were found during this study that would preclude use of the property as planned.

The principle geotechnical factors potentially affecting the Property are related to the high potential for seismic activity.

A design level geotechnical study should evaluate the seismic potential and related seismic effects on the project development based on the seismic hazards present and Properties in-situ soil conditions. We recommend the Owner/Developer request the design geotechnical engineer of record (GEOR) evaluate site soil conditions using a subsurface field investigation program consisting of both soil borings using Standard Penetration Test (SPT) sampling and Cone Penetration Tests (CPT).

## 9.0 LIMITATIONS

The conclusions and recommendations presented herein have been prepared by ACE under supervision of the senior staff member whose seal and signature has been affixed to this study. The recommendations and conclusions were based on the findings of our study, which were developed solely from the contracted services. This geotechnical feasibility study is based in part on readily available records research, out-of-house reports/maps and personal communications. The opinions formed by ACE are based on the assumed accuracy of the relied upon data in conjunction with our relevant professional experience related to such data interpretation. ACE assumes no liability for the validity of the materials relied upon in the preparation of this report.

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the document's applicability given new circumstances, not the least of which is passage of time. The geotechnical feasibility study findings are valid for two years after completion of the report. Updates of portions of the assessment may be necessary after a period of 180 days, or after significant site grading or other construction activities that might invalidate assumptions made during preparation of this study.

This geotechnical feasibility study is not intended to represent a complete soil or groundwater characterization, nor define the depth or extent of soil or groundwater conditions. It is intended to provide an evaluation of potential geotechnical concerns associated with the use and development of the Property for use in CEQA documentation.

This document was compiled using color Figures. We recommend the document be saved and reproduced using color printing. The use of black and white printing may limit the readers' ability to fully interpret Figures that have been prepared in color.

This study was performed in a manner consistent with that level of care and skill ordinarily exercised by engineers practicing in the same locality, under similar conditions and at the date/time the services were provided. ACE makes no other representation, guarantee, warranty, express or implied, regarding the services provided.

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# SELECTED REFERENCES

Jenkins, O.P, 1966, Geologic Map of California, San Jose Sheet, California Geological Survey.

Bryant , W. A., Jennings, C.W., *2010 Fault Activity Map of California*, California Geological Survey, Geological Data Map No. 6, 2010.

California Environmental Protection Agency, Department of Water Resources (http://www.water.ca.gov/waterdatalibrary/)

Google Maps (http://maps.google.com)

United States Geological Survey Earthquake Hazards Program (http://geohazards.usgs.gov)

California Environmental Protection Agency, Department of Water Resources (http://www.water.ca.gov/waterdatalibrary/)

United States Department of Agriculture, Soil Conservation Service, Soil Survey of San Joaquin County, California. (http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx)

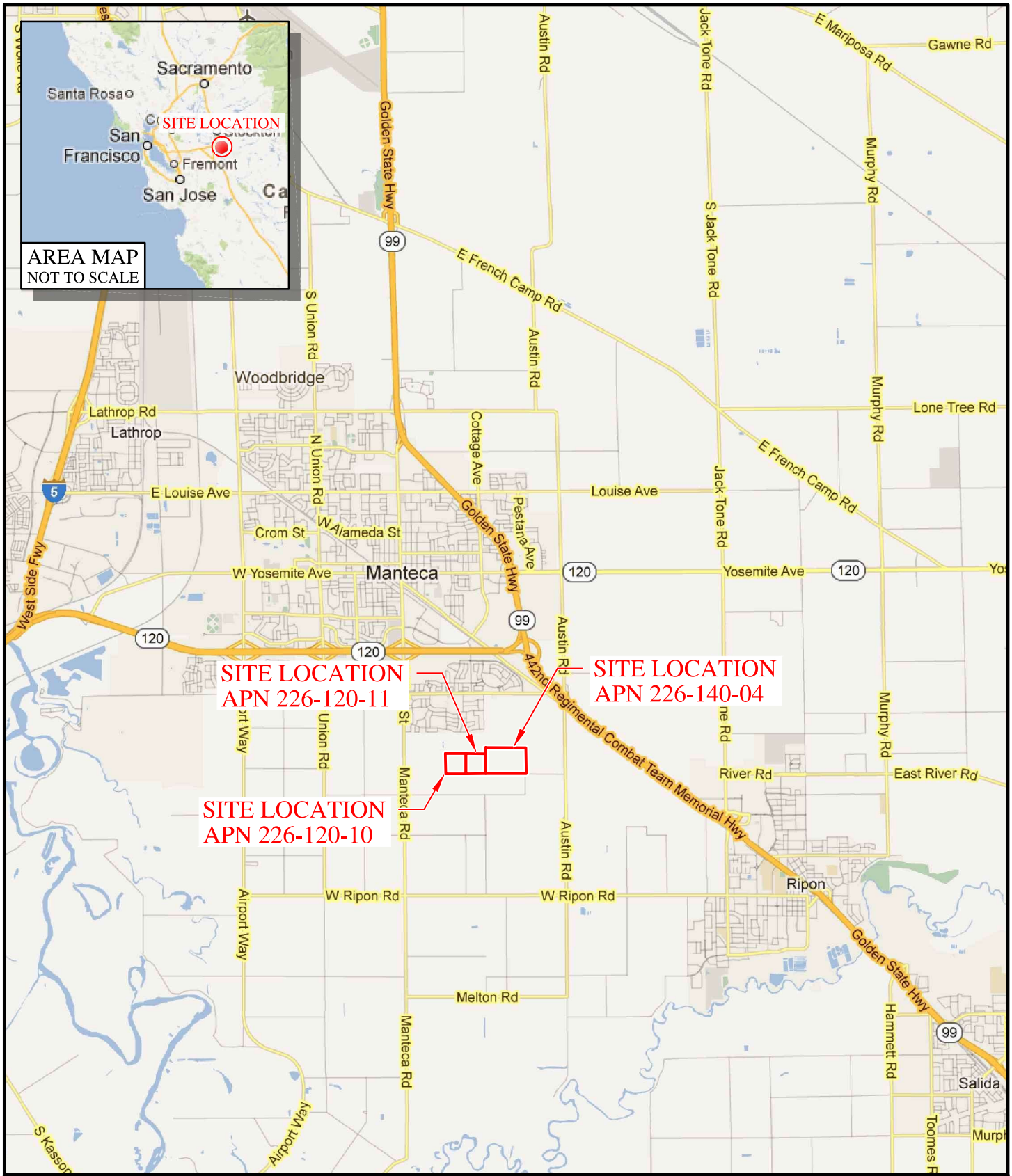
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# LIST OF FIGURES AND ATTACHMENTS

Figure 1.0 - Vicinity Map
Figure 2.0 - Aerial Photograph
Figure 3.0 - Topographic Map
Figures 4.0 - 4.3 Geologic Map
Figures 5.0 – 5.3 Fault Activity Map

Attachment A – USGS Design Maps Summary Report
Attachment B – USDA NRCS Soil Report

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Note: Site Locations are Approximate

Source: Google Maps Accessed November 2012

0 2 4

APPROXIMATE SCALE IN MILES

Acacia CE
Consultants & Engineers
3025 Venture Road, Ste. 100
Placerville, CA 95667
Tel: 530.748.1336
www.acaciace.com

# HAT PROPERTY

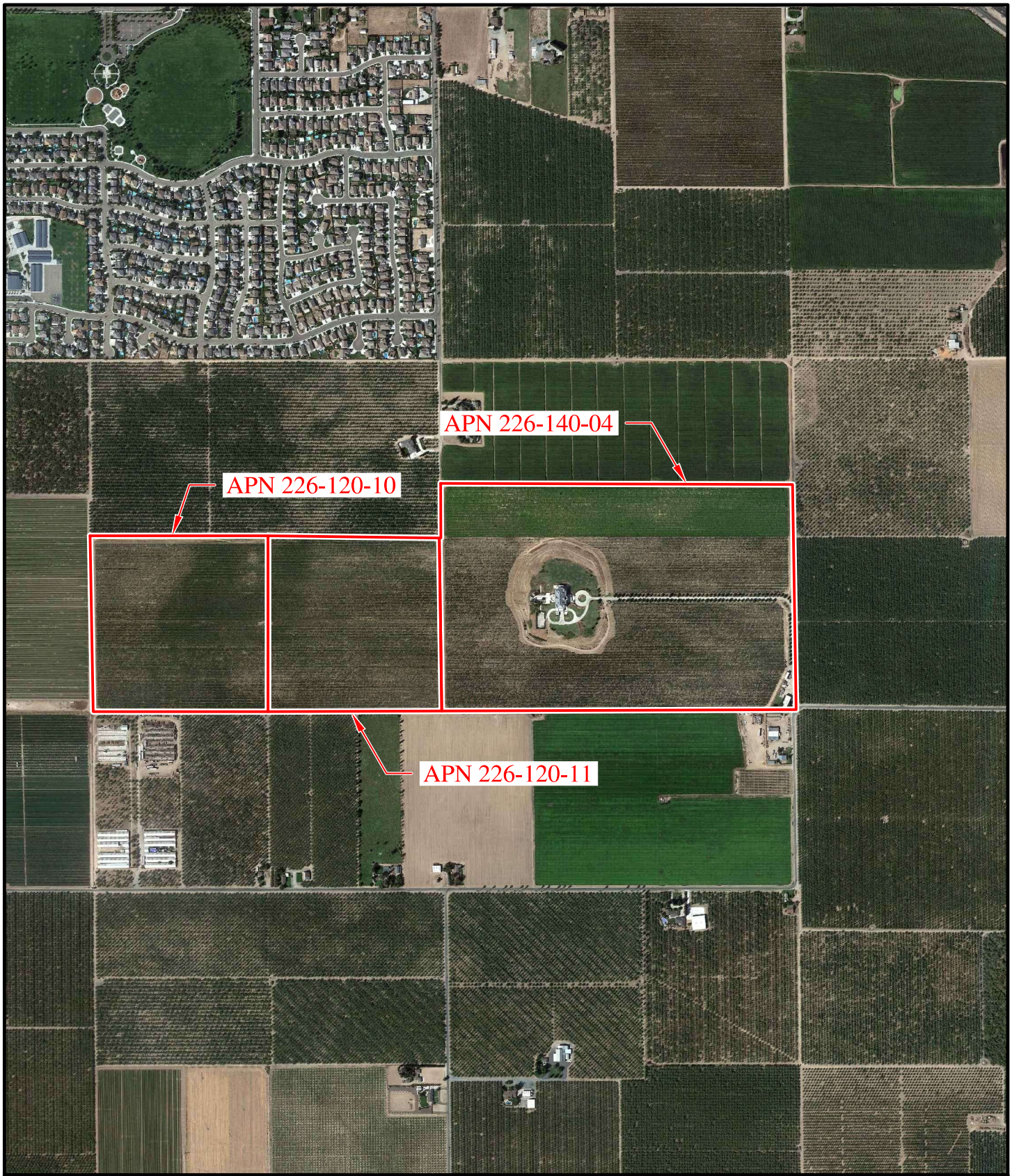
GEOTECHNICAL STUDY

APN 226-120-10, 226-120-11, 226-140-04

VICINITY MAP

| | |
|---|---|
| PROJECT NO. | AC198.02 |
| DATE | NOVEMBER 2012 |
| REVISION | 0 |
| DRAWN REG | CHECKED BCY |

FIGURE NO. 1.0




N

Note: Site Locations are Approximate

Source: Google Maps Accessed November 2012

0 1000 2000

APPROXIMATE SCALE IN FEET

Acacia CE
Consultants & Engineers
3025 Venture Road, Ste. 100
Placerville, CA 95667
Tel: 530.748.1336
www.acaciace.com

# HAT PROPERTY

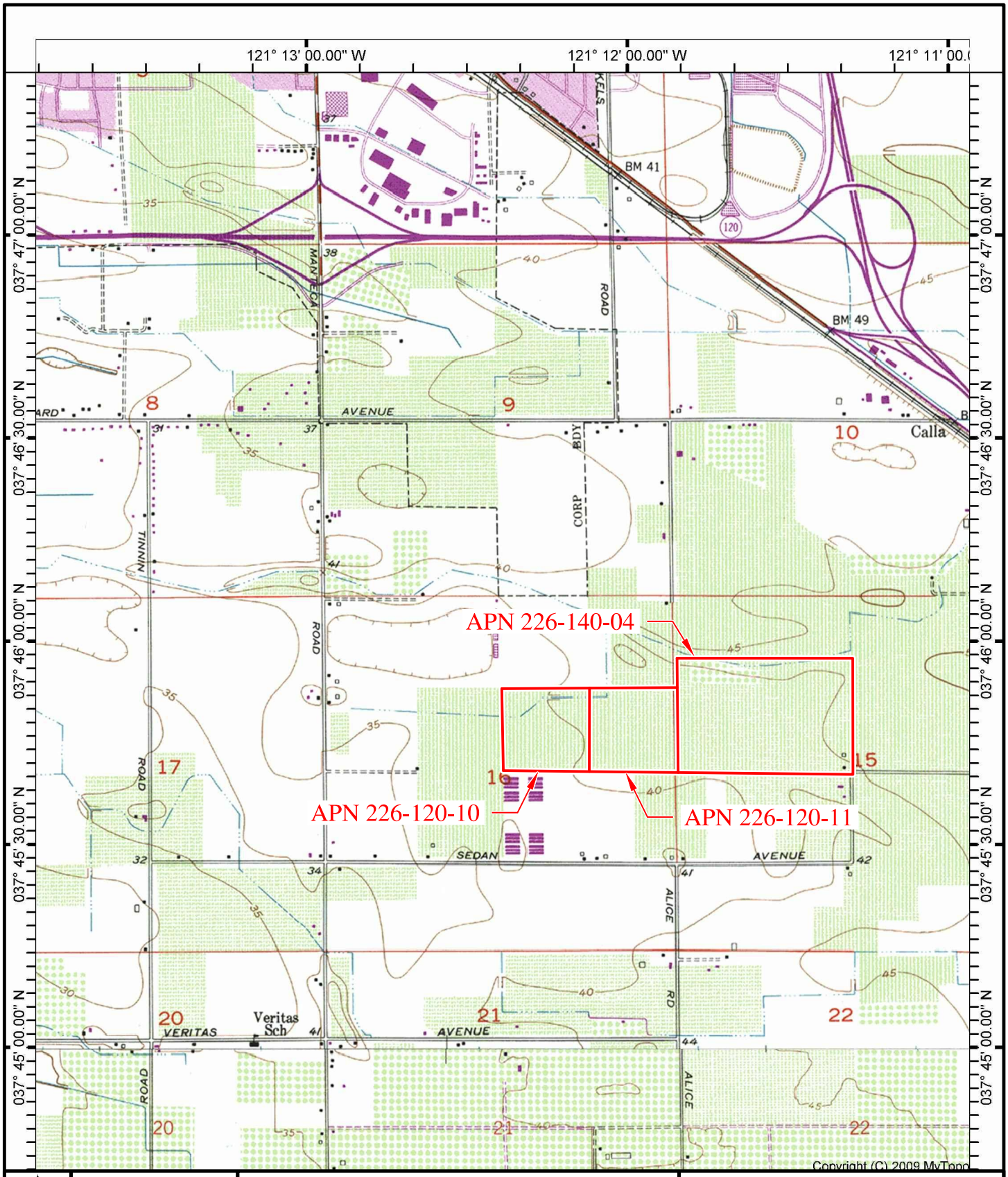
GEOTECHNICAL STUDY

APN 226-120-10, 226-120-11, 226-140-04

AERIAL PHOTOGRAPH

| | |
|---|---|
| PROJECT NO. | AC198.02 |
| DATE | NOVEMBER 2012 |
| REVISION | 0 |
| DRAWN REG | CHECKED BCY |

FIGURE NO. 2.0




Note: Site Locations are Approximate

Source: USGS Topo

MANTECA 7.5 Minute Series Date: 1952 Contour Interval: 5ft
RIPON 7.5 Minute Series Date: 1969 Contour Interval: 5ft

0 5 10

APPROXIMATE SCALE IN MILES

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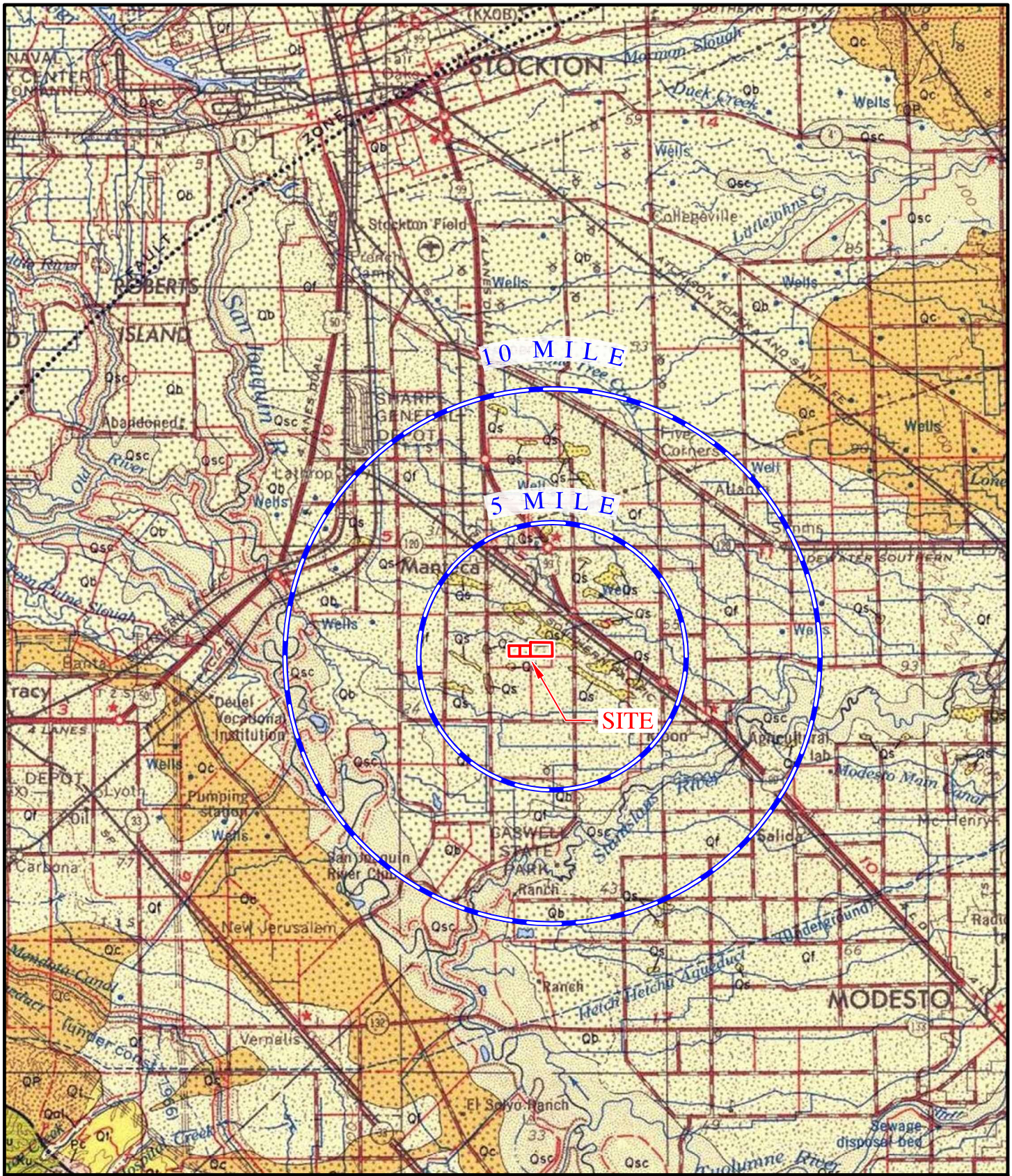
GEOTECHNICAL STUDY

APN 226-120-10, 226-120-11, 226-140-04

TOPOGRAPHIC MAP

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| PROJECT NO. | AC198.02 |
| DATE | NOVEMBER 2012 |
| REVISION | 0 |
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| CHECKED | BCY |

FIGURE NO. 3.0




Note: Site Locations are Approximate

Contour Int. = 200 ft

Source: Geologic Map of California. San Jose Sheet. Olaf P. Jenkins Edition. Compliation by Thomas H. Rogers. 1966. Second Printing 1972

0 5 10

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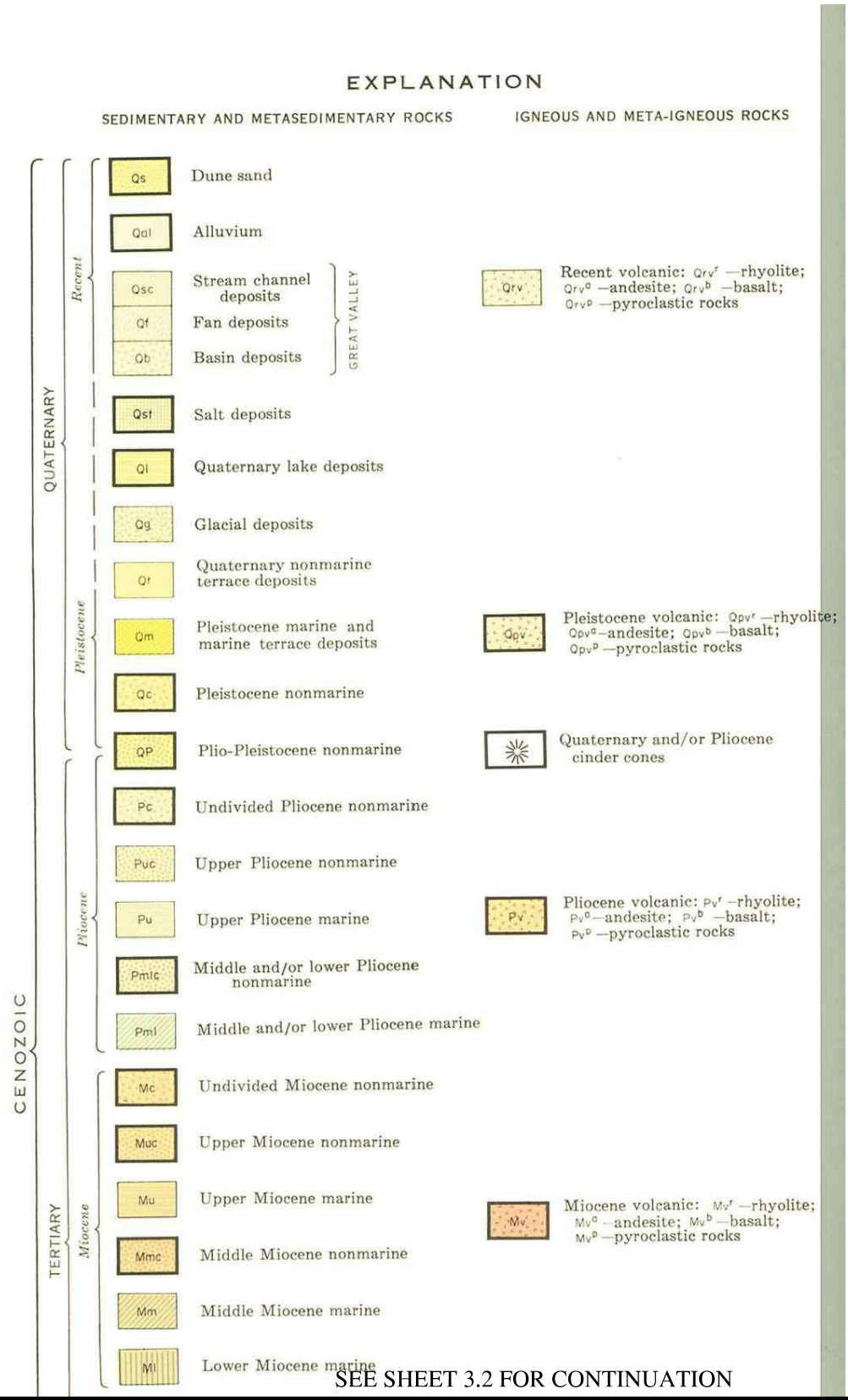
GEOTECHNICAL STUDY

APN 226-120-10, 226-120-11, 226-140-04

GEOLOGIC MAP

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| PROJECT NO. | AC198.02 |
| DATE | NOVEMBER 2012 |
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| DRAWN | REG |
| CHECKED | BCY |

FIGURE NO. 4.0




SEE SHEET 3.2 FOR CONTINUATION

Source: Geologic Map of California. San Jose Sheet. Olaf P. Jenkins Edition. Compliation by Thomas H. Rogers. 1966. Second Printing 1972

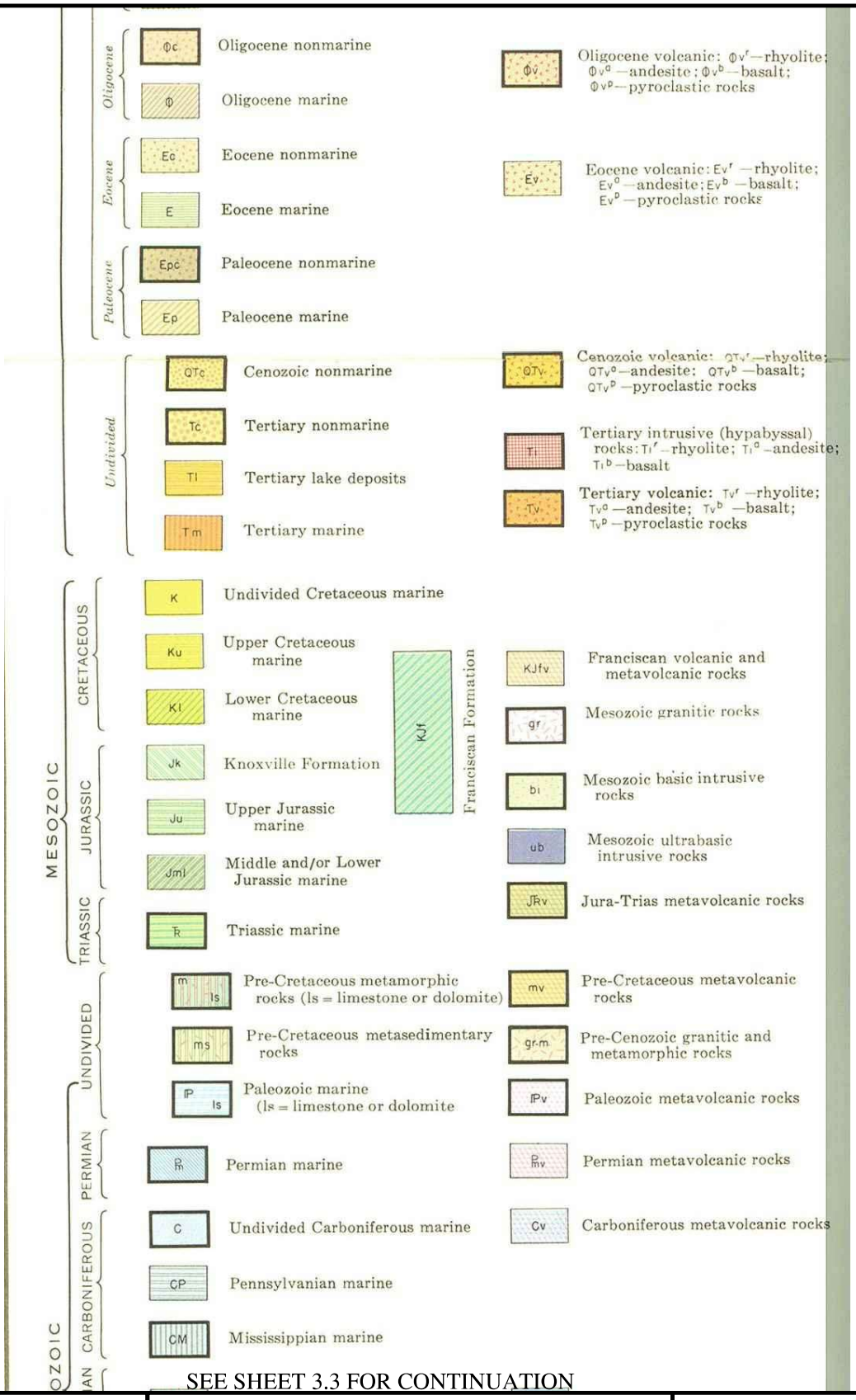
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## GEOLOGIC MAP KEY

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| REVISION | 0 |
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| CHECKED | BCY |

FIGURE NO. 4.1




SEE SHEET 3.3 FOR CONTINUATION

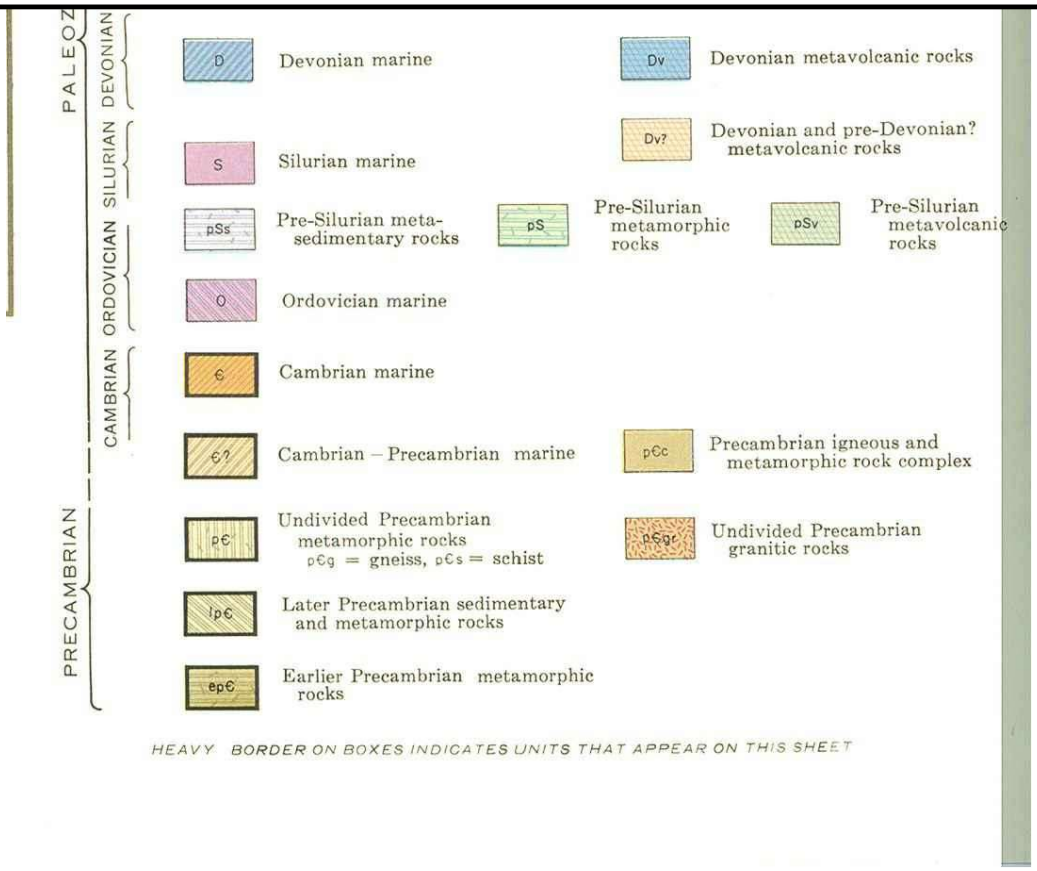
Source: Geologic Map of California. San Jose Sheet. Olaf P. Jenkins Edition. Compliation by Thomas H. Rogers. 1966. Second Printing 1972

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APN 226-120-10, 226-120-11, 226-140-04
GEOLOGIC MAP KEY

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FIGURE NO. 4.2




SEE SHEET 3.4 FOR CONTINUATION

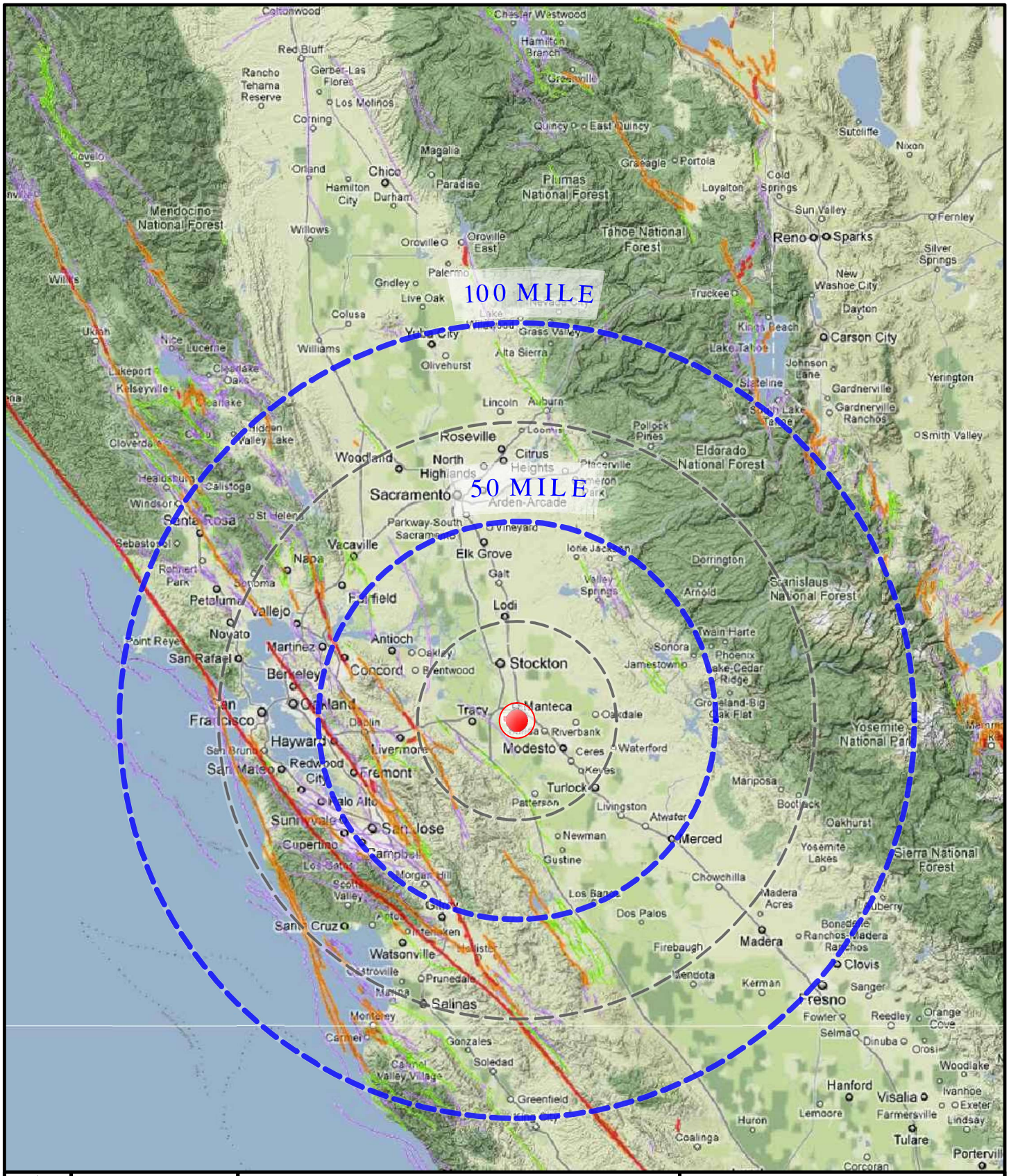
Source: Geologic Map of California. San Jose Sheet. Olaf P. Jenkins Edition. Compliation by Thomas H. Rogers. 1966. Second Printing 1972

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GEOLOGIC MAP KEY

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|---|---|
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| DATE | NOVEMBER 2012 |
| REVISION | 0 |
| DRAWN REG | CHECKED BCY |

FIGURE NO. 4.3




| | | | |
|---|---|---|---|
| N | Note: Site Locations are Approximate | Source: Bryant, W.A. and Jennings, C.W., 2012 Fault Activity Map of California: California Geological Survey, Geologic Data Map No. 6, State of California: Department of Conservation, Sacramento, CA. Note: Refer to Fig. 5.2 & 5.3 for Fault Activity Map key. | 0 37.5 75<br>APPROXIMATE SCALE IN MILES |

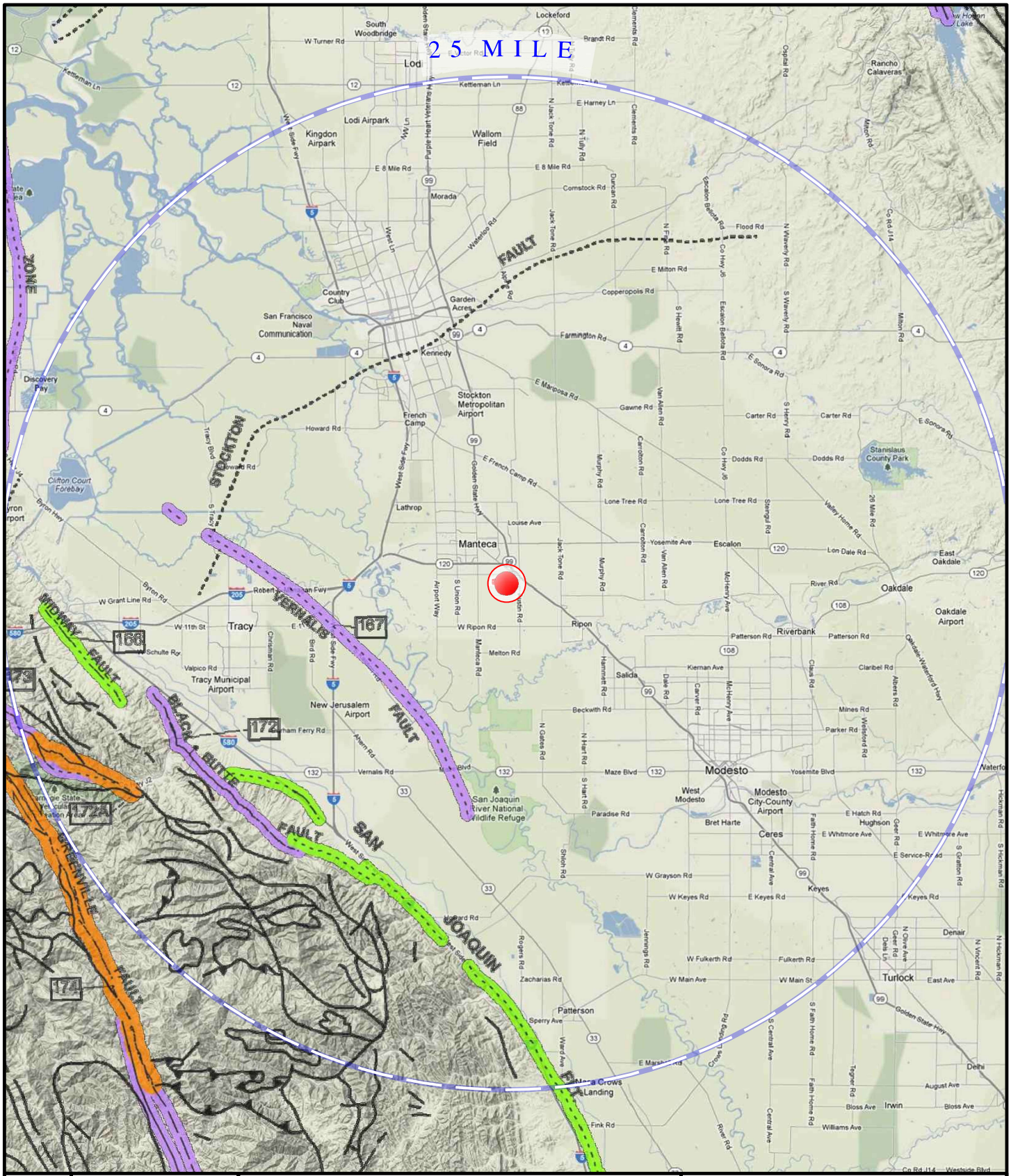
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## FAULT ACTIVITY MAP

| | |
|---|---|
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| DATE | NOVEMBER 2012 |
| REVISION | 0 |
| DRAWN REG | CHECKED BCY |

FIGURE NO. 5.0




Note: Site Locations are Approximate

Contour Int. = 200 ft

Source: Bryant, W.A. and Jennings, C.W., 2012 Fault Activity Map of California: California Geological Survey, Geologic Data Map No. 6, State of California: Department of Conservation, Sacramento, CA. Note: Refer to Fig. 5.2 & 5.3 for Fault Activity Map key.

0 35 70

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GEOTECHNICAL STUDY

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FAULT ACTIVITY MAP

| | |
|---|---|
| PROJECT NO. | AC198.02 |
| DATE | NOVEMBER 2012 |
| REVISION | 0 |
| DRAWN | REG |
| CHECKED | BCY |

FIGURE NO. 5.1

# EXPLANATION

Fault traces on land are indicated by solid lines where well located, by dashed lines where approximately located or inferred, and by dotted lines where concealed by younger rocks or by lakes or bays. Fault traces are queried where continuation or existence is uncertain. Concealed faults in the Great Valley are based on maps of selected subsurface horizons, so locations shown are approximate and may indicate structural trend only. All offshore faults based on seismic reflection profile records are shown as solid lines where well defined, dashed where inferred, queried where uncertain.

## FAULT CLASSIFICATION COLOR CODE
(Indicating Recency of Movement)



Fault along which historic (last 200 years) displacement has occurred and is associated with one or more of the following:

(a) a recorded earthquake with surface rupture. (Also included are some well-defined surface breaks caused by ground shaking during earthquakes, e.g. extensive ground breakage, not on the White Wolf fault, caused by the Arvin-Tehachapi earthquake of 1952). The date of the associated earthquake is indicated. Where repeated surface ruptures on the same fault have occurred, only the date of the latest movement may be indicated, especially if earlier reports are not well documented as to location of ground breaks.

(b) fault creep slippage - slow ground displacement usually without accompanying earthquakes.

(c) displaced survey lines.




A triangle to the right or left of the date indicates termination point of observed surface displacement. Solid red triangle indicates known location of rupture termination point. Open black triangle indicates uncertain or estimated location of rupture termination point.



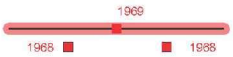

Date bracketed by triangles indicates local fault break.




No triangle by date indicates an intermediate point along fault break.




Fault that exhibits fault creep slippage. Hachures indicate linear extent of fault creep. Annotation (creep with leader) indicates representative locations where fault creep has been observed and recorded.




Square on fault indicates where fault creep slippage has occured that has been triggered by an earthquake on some other fault. Date of causative earthquake indicated. Squares to right and left of date indicate terminal points between which triggered creep slippage has occurred (creep either continuous or intermittent between these end points).



Holocene fault displacement (during past 11,700 years) without historic record. Geomorphic evidence for Holocene faulting includes sag ponds, scarps showing little erosion, or the following features in Holocene age deposits: offset stream courses, linear scarps, shutter ridges, and triangular faceted spurs. Recency of faulting offshore is based on the interpreted age of the youngest strata displaced by faulting.



Late Quaternary fault displacement (during past 700,000 years). Geomorphic evidence similar to that described for Holocene faults except features are less distinct. Faulting may be younger, but lack of younger overlying deposits precludes more accurate age classification.



Quaternary fault (age undifferentiated). Most faults of this category show evidence of displacement sometime during the past 1.6 million years; possible exceptions are faults which displace rocks of undifferentiated Plio-Pleistocene age. Unnumbered Quaternary faults were based on Fault Map of California, 1975. See Bulletin 201, Appendix D for source data.



Pre-Quaternary fault (older that 1.6 million years) or fault without recognized Quaternary displacement. Some faults are shown in this category because the source of mapping used was of reconnaissnce nature, or was not done with the object of dating fault displacements. Faults in this category are not necessarily inactive.

Source: Bryant, W.A. and Jennings, C.W., 2012 Fault Activity Map of California: California Geological Survey, Geologic Data Map No. 6, State of California: Department of Conservation, Sacramento, CA.


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FAULT ACTIVITY MAP

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| DRAWN REG | CHECKED BCY |

FIGURE NO. 5.2

## ADDITIONAL FAULT SYMBOLS

Bar and ball on downthrown side (relative or apparent).

Arrows along fault indicate relative or apparent direction of lateral movement.

Arrow on fault indicates direction of dip.

Low angle fault (barbs on upper plate). Fault surface generally dips less than 45° but locally may have been subsequently steepened. On offshore faults, barbs simply indicate a reverse fault regardless of steepness of dip.

## OTHER SYMBOLS

Numbers refer to annotations listed in the appendices of the accompanying report. Annotations include fault name, age of fault displacement, and pertinent references including Earthquake Fault Zone maps where a fault has been zoned by the Alquist-Priolo Earthquake Fault Zoning Act. This Act requires the State Geologist to delineate zones to encompass faults with Holocene displacement.

Structural discontinuity (offshore) separating differing Neogene structural domains. May indicate discontinuities between basement rocks.

Brawley Seismic Zone, a linear zone of seismicity locally up to 10 km wide associated with the releasing step between the Imperial and San Andreas faults.

| Geologic Time Scale | | | Years Before Present (Approx.) | Fault Symbol | Recency of Movement | DESCRIPTION | |
|---|---|---|---|---|---|---|---|
| | | | | | | ON LAND | OFFSHORE |
| Quaternary | Late Quaternary | Historic | | | | Displacement during historic time (e.g. San Andreas fault 1906). Includes areas of known fault creep. | |
| | | Holocene | 200 | | ? ? ? | Displacement during Holocene time. | Fault offsets seafloor sediments or strata of Holocene age. |
| | | Pleistocene | 11,700 | | ? ? | Faults showing evidence of displacement during late Quaternary time. | Fault cuts strata of Late Pleistocene age. |
| | Early Quaternary | | 700,000 | | ? | Undivided Quaternary faults - most faults in this category show evidence of displacement during the last 1,600,000 years; possible exceptions are faults which displace rocks of undifferentiated Plio-Pleistocene age. | Fault cuts strata of Quaternary age. |
| Pre-Quaternary | | | 1,600,000* | | | Faults without recognized Quaternary displacement or showing evidence of no displacement during Quaternary time. Not necessarily inactive. | Fault cuts strata of Pliocene or older age. |
| | | | 4.5 billion (Age of Earth) | | | | |

* Quaternary now recognized as extending to 2.6 Ma (Walker and Geissman, 2009). Quaternary faults in this map were established using the previous 1.6 Ma criterion.

Source: Bryant, W.A. and Jennings, C.W., 2012 Fault Activity Map of California: California Geological Survey, Geologic Data Map No. 6, State of California: Department of Conservation, Sacramento, CA.

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APN 226-120-10, 226-120-11, 226-140-04
FAULT ACTIVITY MAP

| | |
|---|---|
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| DRAWN | REG |
| CHECKED | BCY |

FIGURE NO. 5.3

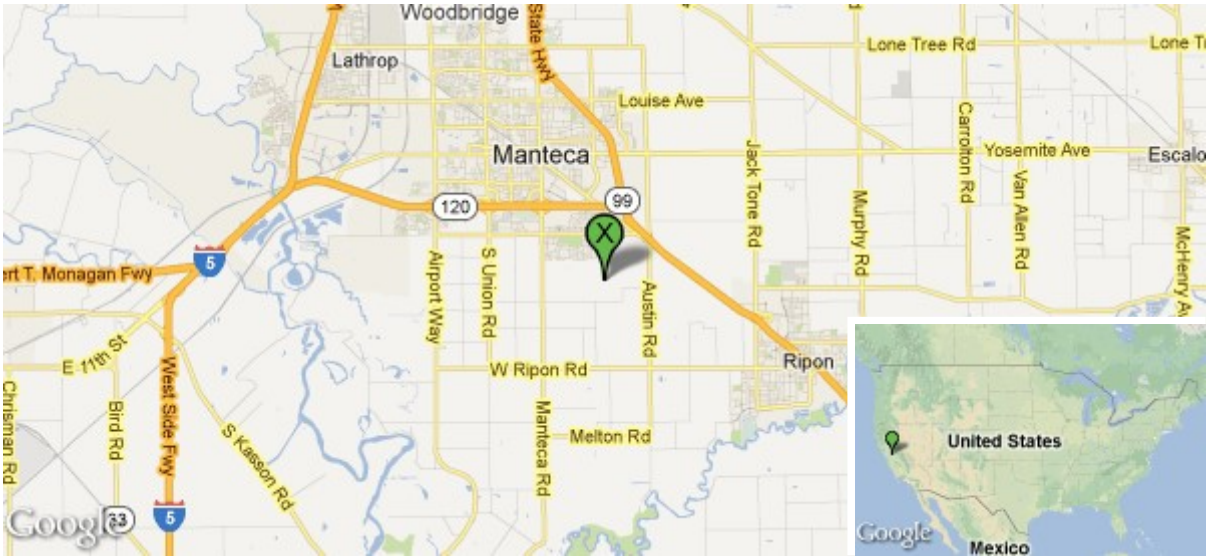
# ATTACHMENT A

## USGS Design Maps Summary Report

# USGS Design Maps Summary Report

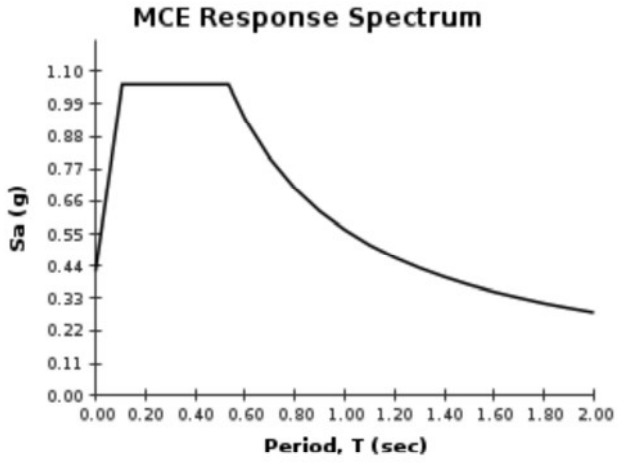
## User–Specified Input

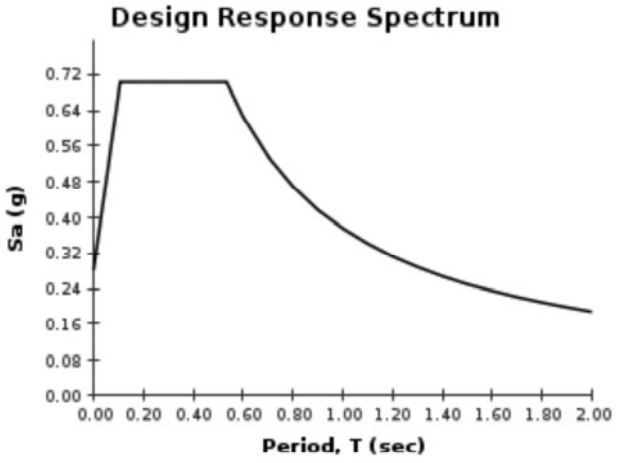
| | |
|---|---|
| **Building Code Reference Document** | ASCE 7-05 Standard (which makes use of 2002 USGS hazard data) |
| **Site Coordinates** | 37.7635°N, 121.1943°W |
| **Site Soil Classification** | Site Class D – "Stiff Soil" |
| **Occupancy Category** | Occupancy Category I |




## USGS–Provided Output

| | | | | | |
|---|---|---|---|---|---|
| $S_S$ = | 0.938 g | $S_{MS}$ = | 1.055 g | $S_{DS}$ = | 0.703 g |
| $S_1$ = | 0.320 g | $S_{M1}$ = | 0.564 g | $S_{D1}$ = | 0.376 g |




Although this information is a product of the U.S. Geological Survey, we provide no warranty, expressed or implied, as to the accuracy of the data contained therein. This tool is not a substitute for technical subject-matter knowledge.

# ATTACHMENT B

## USDA NRCS Soil Report

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

# Custom Soil Resource Report for San Joaquin County, California

## Hat Property




November 27, 2012

# Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

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# How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report
## Soil Map



## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**
- Soil Map Units

**Special Point Features**
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

**Special Line Features**
- Gully
- Short Steep Slope
- Other

**Political Features**
- Cities

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

## MAP INFORMATION

Map Scale: 1:8,800 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 10N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Joaquin County, California
Survey Area Data: Version 6, Jul 25, 2008

Date(s) aerial images were photographed: 6/12/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Map Unit Legend

| San Joaquin County, California (CA077) | | | |
|---|---|---|---|
| **Map Unit Symbol** | **Map Unit Name** | **Acres in AOI** | **Percent of AOI** |
| 141 | Delhi fine sand, 0 to 5 percent slopes | 31.5 | 17.4% |
| 142 | Delhi loamy sand, 0 to 2 percent slopes | 121.9 | 67.2% |
| 255 | Tinnin loamy coarse sand, 0 to 2 percent slopes | 28.1 | 15.5% |
| **Totals for Area of Interest** | | **181.4** | **100.0%** |

# Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If

intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

# San Joaquin County, California

## 141—Delhi fine sand, 0 to 5 percent slopes

### Map Unit Setting

*Elevation:* 30 to 110 feet
*Mean annual precipitation:* 11 inches
*Mean annual air temperature:* 61 degrees F
*Frost-free period:* 270 days

### Map Unit Composition

*Delhi and similar soils:* 85 percent
*Minor components:* 15 percent

### Description of Delhi

#### Setting

*Landform:* Dunes
*Landform position (two-dimensional):* Summit
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Wind-modified alluvium derived from granitic rock sources

#### Properties and qualities

*Slope:* 0 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Somewhat excessively drained
*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (5.95 to 19.98 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Maximum salinity:* Nonsaline (0.0 to 2.0 mmhos/cm)
*Available water capacity:* Low (about 4.7 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 3s
*Land capability (nonirrigated):* 4s

#### Typical profile

*0 to 10 inches:* Fine sand
*10 to 60 inches:* Fine sand

### Minor Components

#### Tinnin

*Percent of map unit:* 8 percent

#### Veritas

*Percent of map unit:* 7 percent

## 142—Delhi loamy sand, 0 to 2 percent slopes

### Map Unit Setting

*Elevation:* 30 to 140 feet
*Mean annual precipitation:* 11 inches
*Mean annual air temperature:* 61 degrees F
*Frost-free period:* 270 days

### Map Unit Composition

*Delhi and similar soils:* 85 percent
*Minor components:* 15 percent

### Description of Delhi

#### Setting

*Landform:* Dunes
*Landform position (two-dimensional):* Summit
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Wind-modified alluvium derived from granitic rock sources

#### Properties and qualities

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Somewhat excessively drained
*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (5.95 to 19.98 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Maximum salinity:* Nonsaline (0.0 to 2.0 mmhos/cm)
*Available water capacity:* Low (about 4.8 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 3s
*Land capability (nonirrigated):* 4s

#### Typical profile

*0 to 16 inches:* Loamy sand
*16 to 26 inches:* Loamy sand
*26 to 60 inches:* Sand

### Minor Components

#### Honcut

*Percent of map unit:* 5 percent

#### Tinnin

*Percent of map unit:* 4 percent

**Veritas**
*Percent of map unit:* 4 percent

**Steeper slopes**
*Percent of map unit:* 2 percent

## 255—Tinnin loamy coarse sand, 0 to 2 percent slopes

**Map Unit Setting**
*Elevation:* 20 to 70 feet
*Mean annual precipitation:* 11 inches
*Mean annual air temperature:* 61 degrees F
*Frost-free period:* 270 days

**Map Unit Composition**
*Tinnin and similar soils:* 85 percent
*Minor components:* 15 percent

**Description of Tinnin**

**Setting**
*Landform:* Alluvial fans
*Landform position (two-dimensional):* Footslope
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Alluvium derived from granitic rock sources

**Properties and qualities**
*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (5.95 to 19.98 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Maximum salinity:* Nonsaline (0.0 to 2.0 mmhos/cm)
*Available water capacity:* Low (about 3.9 inches)

**Interpretive groups**
*Land capability classification (irrigated):* 3s
*Land capability (nonirrigated):* 4s

**Typical profile**
*0 to 28 inches:* Loamy coarse sand
*28 to 53 inches:* Loamy coarse sand
*53 to 75 inches:* Loamy coarse sand

### Minor Components

**Delhi**
*Percent of map unit:* 4 percent

**Honcut**
*Percent of map unit:* 3 percent

**Manteca**
*Percent of map unit:* 3 percent

**Veritas**
*Percent of map unit:* 3 percent

**Timor**
*Percent of map unit:* 1 percent

**Med text substratum**
*Percent of map unit:* 1 percent

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# HAT RANCH PROPERTY
MANTECA, CALIFORNIA

# GEOTECHNICAL EXPLORATION

SUBMITTED TO
Kyle Masters
Richland Communities, Inc.
1508 Eureka Road, Suite 140
Roseville, CA 95661

PREPARED BY
ENGEO Incorporated

January 18, 2019

PROJECT NO.
10175.000.000

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ENGEO
Expect Excellence

Project No.
10175.000.000

January 18, 2019

Mr. Kyle Masters
Richland Communities
1508 Eureka Road, Suite 140
Roseville, CA 95661

Subject: Hat Ranch Property
9701 Sedan Avenue
Manteca, California

**GEOTECHNICAL EXPLORATION**

Dear Mr. Masters:

ENGEO prepared this geotechnical report for Hat Ranch as outlined in our proposal dated October 31, 2018. We characterized the subsurface conditions at the site to provide the enclosed geotechnical recommendations for design.

Our experience and that of our profession clearly indicate that the risk of costly design, construction, and maintenance problems can be significantly lowered by retaining the design geotechnical engineering firm to review the project plans and specifications and provide geotechnical observation and testing services during construction. Please let us know when working drawings are nearing completion, and we will be glad to discuss these additional services with you.

If you have any questions or comments regarding this report, please call and we will be glad to discuss them with you.

Sincerely,

ENGEO Incorporated

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**APPENDIX B** – Laboratory Test Data

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# 1.0 INTRODUCTION

## 1.1 PURPOSE AND SCOPE

ENGEO prepared this geotechnical report for design of the proposed residential development located in Manteca, California. We prepared this report as outlined in our proposal dated October 31, 2018. Richland Communities authorized ENGEO to conduct the following scope of services:

- Subsurface field exploration
- Soil laboratory testing
- Double Ring Infiltration Testing
- Data analysis and conclusions
- Report preparation

For our use, we received a Conceptual Site Plan dated August 30, 2018, prepared by MacKay and Somps.

Based on the geological and geotechnical data gathered, this report addresses the following:

- Physical properties of the typical soil encountered at the site.
- Seismic considerations from nearby faults.
- Treatment of geotechnical constraints such as non-engineered or undocumented fill, loose surface soils, soft soils, expansive soils and liquefiable soils, as necessary.
- Grading recommendations.
- Design criteria and recommended foundation type for the proposed residential structures.
- Stormwater basin design recommendations, including approximate depths to groundwater and a recommended infiltration rate.
- Preliminary pavement design based on one R-value.
- Concrete flatwork recommendations.
- Drainage and construction dewatering considerations.
- Utility backfill recommendations.

ENGEO previously performed a limited groundwater study at the site to determine the depths to groundwater in the vicinity of previously proposed stormwater basins. Any relevant information obtained during our groundwater study was utilized during the preparation of this Geotechnical Exploration.

This report was prepared for the exclusive use of our client and their consultants for design of this project. In the event that any changes are made in the character, design or layout of the development, we must be contacted to review the conclusions and recommendations contained in this report to evaluate whether modifications are recommended. This document may not be reproduced in whole or in part by any means whatsoever, nor may it be quoted or excerpted without our express written consent.

## 1.2 PROJECT LOCATION

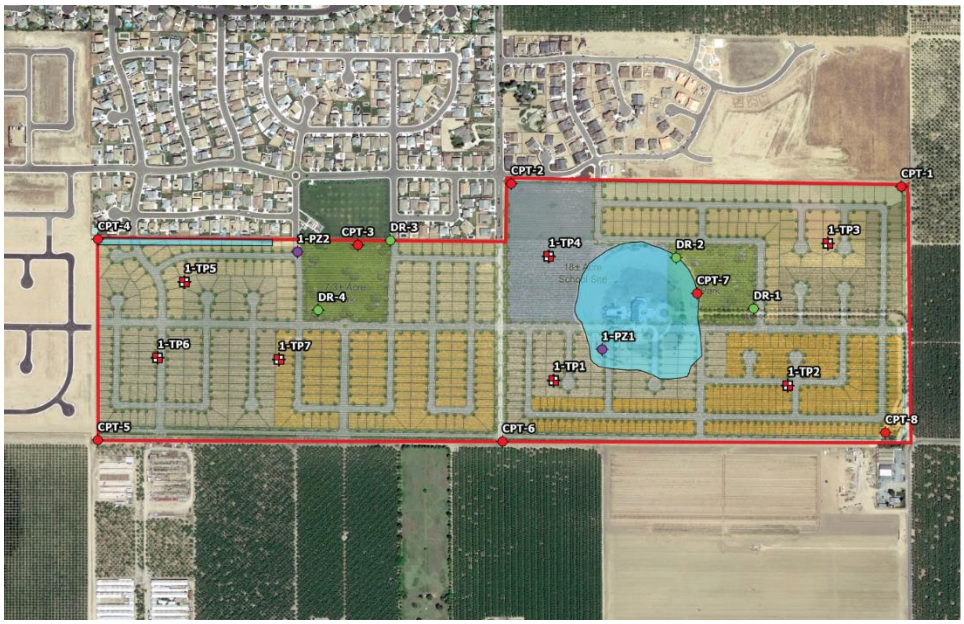
The site at the time of our exploration consisted of active vineyards, an approximately 30,000-square-foot private residence, ancillary structures for the agriculture activities, and a tree-lined concrete driveway. Figure 1.2-1 displays the Site Vicinity Map. This site is located in Manteca, California east of Austin Road at 9701 Sedan Avenue. Access to site is at the southeast corner of the site from Sedan Avenue.

**FIGURE 1.2-1: Site Vicinity Map**




Figure 1.2-2 shows site boundaries and our exploration locations. Active farmland borders the site to the east and south, and residential homes to the west and north.

**FIGURE 1.2-2: Site Boundaries and our Exploration Locations**



### 1.3 PROJECT DESCRIPTION

It is our understanding that the proposed development will consist of approximately 703 one - to two-story residential lots, interior streets and utilities, two approximately 7-acre park basins, and an approximately 18-acre school site. For the purpose of this report, we assume the school site will be evaluated separately and therefore specific school site recommendations have not been provided.

## 2.0 FINDINGS

### 2.1 FIELD EXPLORATION

Our field exploration included excavating seven test pits, advancing eight Cone Penetration Test (CPT) soundings, and performing four infiltration tests utilizing double-ring infiltrometer equipment (ASTM D3385-09 Standard Test Method for Infiltration Rate of Soils in Field Using Double-Ring Infiltrometer) at various locations on the site as shown on Figure 2. We performed our field exploration on December 18 and December 20, 2018.

The location and elevations of our explorations are approximate and were estimated by use of aerial photos and measuring distances from existing landmarks. They should be considered accurate only to the degree implied by the method used.

#### 2.1.1 Test Pits

We observed excavation of seven test pits and four double ring infiltration test pits at the approximate locations shown on the Site Plan, Figure 2. An ENGEO representative observed the test pit excavations and logged the subsurface conditions at each location. We retained a mini-excavator to excavate the test pits using a 2-foot-wide bucket and logged the type, location, and uniformity of the underlying soil. The maximum depth excavated was approximately 9½ feet.

We obtained bulk soil samples from the test pits using hand sampling techniques. The test pit logs present descriptions and graphically depict the subsurface conditions encountered. We used the field logs to develop the report logs in Appendix A. The logs depict subsurface conditions at the exploration locations for the date of exploration; however, subsurface conditions may vary with time.

#### 2.1.2 Infiltration Test Results

We performed two double-ring infiltration tests in each of the proposed park/basin locations at the locations shown on Figure 2. The infiltration rate for the double-ring infiltrometer was calculated using the following equation from ASTM D3385:

$$VIR = \Delta VIR / (AIR * \Delta t)$$

Where:

| | |
|---|---|
| VIR = | inner ring incremental infiltration velocity, cm/hr |
| ΔVIR = | volume of liquid used during time interval to maintain constant head in the inner ring, cm3 |
| AIR = | interior area of inner ring, cm2 |
| Δt = | time interval, h |

Based on the encountered soil type, the soil would be anticipated to have an infiltration rate that is typical for Type A soil (Typical Infiltration Rate of >1.0 in/hr) as presented in Table 3-1 of the Multi-Agency Post Construction Stormwater Standards Manual. Table 2.1.2-1 below presents the results of our infiltration testing at the four locations across the site.

**TABLE 2.1.2-1: Infiltration Testing Results**

| TEST LOCATION | SOIL TYPE (USCS Soil Classification) | IN/HR |
|---|---|---|
| DR-1 | Silty Sand (SM) to Poorly Graded Sand with Silt (SP-SM) | 1.8 |
| DR-2 | Silty Sand (SM) to Poorly Graded Sand with Silt (SP-SM) | 2.0 |
| DR-3 | Silty Sand (SM) to Poorly Graded Sand with Silt (SP-SM)) | 4.0 |
| DR-4 | Silty Sand (SM) to Poorly Graded Sand with Silt (SP-SM) | 1.5 |

Our test pit explorations indicate the proposed bottom of the stormwater basins are founded in Silty Sand to Poorly Graded Sand with Silt (SP-SM). Based on the infiltration test results and the subsurface conditions encountered within the basins, we recommend an infiltration rates of 1.8 and 1.5 inches per hour (in/hr) for design of the eastern and western stormwater park basins, respectively. Based on limited exploration information relative to the size of the site, subsurface conditions and therefore infiltration rates may vary across the site. The rates provided above assume routine maintenance to limit siltation or fine accumulation and overgrowth within the basin during operation.

### 2.1.3 Cone Penetration Tests

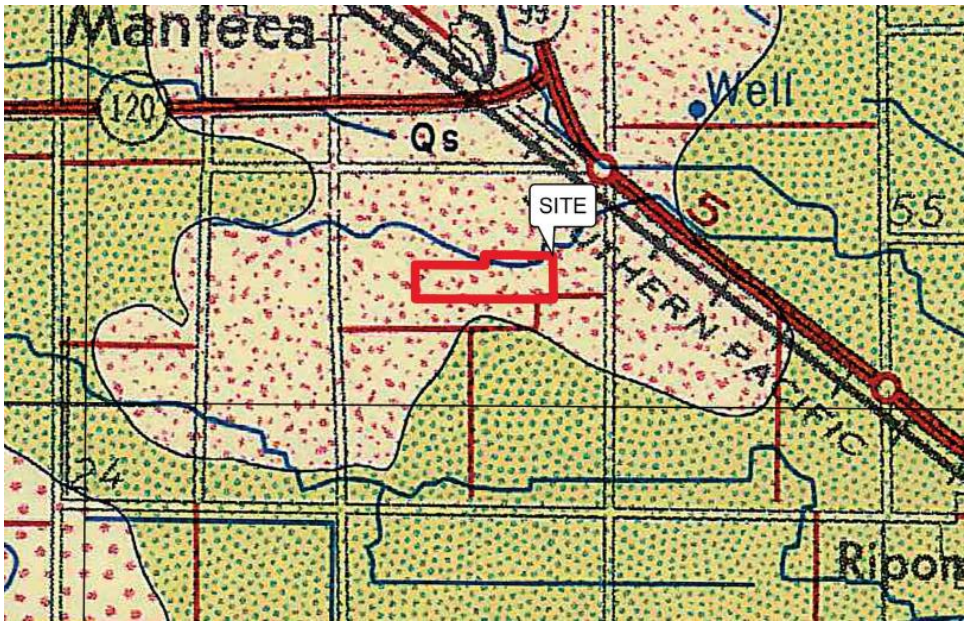
We retained a CPT rig to push the cone penetrometer to a maximum depth of approximately 50 feet. The CPT has a 20-ton compression-type cone with a 15-square-centimeter ($cm^2$) base area, an apex angle of 60 degrees, and a friction sleeve with a surface area of 225 $cm^2$. The cone, connected with a series of rods, is pushed into the ground at a constant rate. Cone readings are taken at approximately 5-cm intervals with a penetration rate of 2 cm per second in accordance with ASTM D-5778. Measurements include the tip resistance to penetration of the cone (Qc), the resistance of the surface sleeve (Fs), and pore pressure (U) (Robertson and Campanella, 1988). CPT logs are presented in Appendix A.

## 2.2 GEOLOGY AND SEISMICITY

### 2.2.1 Geology

We present the following discussion of site geology based on our field reconnaissance and review of the CGS *Geologic Map of the San Francisco-San Jose Quadrangle* (Wagner, Bortugno, and McJunkin 1991) as shown on Figure 2.2.1-1.

**FIGURE 2.2.1-1: CGS *Geologic Map of the San Francisco-San Jose Quadrangle***




The site is located in the Great Valley geomorphic province. The Great Valley is an elongate, northwest-trending structural trough bound by the Coast Range on the west and the Sierra Nevada on the east. The Great Valley has been, and at present being, filled with sediments primarily derived from the Sierra Nevada.

Our site reconnaissance and previously referenced geologic map indicate that the underlying geologic formation at the site is the Holocene Dune Sand (Qs). The Holocene Dune Sand is described as eolian sands, silts, and clays.

### 2.2.2 Seismicity

The site is located in an area of moderate to high seismicity. No known active[1] faults cross the property and the site is not located within an Earthquake Fault Special Study Zone; however, large (greater than Moment Magnitude 7) earthquakes have historically occurred in the region and many earthquakes of low magnitude occur every year. Figure 4, Regional Faulting and Seismicity, shows the approximate locations of nearby faults and significant earthquakes recorded within the region. The two nearest earthquake faults zoned as active by the State of California Geological Survey are the Great Valley 7 fault located approximately 14 miles to the southwest and the Greenville fault, located about 25 miles to the southwest.

The Great Valley fault is a blind thrust fault with no known surface expression; the postulated fault location has been based on historical regional seismic activity and isolated subsurface information. Portions of the Great Valley fault are considered seismically active thrust faults; however, since the Great Valley fault segments are not known to extend to the ground surface, the State of California has not defined Earthquake Fault Hazard Zones around the postulated traces. The Great Valley fault is considered capable of causing significant ground shaking at the

[1] An active fault is defined by the California Geologic Survey as one that has had surface displacement within Holocene time (about the last 11,000 years). The State of California has prepared maps designating zones for special studies that contain these active earthquake faults.

site, but the recurrence interval is believed longer than for more distant, strike-slip faults. Recent studies by Eaton 1986, Moores 1991, and Wong 1989 suggest that this boundary fault may have been the cause of the Vacaville-Winters earthquake sequence of April 1892.

Further seismic activity can be expected to continue along the western margin of the Central Valley.

Other active faults capable of producing significant ground shaking at the site include the Ortigalita Fault, 36 miles south; Calaveras Fault, 40 miles southwest; the Hayward Fault, 45 miles southwest; and the San Andreas Fault, 60 miles southwest of the site. Any one of these faults could generate an earthquake capable of causing strong ground shaking at the subject site. Earthquakes of Moment Magnitude 7 and larger have historically occurred in the nearby Bay Area and numerous small magnitude earthquakes occur every year.

## 2.3 SURFACE CONDITIONS

We observed the following site features during our reconnaissance:

- A large private residence atop undocumented fill that is approximately 10 to 12 feet high at the center including an underground parking structure, concrete roundabout, and associated landscape and hardscape.
- A large pool with associated pool deck and concrete pergola structures.
- A private tennis court.
- Concrete driveway lined with oak trees leading up to the residence that is approximately ½ mile in length.
- Irrigation risers in the dirt road at the center of the site in a north/south trend.
- Vineyards that cover the site.
- A large metal office/agricultural building located near the southeast corner of the site.
- A berm of artificial fill in the northwest side of the site running parallel to the property's perimeter.

Please refer to the attached Site Plan, Figure 2, for more information on site features.

## 2.4 SUBSURFACE CONDITIONS

Test pit explorations encountered sand with varying amounts of silt throughout the site to a maximum depth of 9½ feet. Groundwater was not encountered during these excavations but may fluctuate based on time of year and recent precipitation. CPT explorations indicate that the upper 15 to 20 feet consists primarily of silty sand to poorly graded sand underlain by interbedded layers of lean clay and silty and clayey sand to the maximum depth explored of 50 feet.

Consult the Site Plan and exploration logs for specific subsurface conditions at each location. We include our exploration logs in Appendix A. The logs contain the soil type, color, consistency, and visual classification in general accordance with the Unified Soil Classification System. The logs graphically depict the subsurface conditions encountered at the time of the exploration.

### 2.5 GROUNDWATER CONDITIONS

Groundwater was not observed within our recent explorations; however, ENGEO previously installed and monitored two groundwater level piezometers at the site at the locations shown on Figure 2. The Groundwater Level Study Update (ENGEO 2016) indicates that stabilized groundwater levels were on the order of elevations 32 feet and 29 feet (NGVD 29) at the locations of 1-PZ1 and 1-PZ2 respectively. These elevations correspond to a groundwater depth of approximately 10 to 12 feet below the adjacent ground surface. It should be noted that groundwater levels were observed to be as shallow as 2 feet below the ground surface for short durations corresponding to localized agricultural irrigation. For design purposes, these groundwater levels were discounted based on our assumption that future land use will have increased impermeable surfaces and will not include large-scale agricultural irrigation. For more detailed groundwater level information, please refer to the above-referenced Groundwater Level Study.

### 2.6 LABORATORY TESTING

We performed laboratory tests on selected soil samples to evaluate their engineering properties. For this project, we performed sieve analysis, moisture content, specific gravity, and resistance value testing. Laboratory test data is included in Appendix B.

## 3.0 CONCLUSIONS

From a geotechnical engineering viewpoint, the site is suitable for the proposed development, provided the geotechnical recommendations in this report are properly incorporated into the design plans and specifications.

The primary geotechnical concerns that could affect development on the site are undocumented fill, groundwater, and potentially liquefiable soils. We summarize our conclusions below.

### 3.1 GROUNDWATER

As previously noted, groundwater was observed from elevation 29 to 32 feet (NGVD 29) across the site and therefore has the potential to have a considerable impact on stormwater basin design, construction excavations, and other underground construction. Due to the existence of potential shallow groundwater conditions, construction dewatering may be necessary during underground construction. Historic groundwater elevations should be considered in the design of stormwater basins. For basin design purposes, we recommend a design-high groundwater elevation of 32½ feet (NGVD 29).

### 3.2 EXISTING FILL

Our site reconnaissance indicates that the site may contain undocumented fills on the order of 10 to 12 feet. See Figure 2 for the locations of existing fill. Undocumented fills can undergo excessive settlement, especially under new fill or building loads. Without proper documentation of existing fill placed on the site, we recommend complete removal and recompaction of the existing fill. We present fill removal recommendations in Section 5.1.

## 3.3 EXPANSIVE SOIL

Based on our subsurface exploration, laboratory test results, and project data presented in Section 2, we opine that expansive soil should not affect the proposed development.

## 3.4 SEISMIC HAZARDS

Potential seismic hazards resulting from a nearby moderate to major earthquake can generally be classified as primary and secondary. The primary effect is ground rupture, also called surface faulting. The common secondary seismic hazards include ground shaking, ground lurching, liquefaction and dynamic densification. The following sections present a discussion of these hazards as they apply to the site. Based on topographic and lithologic data, the risk of regional subsidence or uplift, lateral spreading, landslides, tsunamis, or seiches is considered low to negligible at the site.

### 3.4.1 Ground Rupture

Since there are no known active faults crossing the property and the site is not located within an Earthquake Fault Special Study Zone, it is our opinion that ground rupture is unlikely at the subject property.

### 3.4.2 Ground Shaking

An earthquake of moderate to high magnitude generated within region could cause considerable ground shaking at the site, similar to that which has occurred in the past. To mitigate the shaking effects, structures should be designed using sound engineering judgment and the 2007 California Building Code (CBC) requirements, as a minimum. Seismic design provisions of current building codes generally prescribe minimum lateral forces, applied statically to the structure, combined with the gravity forces of dead-and-live loads. The code-prescribed lateral forces are generally considered to be substantially smaller than the comparable forces that would be associated with a major earthquake. Therefore, structures should be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse but with some structural as well as nonstructural damage. Conformance to the current building code recommendations does not constitute any kind of guarantee that significant structural damage would not occur in the event of a maximum magnitude earthquake; however, it is reasonable to expect that a well-designed and well-constructed structure will not collapse or cause loss of life in a major earthquake (SEAOC, 1996).

### 3.4.3 Liquefaction

Soil liquefaction results from loss of strength during cyclic loading, such as imposed by earthquakes. Soils most susceptible to liquefaction are clean, loose, saturated, uniformly graded, fine-grained sands. Empirical evidence indicates that loose to medium-dense gravels, silty sands, and low- to moderate-plasticity silts and clays may be susceptible to liquefaction. In addition, sensitive high-plasticity soils may be susceptible to significant strength loss (cyclic softening) as a result of significant cyclic loading. The silts and clays encountered are not sensitive and, therefore, not subject to cyclic softening. We summarize the results of our liquefaction analysis below.

We evaluated the liquefaction potential of the site soil with CPT data using methods published by Robertson (2009). The Cyclic Stress Ratio (CSR) was estimated for a Peak Ground Acceleration ($PGA_M$) value of 0.50g, which is the mapped Maximum Considered Earthquake (MCE) Geometric Mean Peak Ground Acceleration based on the 201 CBC for a Site Class D. We also used a moment magnitude ($M_w$) of 6.2 in our analysis, which corresponds to the maximum magnitude for the Great Valley 7 fault based on the United States USGS national seismic hazard maps. We considered a design groundwater elevation of approximately 10 feet in our analysis as discussed in Section 2.5.

The results of our liquefaction analyses indicate relatively thin and discontinuous sand layers approximately 1 to 5 feet in thickness as potentially liquefiable. Consequences of liquefaction could include surface disruption, settlement, and downdrag on deep foundations. We estimate up to approximately 1½-inches of total and up to ½-inch of differential liquefaction-induced settlement in a design-level seismic event based on the results of our CPT liquefaction analysis. Appendix C includes the results of our CPT-based liquefaction analysis.

### 3.4.4 Ground Lurching

Ground lurching is a result of the rolling motion imparted to the ground surface during energy released by an earthquake. Such rolling motion can cause ground cracks to form in weaker soils. The potential for the formation of these cracks is considered greater at contacts between deep alluvium and bedrock. Such an occurrence is possible at the site as in other locations in the region; but based on the site location, it is our opinion that the offset is expected to be minor.

### 3.4.5 Flooding

Based on site elevation and distance from water sources, flooding is not expected at the subject site; however, the Civil Engineer should review pertinent information relating to possible flood levels for the subject site based on final pad elevations and provide appropriate design measures for development of the project, if recommended.

## 3.5 EXCAVATABILITY

We used a mini excavator during our exploratory work. Based on our observations and experience, conventional grading and backhoe equipment will likely be able to excavate the soil deposits. Excavatability information is provided for general planning purposes only and is not intended for bidding purposes.

## 3.6 2016 CBC SEISMIC DESIGN PARAMETERS

The 2016 CBC utilizes design criteria set forth in the 2010 ASCE 7 Standard. Based on the subsurface conditions encountered, we characterized the site as Site Class D in accordance with the 2016 CBC. We provide the 2016 CBC seismic design parameters in Table 3.6-1 below, which include design spectral response acceleration parameters based on the mapped Risk-Targeted Maximum Considered Earthquake (MCER) spectral response acceleration parameters.

**TABLE 3.6-1: 2016 CBC Seismic Design Parameters, Latitude:** 37.762338° **Longitude:** -121.196200°

| PARAMETER | VALUE |
|---|---|
| Site Class | D |
| Mapped $MCE_R$ Spectral Response Acceleration at Short Periods, $S_S$ (g) | 1.0 |
| Mapped $MCE_R$ Spectral Response Acceleration at 1-second Period, $S_1$ (g) | 0.36 |
| Site Coefficient, $F_A$ | 1.01 |
| Site Coefficient, $F_V$ | 1.69 |
| $MCE_R$ Spectral Response Acceleration at Short Periods, $S_{MS}$ (g) | 1.10 |
| $MCE_R$ Spectral Response Acceleration at 1-second Period, $S_{M1}$ (g) | 0.6 |
| Design Spectral Response Acceleration at Short Periods, $S_{DS}$ (g) | 0.74 |
| Design Spectral Response Acceleration at 1-second Period, $S_{D1}$ (g) | 0.4 |
| Mapped MCE Geometric Mean ($MCE_G$) Peak Ground Acceleration, PGA (g) | 0.37 |
| Site Coefficient, $F_{PGA}$ | 1.13 |
| $MCE_G$ Peak Ground Acceleration adjusted for Site Class effects, $PGA_M$ (g) | 0.42 |
| Long period transition-period, $T_L$ | 8 sec |

# 4.0 CONSTRUCTION MONITORING

Our experience and that of our profession clearly indicate that the risk of costly design, construction, and maintenance problems can be significantly lowered by retaining the design geotechnical engineering firm to:

1. Review the final grading and foundation plans and specifications prior to construction to evaluate whether our recommendations have been implemented, and to provide additional or modified recommendations, as needed. This also allows us to check if any changes have occurred in the nature, design or location of the proposed improvements and provides the opportunity to prepare a written response with updated recommendations.
2. Perform construction monitoring to check the validity of the assumptions we made to prepare this report. Earthwork operations should be performed under the observation of our representative to check that the site is properly prepared, the selected fill materials are satisfactory, and that placement and compaction of the fills has been performed in accordance with our recommendations and the project specifications. Sufficient notification to us prior to earthwork is important.

If we are not retained to perform the services described above, then we are not responsible for any party's interpretation of our report (and subsequent addenda, letters, and verbal discussions).

# 5.0 EARTHWORK RECOMMENDATIONS

The relative compaction and optimum moisture content of soil, rock, and aggregate base referred to in this report are based on the most recent ASTM D1557 test method. Compacted soil is not acceptable if it is unstable. It should exhibit only minimal flexing or pumping, as observed by an ENGEO representative.

As used in this report, the term "moisture condition" refers to adjusting the moisture content of the soil by either drying if too wet or adding water if too dry.

We define “structural areas” in Section 4 of this report as any area sensitive to settlement of compacted soil. These areas include, but are not limited to building pads, sidewalks, pavement areas, and retaining walls.

## 5.1 EXISTING FILL REMOVAL

Remove existing undocumented fill to competent native soil, as evaluated by ENGEO. Figure 2 displays the approximate lateral extent of existing fill at the site. The lateral extent and depth of fill is expected to vary.

## 5.2 GENERAL SITE CLEARING

Areas to be developed should be cleared of surface and subsurface deleterious materials, including existing building foundations, slabs, buried utility and irrigation lines, pavements, debris, and designated trees, shrubs, and associated roots. We anticipate that the onsite vineyards can be removed and the resulting excavations can be ripped and processed as described below. Clean and backfill excavations extending below the planned finished site grades (including the removal of the existing oak trees) with suitable material compacted to the recommendations presented in Section 5.5. Retain ENGEO to observe and test backfilling.

Following clearing, heavy vegetation (including the vineyards and associated roots) should be cut and removed from the site. Once the heavy vegetation is removed, ENGEO should observe the site conditions to determine if the remaining vegetation can be disked into the upper 12 inches of the site or if additional vegetation will need to be removed prior to disking the site.

## 5.3 OVER-OPTIMUM SOIL MOISTURE CONDITIONS

The contractor should anticipate encountering excessively over-optimum (wet) soil moisture conditions during winter or spring grading, or during or following periods of rain. In addition, wet soil conditions may be found during excavation operations. Wet soil can make proper compaction difficult or impossible. Wet soil conditions can be mitigated by:

- Frequent spreading and mixing during warm dry weather.
- Mixing with drier materials; or
- Stabilizing with aggregate, geotextile stabilization fabric, or both.

Options should be evaluated by ENGEO prior to implementation.

## 5.4 ACCEPTABLE FILL

Onsite soil material, including undocumented fill, is suitable as fill material provided it is processed to remove concentrations of organic material, debris, and particles greater than 6 inches in maximum dimension.

Imported fill materials should meet the above requirements and have a plasticity index of less than 12. Allow ENGEO to sample and test proposed imported fill materials at least 5 days prior to delivery to the site.

## 5.5 FILL COMPACTION

### 5.5.1 Grading in Structural Areas

After removing the existing vineyards, surface vegetation and undocumented fill, areas to receive fill should be scarified 12 inches in depth. Moisture condition and compact the exposed surface to provide adequate bonding with the initial fill lift. All fills should be placed in lifts not exceeding 12 inches in maximum loose thickness. During grading activities, ENGEO will make additional recommendations to address site-specific conditions.

- Grading operations should have a maximum particle size of 6 inches.
- Moisture condition material to at least 1 percentage point above optimum for non-expansive soils.
- Place fill in loose lifts not exceeding 12 inches.
- Compact fill to a minimum of 90 percent for native soils and 95 percent for road subgrade and aggregate base (ASTM D1557).

### 5.5.2 Underground Utility Backfill

Place and compact trench backfill as follows:

- Trench backfill should have a maximum particle size of 6 inches.
- Moisture condition material outside the trench to at least 3 percent above the optimum moisture content for expansive soils (if encountered) and 1 percentage point above optimum for non-expansive soils.
- Place fill in loose lifts not exceeding 12 inches.
- Compact fill to a minimum of 90 percent for native soils and 95 percent for road subgrade and aggregate base (ASTM D1557).

#### 5.5.2.1 General

The contractor is responsible for conducting trenching and shoring in accordance with CALOSHA requirements. Project consultants involved in utility design should specify pipe bedding materials.

## 5.6 SLOPE GRADIENTS

Final slope gradients should be constructed to 3:1 (horizontal:vertical) or flatter unless individually evaluated by ENGEO. The contractor is responsible to construct temporary construction slopes in accordance with CALOSHA requirements.

## 5.7 SITE DRAINAGE

The project civil engineer is responsible for designing surface drainage improvements. With regard to geotechnical engineering issues, we recommend that finish grades be sloped away from buildings and pavements to the maximum extent practical. The latest California Building Code Section 1804.4 specifies minimum slopes of 5 percent away from foundations. Where

development conditions restrict meeting this slope requirement, we recommend that specific drainage requirements be developed. As a minimum, we recommend the following:

- Discharge roof downspouts into closed conduits and direct away from foundations to appropriate drainage devices.
- Do not allow water to pond near foundations, pavements, or exterior flatwork.

# 6.0 FOUNDATION RECOMMENDATION

Below we are providing foundation recommendations in accordance with the 2016 California Building Code (CBC) using the exploratory and laboratory data discussed above. Residential Structures may either be supported on post-tensioned (PT) mat foundations or conventional footings with slabs-on-grade.

## 6.1 POST-TENSIONED MAT FOUNDATIONS

The following post-tensioned mat soil design parameters were developed according to methods recommended in PTI's "Design of Post-Tensioned Slabs-on-Ground, Third Edition" (2004), including appropriate addenda. Sulfate testing has not been performed at the subject site. The PT mats can be designed to impose an average allowable bearing pressure of 1,000 pounds per square foot (psf) for dead-plus-live loads, with maximum localized bearing pressures of 1,500 psf at column or wall loads. Allowable bearing pressures can be increased by one-third for all loads, including wind or seismic. PT mats should be designed for a total settlement of 1½ inches and ½ inch of differential settlement over the span of the foundation.

Design PT mats using the criteria presented in Table 6.1-1 below.

**TABLE 6.1-1: Post-Tensioned Mat Design Recommendations**

| CONDITION | CENTER LIFT | EDGE LIFT |
|---|---|---|
| Edge Moisture Variation Distance, $e_m$ (feet) | **5.3** | **2.7** |
| Differential Soil Movement, $y_m$ (inches) | **0.1** | **0.3** |

The above values are based on the procedure presented by the Post-Tensioning Institute "Design of Post-Tensioned Slabs-on-Ground" Third Edition, including appropriate addenda (2004).

Underlay PT mats with a moisture reduction system as recommended below in Section 6.4. The upper 12 inches of all building pads should be moisture conditioned to not less than 1 percentage points above the optimum moisture content prior to concrete placement. We also recommend that ENGEO be retained to observe the pre-pour moisture conditions to observe that these recommendations have been followed.

Prior to foundation construction, some sulfate testing should be performed on the building pads to determine if sulfate-resistant concrete is needed for the foundations.

## 6.2 CONVENTIONAL FOOTINGS WITH SLAB-ON-GRADE

The proposed structures can also be supported on continuous or isolated spread footings bearing in competent native soil or compacted fill.

### 6.2.1 Footing Dimensions and Allowable Bearing Capacity

Provide minimum footing dimensions as follows in the Table 6.2.1-1 below.

**TABLE 6.2.1-1: Minimum Footing Dimensions**

| FOOTING TYPE | *MINIMUM DEPTH |
|---|---|
| Continuous / Isolated | 12-inches for Single-Story Structures<br>18-inches for Two-Story Structures |

*below lowest adjacent pad grade

Minimum footing depths shown above are taken from lowest adjacent pad grade. The cold joint between the exterior footing and slab-on-grade should be located at least 4 inches above adjacent exterior grade.

Design foundations recommended above for a maximum allowable bearing pressure of 1,500 pounds per square foot (psf) for dead-plus-live loads. Increase this bearing capacity by one-third for the short-term effects of wind or seismic loading.

The maximum allowable bearing pressure is a net value; the weight of the footing may be neglected for design purposes. Footings located adjacent to utility trenches should have their bearing surfaces below an imaginary 1:1 (horizontal:vertical) plane projected upward from the bottom edge of the trench to the footing.

### 6.2.2 Waterstop

If a two-pour system is used for footings and slab, the cold joint between the exterior footing and slab-on-grade should be located at least 4 inches above adjacent finish exterior grade. If this is not done, then we recommend the addition of a waterstop between the two pours to reduce moisture penetration through the cold joint and migration under the slab. Use of a monolithic pour would eliminate the need for the waterstop.

### 6.2.3 Reinforcement

The structural engineer should design footing reinforcement to support the intended structural loads without excessive settlement. Reinforce continuous footings with top and bottom steel to provide structural continuity and to permit spanning of local irregularities. At a minimum, design continuous footings to structurally span a clear distance of 5 feet.

## 6.3 SETTLEMENT

Provided our report recommendations are followed and given the proposed construction (Section 1.3), we estimate post construction static foundation settlements will be negligible.

As noted in Section 3.2.3, total earthquake-induced settlements of up to 1½ inches can be expected under the maximum considered earthquake (MCE) as a result of liquefaction. Given site variability, differential settlements of up to ½ inch over the length of the structure could be expected under the MCE. The foundation should be designed to accommodate the cumulative static and seismically induced settlement without collapse of the structure.

### 6.3 INTERIOR CONCRETE FLOOR SLABS

We recommend the following minimum design:

- Consider a minimum concrete thickness of 5 inches.
- Consider minimum steel reinforcing of No. 3 rebar on 18-inch centers each way within the middle third of the slab to help control the width of shrinkage cracking that inherently occurs as concrete cures.

The structural engineer should provide final design thickness and reinforcement, as necessary, for the intended structural loads.

### 6.4 SLAB MOISTURE VAPOR REDUCTION

When buildings are constructed with concrete slab-on-grade, such as post-tensioned mats, water vapor from beneath the slab will migrate through the slab and into the building. This water vapor can be reduced but not stopped. Vapor transmission can negatively affect floor coverings and lead to increased moisture within a building. When water vapor migrating through the slab would be undesirable, we recommend the following to reduce, but not stop, water vapor transmission upward through the slab-on-grade.

1. Install a vapor retarder membrane directly beneath the slab. Seal the vapor retarder at all seams and pipe penetrations. Vapor retarders shall conform to Class A vapor retarder in accordance with ASTM E 1745, latest edition, “Standard Specification for Plastic Water Vapor Retarders used in Contact with Soil or Granular Fill under Concrete Slabs”.
2. Concrete shall have a concrete water-cement ratio of no more than 0.50.
3. Provide inspection and testing during concrete placement to check that the proper concrete and water cement ratio are used.
4. Moist cure slabs for a minimum of 3 days or use other equivalent curing specific by the structural engineer.

The structural engineer should be consulted as to the use of a layer of clean sand or pea gravel (less than 5 percent passing the U.S. Standard No. 200 Sieve) placed on top of the vapor retarder membrane to assist in concrete curing.

### 6.5 TRENCH BACKFILL

Backfill and compact all trenches below building slabs-on-grade and to 5 feet laterally beyond any edge in accordance with Section 5.5.2

## 7.0 PAVEMENT DESIGN

### 7.1 FLEXIBLE PAVEMENTS

We obtained a representative bulk sample of the near-surface soil and performed an R-Value tests to provide data for pavement design. The results of the test are included in Appendix B and indicate an R-Value of 73. Using estimated traffic indices for various pavement loading requirements, we developed the following recommended pavement sections using Topic 633 of

the Caltrans Highway Design Manual (including the asphalt factor of safety), presented in the table below based on an R-Value of 40 due to soils potentially varying across the site.

**TABLE 7.1-1: Recommended Asphalt Concrete Pavement Sections**

| TRAFFIC INDEX | SECTION | |
|---|---|---|
| | ASPHALT CONCRETE (INCHES) | CLASS 2 AGGREGATE BASE (INCHES) |
| 4 | 2.5 | 4.0 |
| 5 | 3.0 | 4.0 |
| 6 | 3.5 | 5.5 |
| 7 | 4.0 | 7.0 |
| 8 | 5.0 | 8.0 |
| 9 | 5.5 | 9.5 |

The civil engineer should determine the appropriate traffic indices based on the estimated traffic loads and frequencies.

### 7.2 SUBGRADE AND AGGREGATE BASE COMPACTION

Compact finish subgrade and aggregate base in accordance with Section 5.5. Aggregate Base (AB) should meet the requirements for ¾-inch maximum Class 2 AB in accordance with Section 26-1.02B of the latest Caltrans Standard Specifications.

## 8.0 SOUNDWALLS AND RETAINING WALLS

### 8.1 LATERAL SOIL PRESSURES

Design proposed retaining walls to resist lateral earth pressures from adjoining natural materials and/or backfill and from any surcharge loads. Provided that adequate drainage is included as recommended below, design walls restrained from movement at the top to resist an equivalent fluid pressure of 60 pounds per cubic foot (pcf). In addition, design restrained walls to resist an additional uniform pressure equivalent to one-half of any surcharge loads applied at the surface.

Design unrestrained retaining walls with adequate drainage to resist an equivalent fluid pressure of 40 pcf plus one-third of any surcharge loads.

The above lateral earth pressures assume level backfill conditions and sufficient drainage behind the walls to prevent any build-up of hydrostatic pressures from surface water infiltration and/or a rise in the groundwater level. If adequate drainage is not provided, we recommend that an additional equivalent fluid pressure of 40 pcf be added to the values recommended above for both restrained and unrestrained walls. Damp-proofing of the walls should be included in areas where wall moisture would be problematic.

Construct a drainage system, as recommended below, to reduce hydrostatic forces behind the retaining wall.

## 8.2 RETAINING WALL DRAINAGE

Construct either graded rock drains or geosynthetic drainage composites behind the retaining walls to reduce hydrostatic lateral forces. For rock drain construction, we recommend two types of rock drain alternatives:

- A minimum 12-inch-thick layer of Class 2 Permeable Filter Material (Caltrans Specification 68-1.025) placed directly behind the wall, or
- A minimum 12-inch-thick layer of washed, crushed rock with 100 percent passing the ¾-inch sieve and less than 5 percent passing the No. 4 sieve. Envelop rock in a minimum 6-ounce, nonwoven geotextile filter fabric.

For both types of rock drains:

- Place the rock drain directly behind the walls of the structure.
- Extend rock drains from the wall base to within 12 inches of the top of the wall.
- Place a minimum of 4-inch-diameter perforated pipe at the base of the wall, inside the rock drain and fabric, with perforations placed down.
- Place pipe at a gradient at least 1 percent to direct water away from the wall by gravity to a drainage facility.

ENGEO should review and approve geosynthetic composite drainage systems prior to use.

## 8.3 BACKFILL

Backfill behind retaining walls should be placed and compacted in accordance with Section 5.5 Use light compaction equipment within 5 feet of the wall face. If heavy compaction equipment is used, the walls should be temporarily braced to avoid excessive wall movement.

## 8.4 FOUNDATIONS

### 8.4.1 Footings

Retaining walls may be supported on continuous footings extending a minimum of 18 inches deep and designed in accordance with recommendations presented in Section 6.2.

### 8.4.2 Cast-In-Place Drilled Piers

The following design criteria should be incorporated into site retaining walls and soundwalls supported on a drilled pier foundation system. Actual pier depths and spacing should be determined by the designer based on structural design considerations.

| | |
|---|---|
| Maximum allowable skin friction: | 250 pounds per square foot (psf). This value may be increased by one-third when considering seismic or wind loads. Starting at a depth of 2 feet below adjacent grade (assuming continuous level conditions). |
| Minimum pier spacing: | 3 pier diameters, center-to-center. |

An equivalent fluid weight of 350 pounds per cubic foot acting on two times the pier diameter may be used to evaluate passive resistance, starting at a depth of 1 foot below lowest adjacent pad grade for a level foreground condition. The passive pressure may be increased by one-third for transient loads such as wind or seismic.

# 9.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

This report presents geotechnical recommendations for design of the improvements discussed in Section 1.3 for the Hat Ranch project. If changes occur in the nature or design of the project, we should be allowed to review this report and provide additional recommendations, if any. It is the responsibility of the owner to transmit the information and recommendations of this report to the appropriate organizations or people involved in design of the project, including but not limited to developers, owners, buyers, architects, engineers, and designers. The conclusions and recommendations contained in this report are solely professional opinions and are valid for a period of no more than 2 years from the date of report issuance.

We strived to perform our professional services in accordance with generally accepted geotechnical engineering principles and practices currently employed in the area; no warranty is expressed or implied. There are risks of earth movement and property damages inherent in building on or with earth materials. We are unable to eliminate all risks or provide insurance; therefore, we are unable to guarantee or warrant the results of our services.

This report is based upon field and other conditions discovered at the time of report preparation. We developed this report with limited subsurface exploration data. We assumed that our subsurface exploration data is representative of the actual subsurface conditions across the site. Considering possible underground variability of soil, rock, stockpiled material, and groundwater, additional costs may be required to complete the project. We recommend that the owner establish a contingency fund to cover such costs. If unexpected conditions are encountered, notify ENGEO immediately to review these conditions and provide additional and/or modified recommendations, as necessary.

Our services did not include excavation sloping or shoring, soil volume change factors, flood potential, or a geohazard exploration. In addition, our geotechnical exploration did not include work to determine the existence of possible hazardous materials. If any hazardous materials are encountered during construction, notify the proper regulatory officials immediately.

This document must not be subject to unauthorized reuse, that is, reusing without written authorization of ENGEO. Such authorization is essential because it requires ENGEO to evaluate the document's applicability given new circumstances, not the least of which is passage of time.

Actual field or other conditions will necessitate clarifications, adjustments, modifications or other changes to ENGEO's documents. Therefore, ENGEO must be engaged to prepare the necessary clarifications, adjustments, modifications or other changes before construction activities commence or further activity proceeds. If ENGEO's scope of services does not include on-site construction observation, or if other persons or entities are retained to provide such services, ENGEO cannot be held responsible for any or all claims arising from or resulting from the performance of such services by other persons or entities, and from any or all claims arising from or resulting from clarifications, adjustments, modifications, discrepancies or other changes necessary to reflect changed field or other conditions.

We determined the lines designating the interface between layers on the exploration logs using visual observations. The transition between the materials may be abrupt or gradual. The exploration logs contain information concerning samples recovered, indications of the presence of various materials such as clay, sand, silt, rock, existing fill, etc., and observations of groundwater encountered. The field logs also contain our interpretation of the subsurface conditions between sample locations. Therefore, the logs contain both factual and interpretative information. Our recommendations are based on the contents of the final logs, which represent our interpretation of the field logs.

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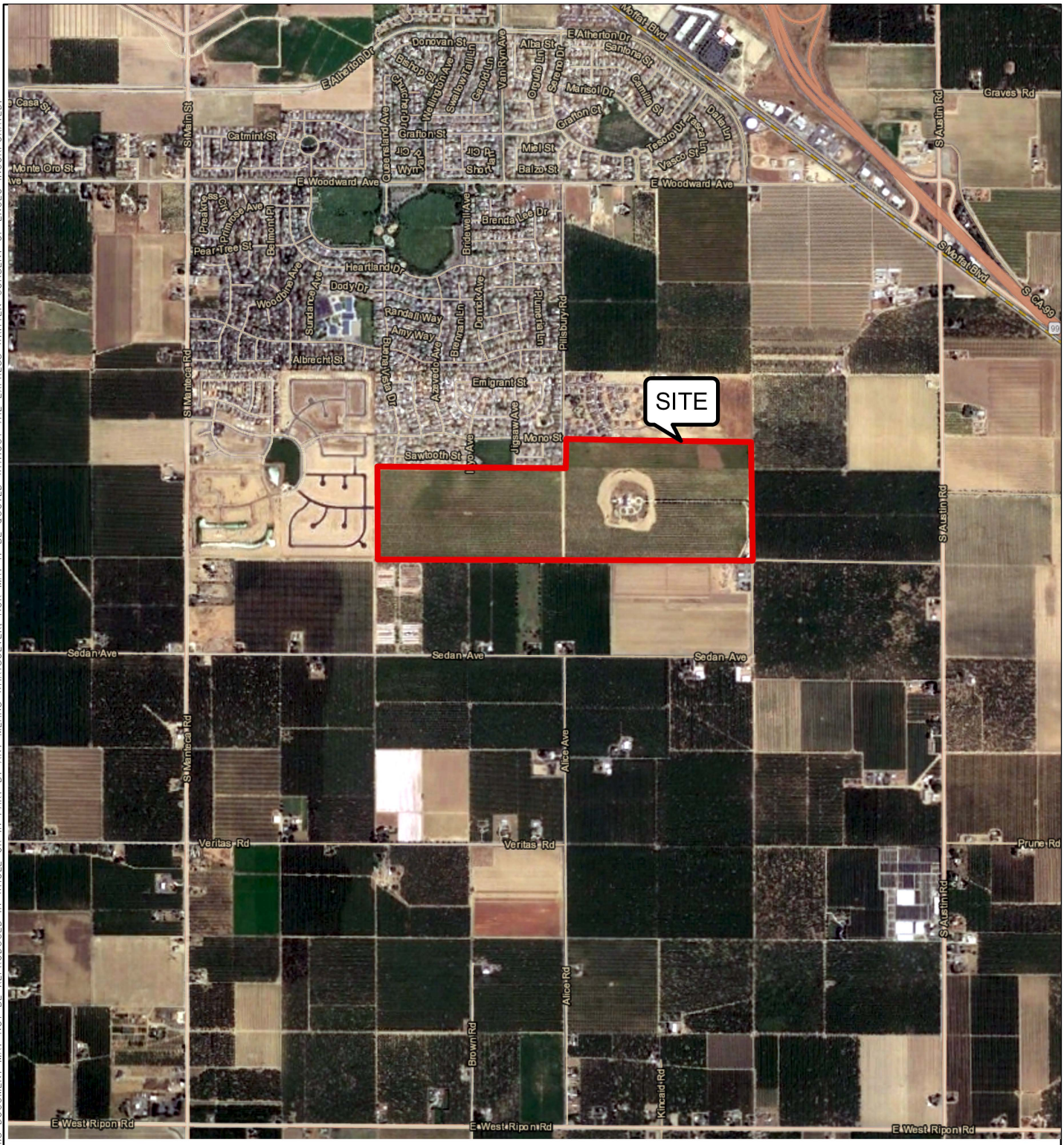
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# FIGURES

**FIGURE 1: Vicinity Map**
**FIGURE 2: Site Plan**
**FIGURE 3: Regional Geologic Map**
**FIGURE 4: Regional Faulting and Seismicity**




BASEMAP SOURCE: GOOGLE EARTH MAPPING SERVICE

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ENGEO
Expect Excellence

# VICINITY MAP

HAT RANCH

MANTECA, CALIFORNIA

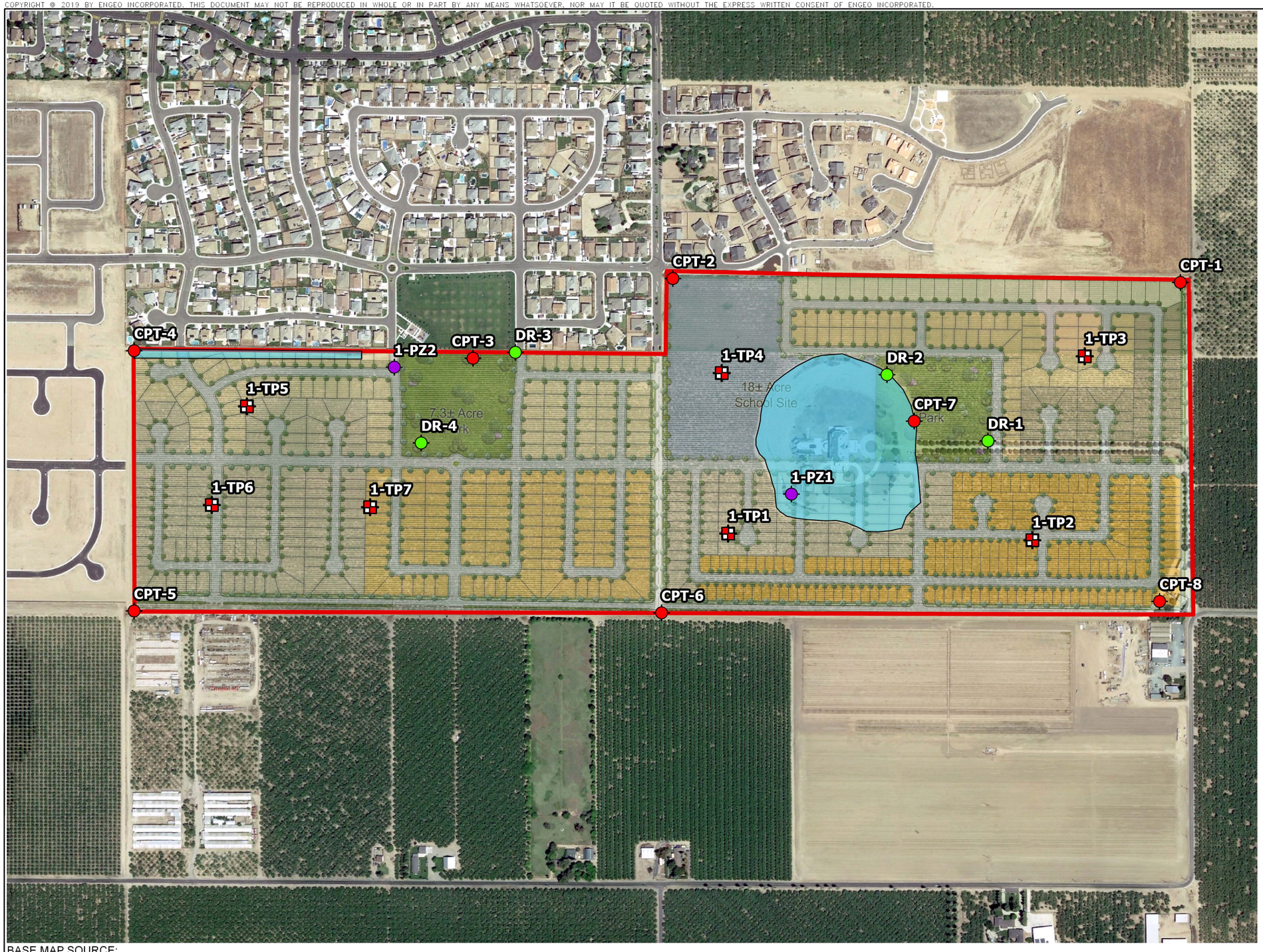
| | |
|---|---|
| PROJECT NO. : | 10175.000.000 |
| SCALE: | AS SHOWN |
| DRAWN BY: QRL | CHECKED BY: ZAC |

FIGURE NO. 1

PATH: G:\DRAFTING\DRAFTING2_DWG_10000 TO 12999\10175\000\GIS\10175 HAT RANCH.APRX
USER: QLIANG

ORIGINAL FIGURE PRINTED IN COLOR

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N

0 250 500

FEET

## EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

- PROJECT SITE
- UNDOCUMENTED FILL
- DOUBLE RING INFILTROMETER (ENGEO, 2018)
- CONE PENETRATION TEST (ENGEO, 2018)
- TEST PIT (ENGEO, 2018)
- PIEZOMETER (ENGEO, 2014)

BASE MAP SOURCE:
GOOGLE EARTH MAPPING SERVICE
RICHLAND
MACKAY & SOMPS

ENGEO Expect Excellence

# SITE PLAN

HAT RANCH

MANTECA, CALIFORNIA

PROJECT NO. : 10175.000.000

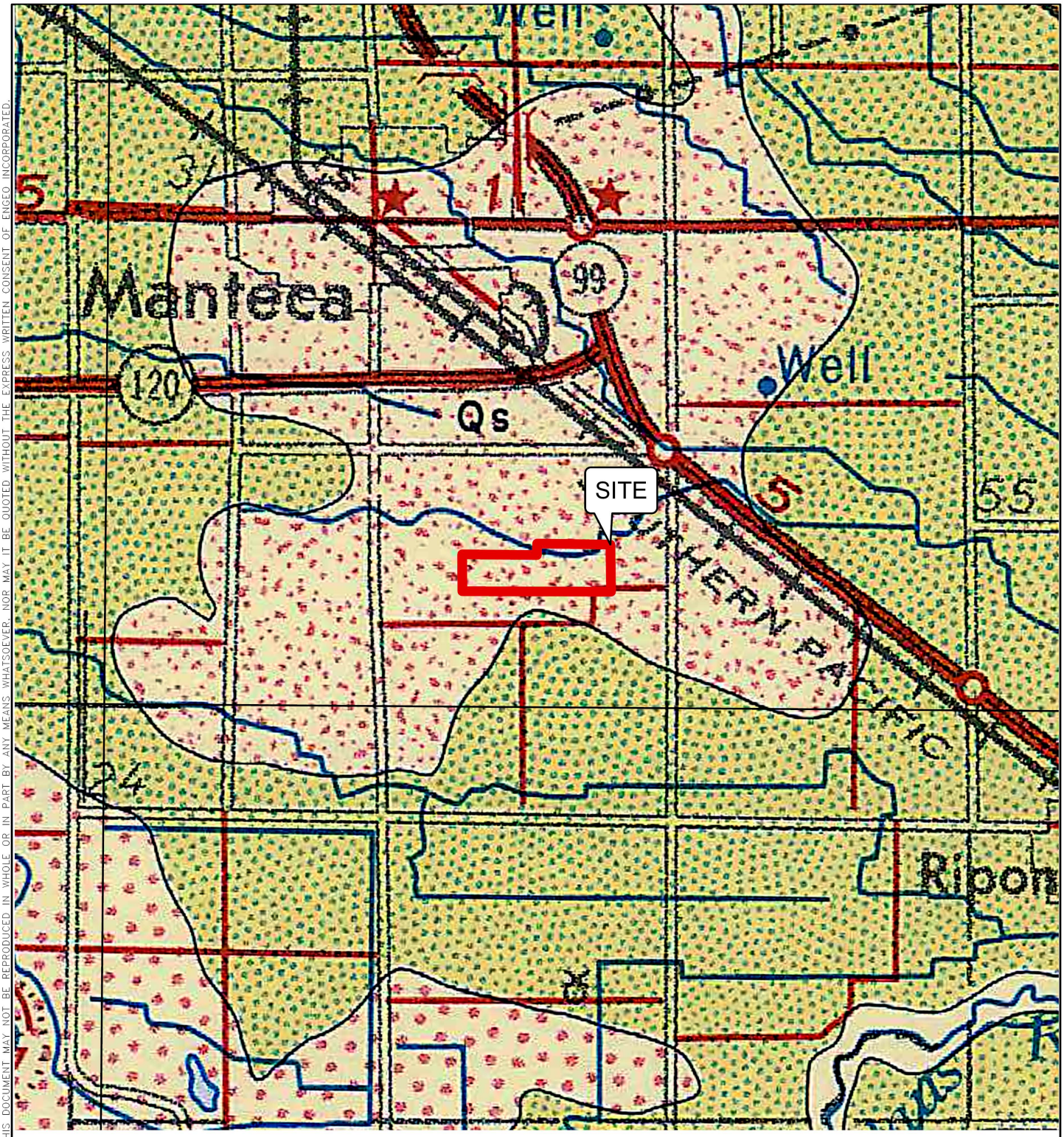
SCALE: AS SHOWN

DRAWN BY: QRL CHECKED BY: ZAC

FIGURE NO. 2

PATH: G:\DRAFTING\DRAFTING2_DWG_10000 TO 12999\10175\000\GIS\10175 HAT RANCH.APRX
USER: QLIANG

ORIGINAL FIGURE PRINTED IN COLOR




N

0 2,500 5,000

FEET

## EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

| | |
|---|---|
| Qs | DUNE SAND |
| Qdp | DOS PALOS ALLUVIUM |
| Qm | MODESTO FORMATION |

BASEMAP SOURCE: WAGNER 1991

ENGEO Expect Excellence

# REGIONAL GEOLOGIC MAP

HAT RANCH

MANTECA, CALIFORNIA

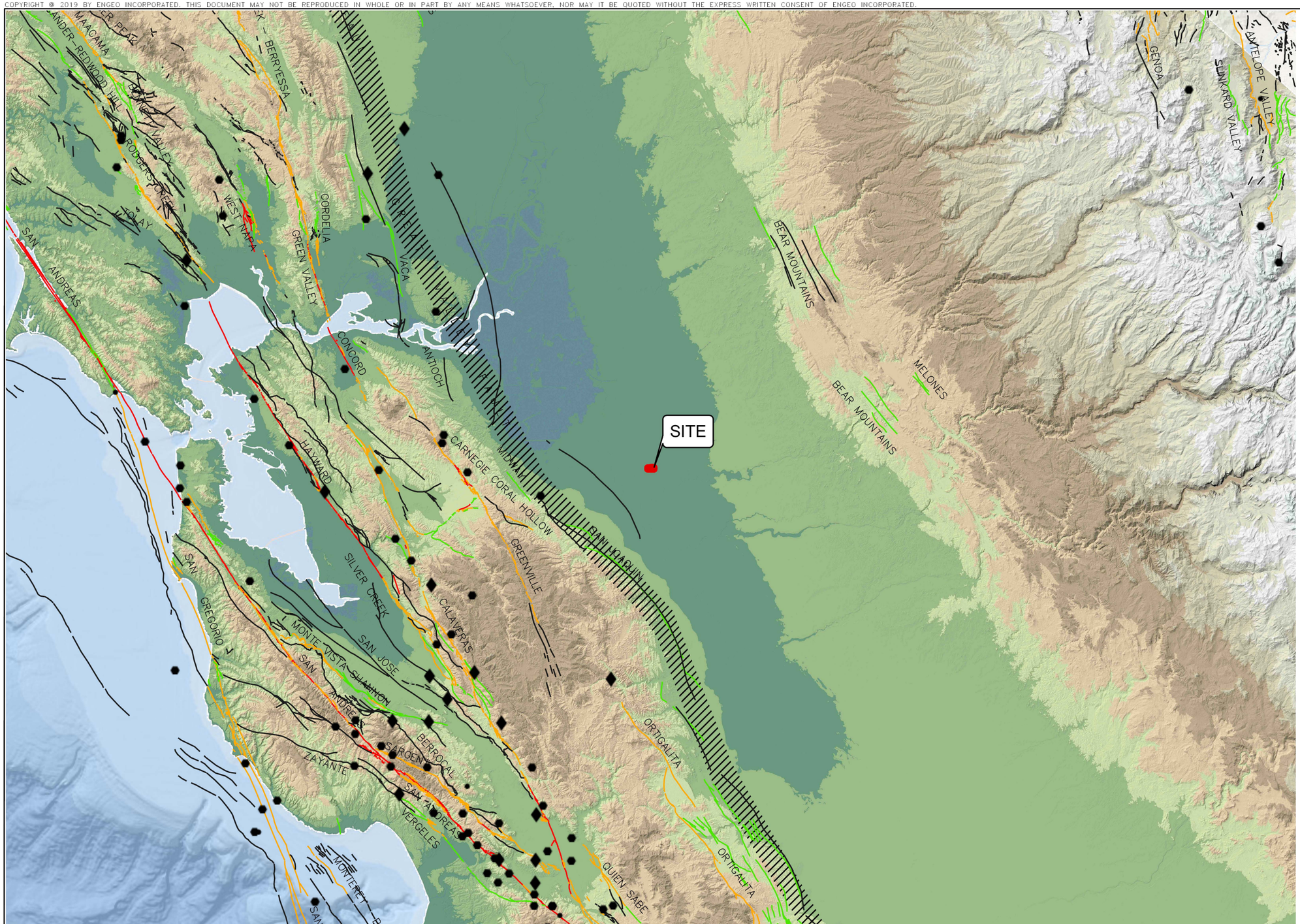
| | |
|---|---|
| PROJECT NO. : 10175.000.000 | FIGURE NO. 3 |
| SCALE: AS SHOWN | |
| DRAWN BY: QRL | CHECKED BY: ZAC |

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PATH: G:\DRAFTING\DRAFTING2_DWG_10000 TO 12999\10175\000\GIS\10175 HAT RANCH.APRX
USER: QLIANG

ORIGINAL FIGURE PRINTED IN COLOR

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N

0 7.5 15

Miles

## EXPLANATION

ALL LOCATIONS ARE APPROXIMATE EARTHQUAKE

- MAGNITUDE 7+
- MAGNITUDE 6-7
- MAGNITUDE 5-6

USGS QUATERNARY FAULTS

- HISTORICAL
- LATEST QUATERNARY
- LATE QUATERNARY
- UNDIFFERENTIATED QUATERNARY
- HISTORIC BLIND THRUST FAULT ZONE

BASE MAP SOURCE

ESRI, GARMIN, GEBCO, NOAA NGDC, AND OTHER CONTRIBUTORS
COLOR HILLSHADE IMAGE BASED ON THE NATIONAL ELEVATION DATA SET (NED) AT 30 METER RESOLUTION
U.S.G.S. QUATERNARY FAULT DATABASE, 2018
U.S.G.S. HISTORIC EARTHQUAKE DATABASE (1800-PRESENT)

ENGEO Expect Excellence

# REGIONAL FAULTING AND SEISMICITY

HAT RANCH
MANTECA, CALIFORNIA

| | |
|---|---|
| PROJECT NO. : 10175.000.000 | FIGURE NO. 4 |
| SCALE: AS SHOWN | |
| DRAWN BY: QRL | CHECKED BY: ZAC |

PATH: G:\DRAFTING\DRAFTING2_DWG_10000 TO 12999\10175\000\GIS\10175 HAT RANCH.APRX
USER: QLIANG

ORIGINAL FIGURE PRINTED IN COLOR



# APPENDIX A

## EXPLORATION LOGS

### Test Pits Logs
### Cone Penetration Test (CPT) Sounding Logs

| ENGEO Expect Excellence | TEST PIT LOG |
|---|---|
| Hat Ranch<br>Manteca, CA<br>10175.000.000 | Logged By: Jason Sedore<br>Logged Date: 12/18/2018<br>Equipment: Mini excavator |

| Test Pit Number | Depth (Feet) | Description |
|---|---|---|
| 1-TP1 | 0 – 1½ | SILTY SAND (SM), dark yellowish brown, moist, fine-grained sand, contains fines, contains roots and gravels |
| | 1½ - 7 | POORLY GRADED SILTY SAND (SM-SP), dark yellowish brown, moist, fine-grained sand, contains fines, contains roots and gravels<br><br>Bulk samples taken at 1 and 3 feet.<br><br>Bottom of pit at approximately 7 feet. No groundwater encountered. |
| 1-TP2 | 0 - 2½ | SILTY SAND (SM), dark yellowish brown, moist, fine-grained sand, contains fines, contains roots and gravels |
| | 2½ - 7½ | POORLY GRADED SILTY SAND (SM-SP), dark yellowish brown, moist, medium to fine-grained sand, contains fines, contains roots and gravels. Moisture content = 8%<br><br>Bulk samples taken at ½ and 5 feet.<br><br>Bottom of pit at approximately 7½ feet. No groundwater encountered. |

| ENGEO Expect Excellence | | TEST PIT LOG |
|---|---|---|
| Hat Ranch<br>Manteca, CA<br>10175.000.000 | | Logged By: Jason Sedore<br>Logged Date: 12/18/2018<br>Equipment: Mini excavator |
| Test Pit Number | Depth (Feet) | Description |
| 1-TP3 | 0 - 5½<br><br>5½ - 8½ | SILTY SAND (SM), dark yellowish brown, moist, fine-grained sand, contains fines, contains roots and gravels<br><br>POORLY GRADED SILTY SAND (SM-SP), dark yellowish brown, moist, fine-grained sand, contains fines, contains roots and gravels. Moisture content = 4%.<br><br>Bulk samples taken at 1 and 8 feet.<br><br>Bottom of pit at approximately 8½ feet. No groundwater encountered. |
| 1-TP4 | 0 - 6½ | SILTY SAND (SM), dark yellowish brown, moist, fine-grained sand, contains fines, contains roots and gravels<br><br>Bulk samples taken at 4 feet.<br><br>Bottom of pit at approximately 6½ feet. No groundwater encountered. |

| ENGEO Expect Excellence | TEST PIT LOG | |
|---|---|---|
| Hat Ranch<br>Manteca, CA<br>10175.000.000 | | Logged By: Jason Sedore<br>Logged Date: 12/18/2018<br>Equipment: Mini excavator |
| Test Pit Number | Depth (Feet) | Description |
| 1-TP5 | 0 - 6<br><br>6 - 9 | POORLY GRADED SILTY SAND (SM-SP), dark yellowish brown, moist, medium to fine-grained sand, contains fines, contains roots<br><br>POORLY GRADED SAND (SP), dark yellowish brown, moist, <5% fines, medium-grained sand<br><br>Bulk samples taken at 1, 3½, and 6½ feet.<br><br>Bottom of pit at approximately 9 feet. No groundwater encountered. |
| 1-TP6 | 0 - 5½<br><br>5½ – 9½ | POORLY GRADED SILTY SAND (SM-SP), dark yellowish brown, moist, medium-grained sand, contains fines, contains roots and gravels<br><br>POORLY GRADED SILTY SAND (SM-SP), dark yellowish brown, moist, medium-grained sand, contains fines, contains gravels<br><br>Bulk samples taken at 2 and 8½ feet.<br><br>Bottom of pit at approximately 9½ feet. No groundwater encountered. |

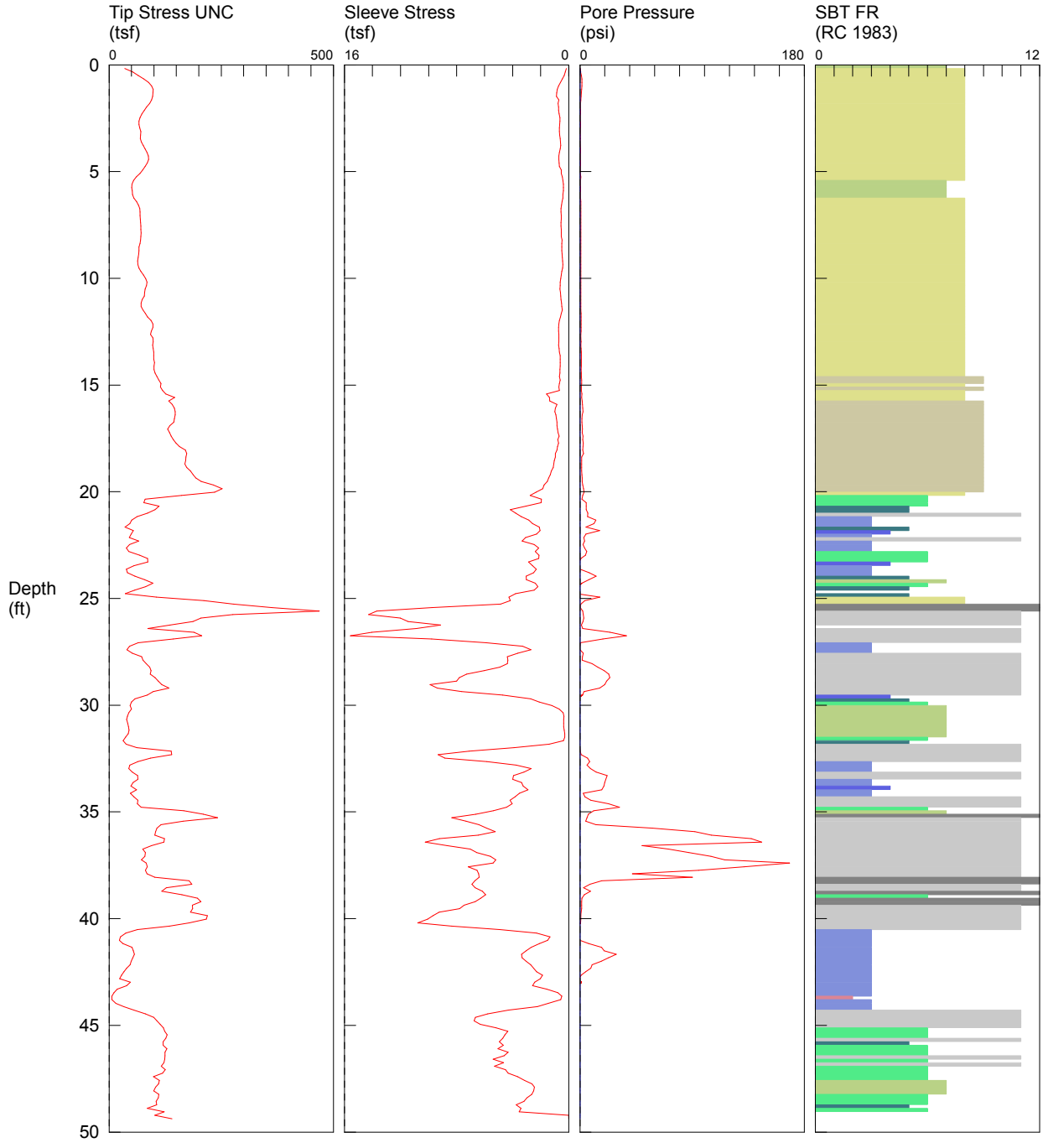
| ENGEO Expect Excellence | TEST PIT LOG | |
|---|---|---|
| Hat Ranch<br>Manteca, CA<br>10175.000.000 | | Logged By: Jason Sedore<br>Logged Date: 12/18/2018<br>Equipment: Mini excavator |
| Test Pit Number | Depth (Feet) | Description |
| 1-TP7 | 0 – 7½<br><br>7½ – 9½ | POORLY GRADED SILTY SAND (SM-SP), dark yellowish brown, moist, fine-grained sand, contains fines, contains roots<br><br>POORLY GRADED SAND (SP), dark yellowish brown, moist, medium-grained sand, <5% fines, contains gravels<br><br>Bulk samples taken at 1 and 9 feet.<br><br>Bottom of pit at approximately 9½ feet. No groundwater encountered. |
| DR-1 | 0 - 5 | SILTY SAND (SM), dark yellowish brown, moist, fine-grained sand, contains fines, contains roots and gravels<br><br>Bulk samples taken at 1 and 4½ feet.<br><br>Bottom of pit at approximately 5 feet. No groundwater encountered. |

| ENGEO Expect Excellence | | TEST PIT LOG |
|---|---|---|
| Hat Ranch<br>Manteca, CA<br>10175.000.000 | | Logged By: Jason Sedore<br>Logged Date: 12/18/2018<br>Equipment: Mini excavator |
| Test Pit Number | Depth (Feet) | Description |
| DR-2 | 0 – 8½ | SILTY SAND (SM), dark yellowish brown, moist, fine-grained sand, contains fines, contains roots, grades to medium-grained sand at approximately 6 feet.<br><br>Bulk samples taken at 1 and 5 feet.<br><br>Bottom of pit at approximately 8½ feet. No groundwater encountered. |

# Geo-Ex CPT

SOUNDING
CUSTOMER: Geo-Ex CPT
OPERATOR: Mike
CONE ID: DSG1111
LOCATION: Manteca

JOB NUMBER: ENGEO
HOLE NUMBER: 1-CPT-01
TEST DATE: 12/20/2018 11:27:50 AM
COMMENT: Auto Enhance On
COMMENT: Filter On



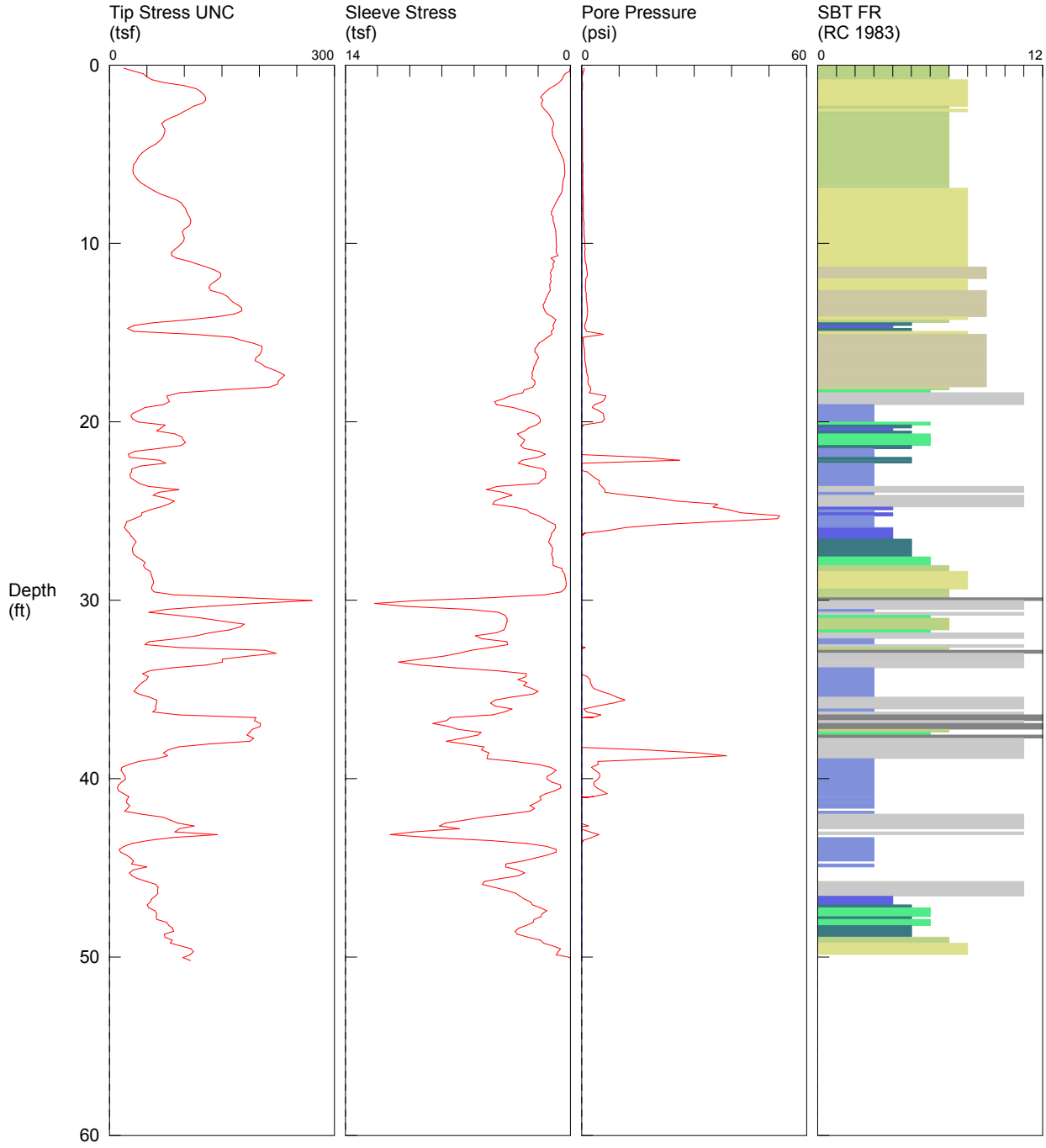

1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

*SBT/SPT CORRELATION: UBC-1983

# Geo-Ex CPT

SOUNDING
CUSTOMER: Geo-Ex CPT
OPERATOR: Mike
CONE ID: DSG1111
LOCATION: Manteca

JOB NUMBER: ENGEO
HOLE NUMBER: 1-CPT-02
TEST DATE: 12/20/2018 10:46:55 AM
COMMENT: Auto Enhance On
COMMENT: Filter On



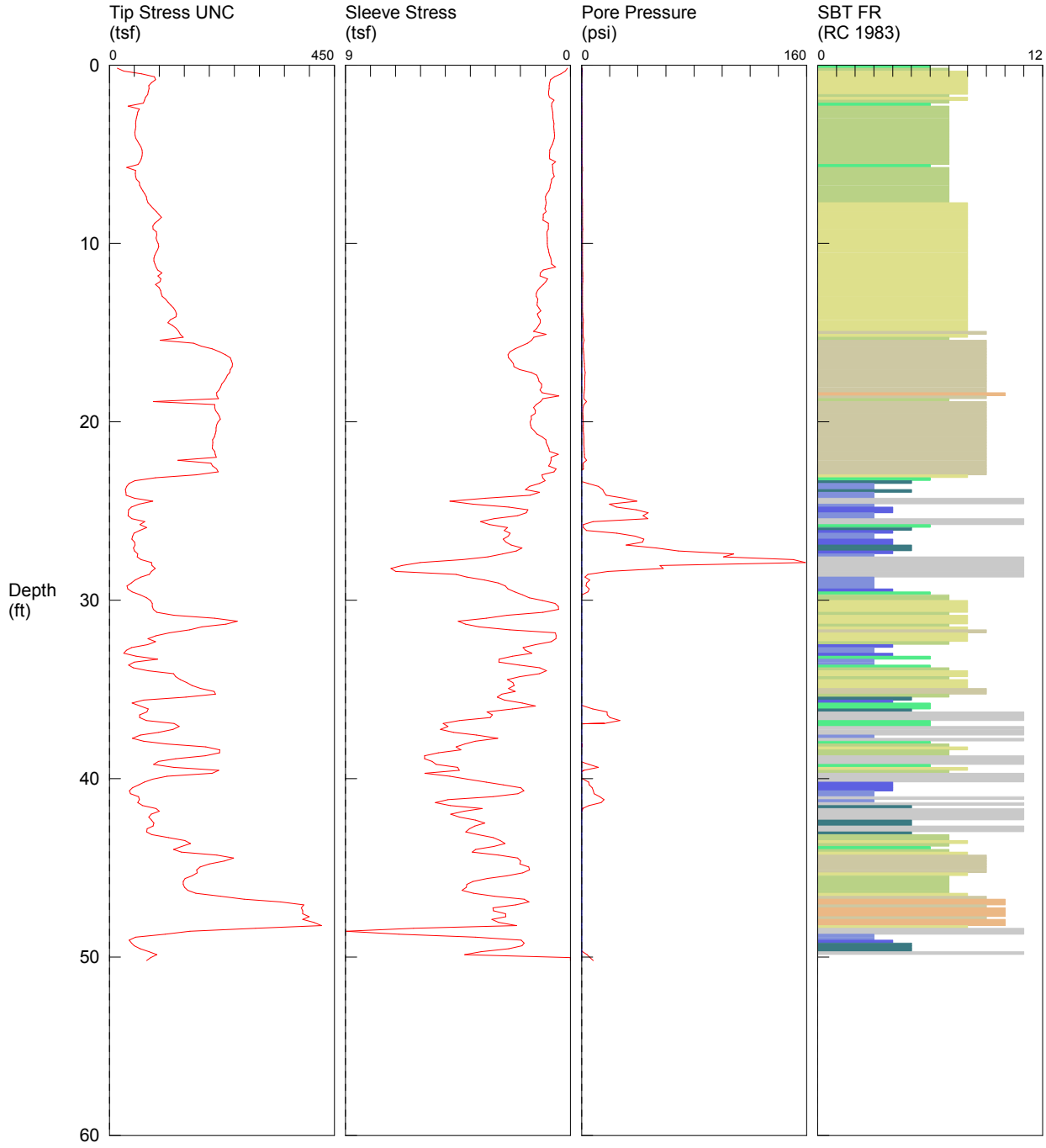

1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

*SBT/SPT CORRELATION: UBC-1983

# Geo-Ex CPT

SOUNDING
CUSTOMER: Geo-Ex CPT
OPERATOR: Mike
CONE ID: DSG1111
LOCATION: Manteca

JOB NUMBER: ENGEO
HOLE NUMBER: 1-CPT-03
TEST DATE: 12/20/2018 10:14:01 AM
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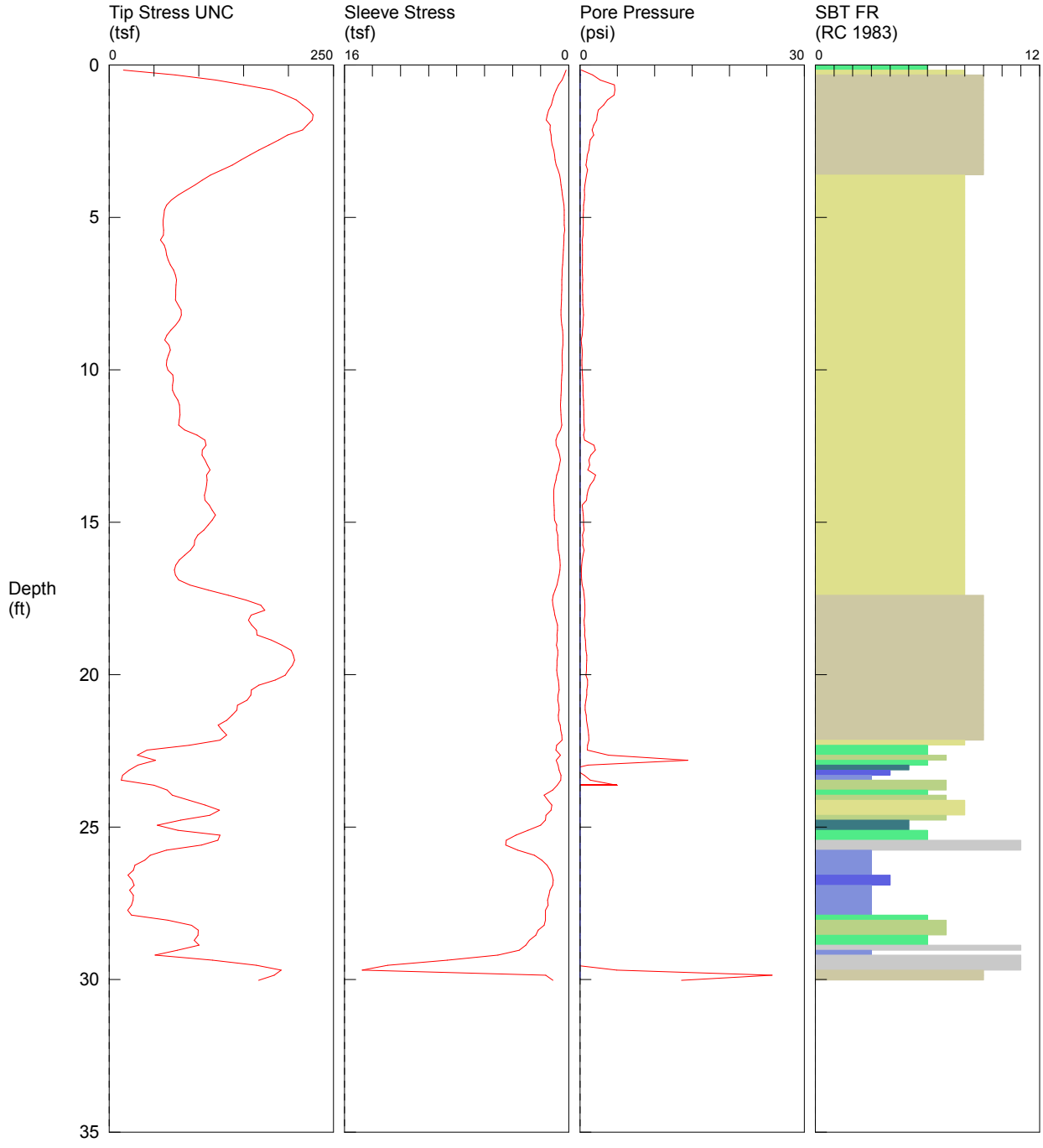

1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

*SBT/SPT CORRELATION: UBC-1983

# Geo-Ex CPT

SOUNDING
CUSTOMER: Geo-Ex CPT
OPERATOR: Mike
CONE ID: DSG1111
LOCATION: Manteca

JOB NUMBER: ENGEO
HOLE NUMBER: 1-CPT-04
TEST DATE: 12/20/2018 9:45:38 AM
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COMMENT: Filter On



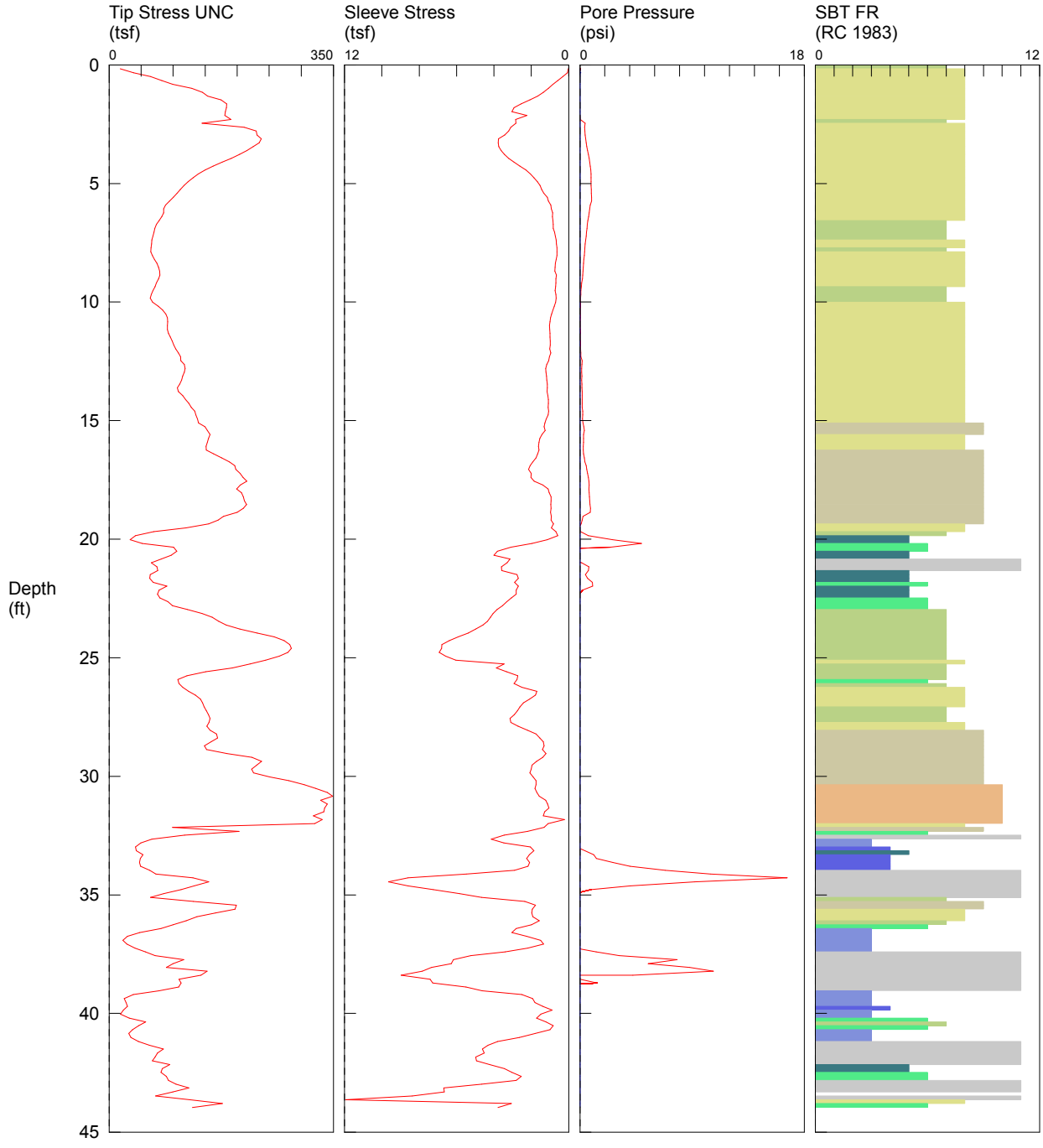

1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
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6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

*SBT/SPT CORRELATION: UBC-1983

# Geo-Ex CPT

SOUNDING
CUSTOMER: Geo-Ex CPT
OPERATOR: Mike
CONE ID: DSG1111
LOCATION: Manteca

JOB NUMBER: ENGEO
HOLE NUMBER: 1-CPT-05
TEST DATE: 12/20/2018 9:09:46 AM
COMMENT: Auto Enhance On
COMMENT: Filter On



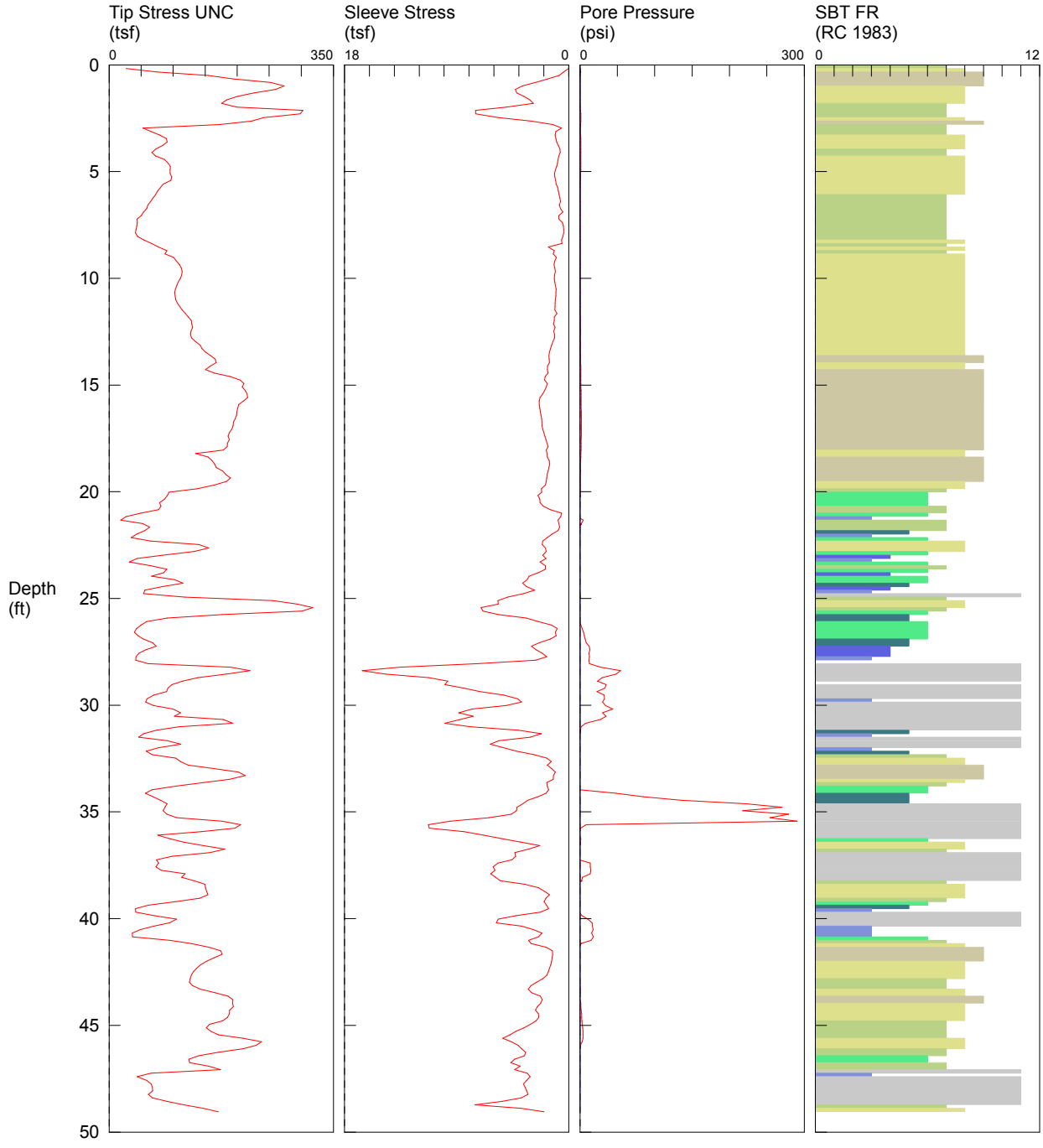

1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

*SBT/SPT CORRELATION: UBC-1983

# Geo-Ex CPT

SOUNDING
CUSTOMER: Geo-Ex CPT
OPERATOR: Mike
CONE ID: DSG1111
LOCATION: Manteca

JOB NUMBER: ENGEO
HOLE NUMBER: 1-CPT-06
TEST DATE: 12/20/2018 8:38:52 AM
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COMMENT: Filter On



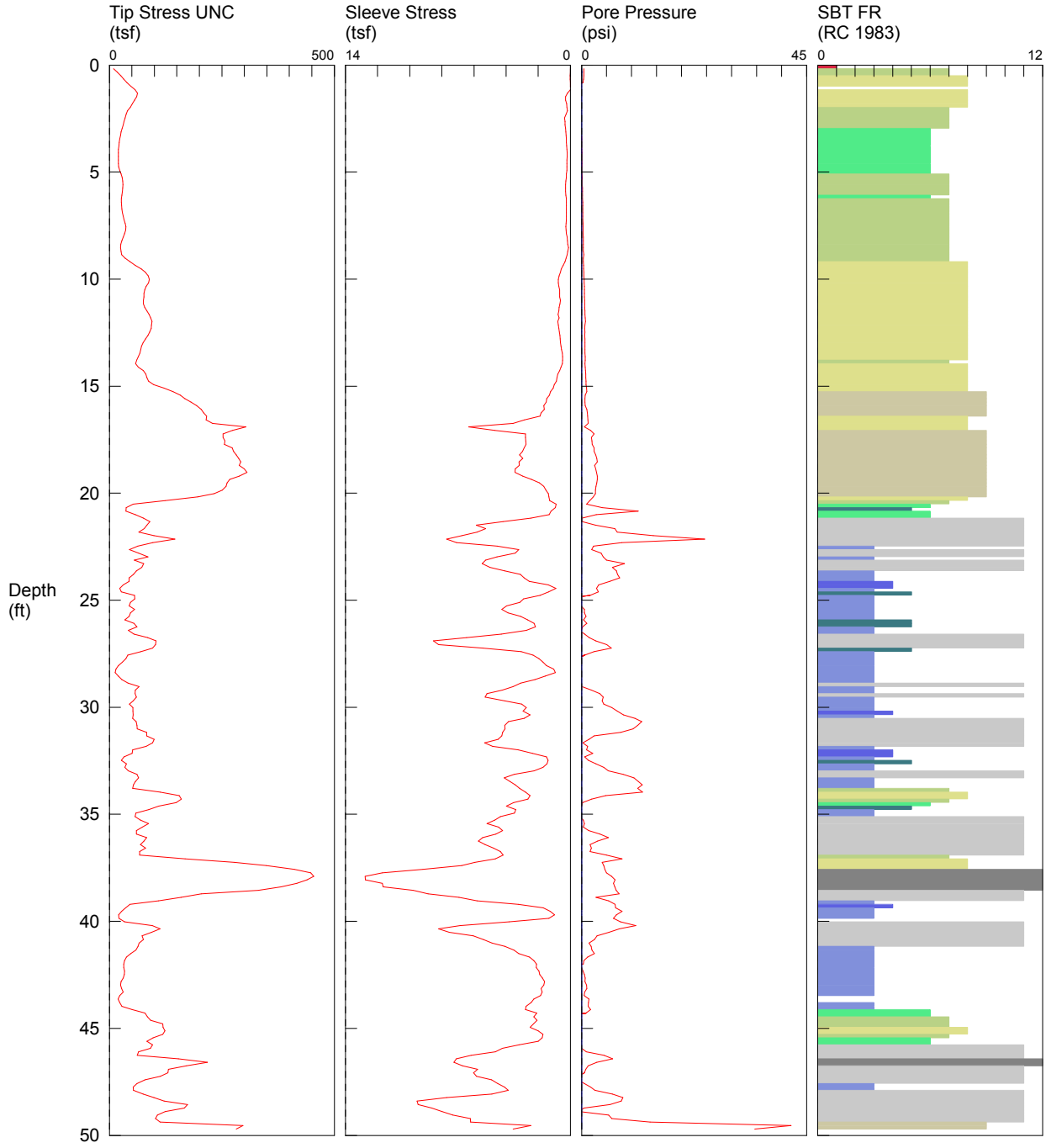

1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

*SBT/SPT CORRELATION: UBC-1983

# Geo-Ex CPT

SOUNDING
CUSTOMER: Geo-Ex CPT
OPERATOR: Mike
CONE ID: DSG1111
LOCATION: Manteca

JOB NUMBER: ENGEO
HOLE NUMBER: 1-CPT-07
TEST DATE: 12/20/2018 12:00:43 PM
COMMENT: Auto Enhance On
COMMENT: Filter On



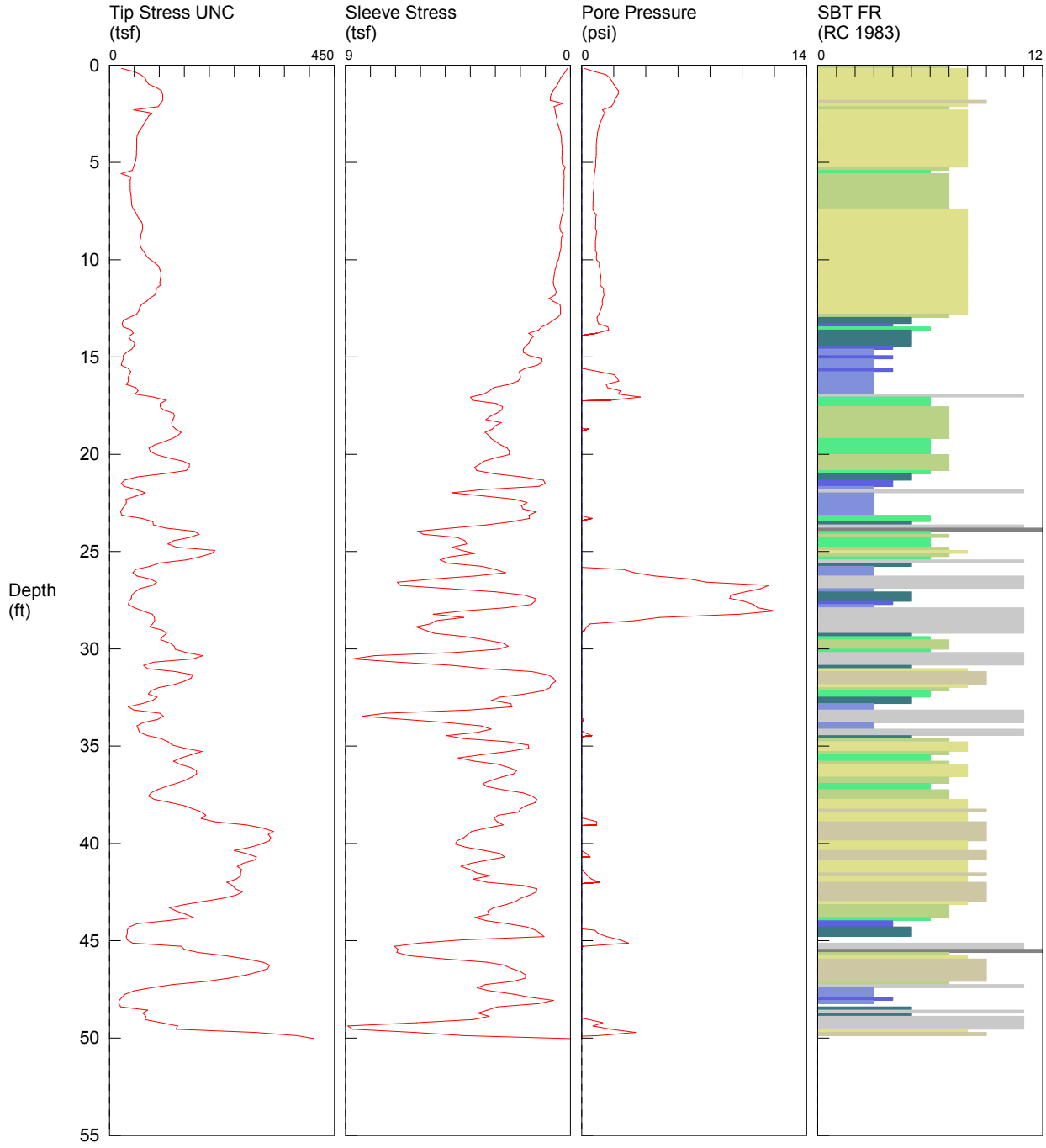

1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

*SBT/SPT CORRELATION: UBC-1983

# Geo-Ex CPT

SOUNDING
CUSTOMER: Geo-Ex CPT
OPERATOR: Mike
CONE ID: DSG1111
LOCATION: Manteca

JOB NUMBER: ENGEO
HOLE NUMBER: 1-CPT-08
TEST DATE: 12/20/2018 8:03:10 AM
COMMENT: Auto Enhance On
COMMENT: Filter On




1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

*SBT/SPT CORRELATION: UBC-1983

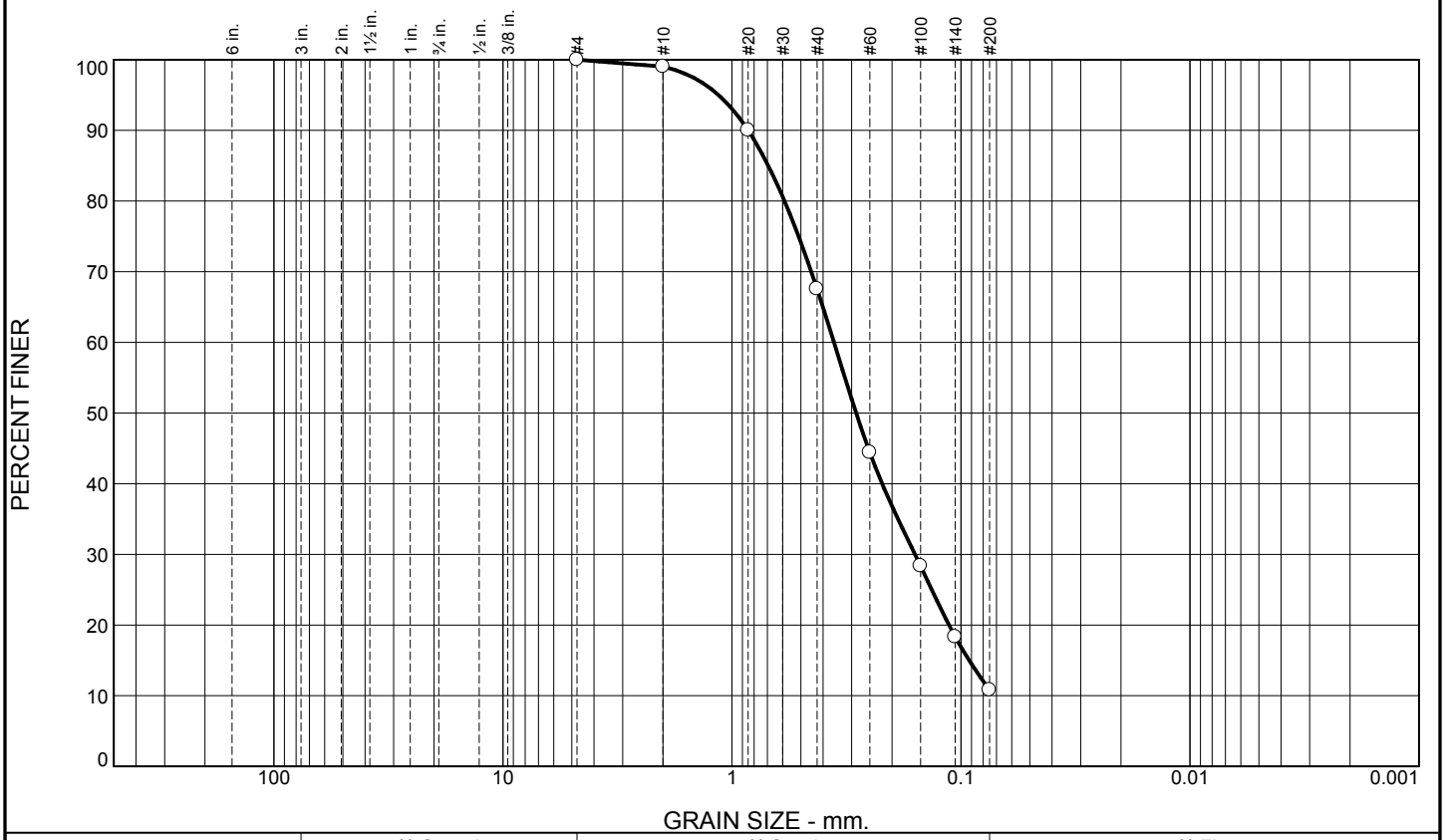


# APPENDIX B

## LABORATORY TEST DATA

**Particle Size Distribution Report**
**R-Value Test Report**
**Specific Gravity Report**

# Particle Size Distribution Report




| % +75mm | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.0 | 1.0 | 31.4 | 56.8 | 10.8 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| #4 | 100.0 | | |
| #10 | 99.0 | | |
| #20 | 90.0 | | |
| #40 | 67.6 | | |
| #60 | 44.4 | | |
| #100 | 28.3 | | |
| #140 | 18.3 | | |
| #200 | 10.8 | | |

* (no specification provided)

**Soil Description**

See exploration logs

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 0.8490 $D_{85}$= 0.6938 $D_{60}$= 0.3585
$D_{50}$= 0.2868 $D_{30}$= 0.1587 $D_{15}$= 0.0921
$D_{10}$= $C_u$= $C_c$=

**Classification**

USCS= AASHTO=

**Remarks**

GS: ASTM D6913

**Sample Number:** 1-TP1 @ 1 **Depth:** 1 feet

**Date:** 01-03-19

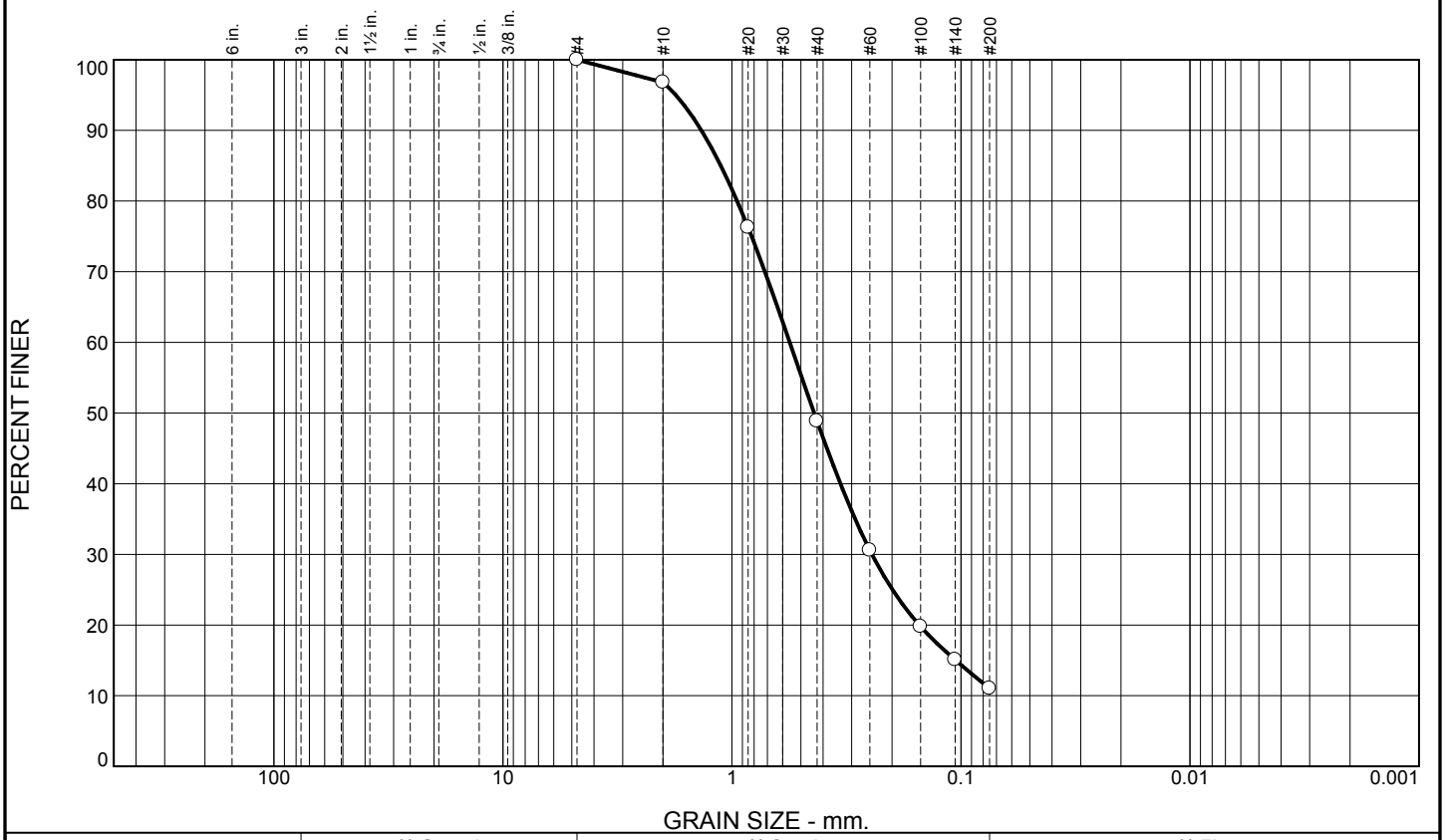
ENGEO INCORPORATED

**Client:** Richland Communities, Inc
**Project:** Geotechnical Exploration

**Project No:** 10175.000.000 **Figure**

**Tested By:** K. Lecce **Checked By:** C. Crawford

# Particle Size Distribution Report




| % +75mm | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.0 | 3.2 | 47.9 | 37.9 | 11.0 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| #4 | 100.0 | | |
| #10 | 96.8 | | |
| #20 | 76.3 | | |
| #40 | 48.9 | | |
| #60 | 30.6 | | |
| #100 | 19.8 | | |
| #140 | 15.1 | | |
| #200 | 11.0 | | |

* (no specification provided)

**Soil Description**

See exploration logs

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 1.3598 $D_{85}$= 1.1187 $D_{60}$= 0.5594
$D_{50}$= 0.4374 $D_{30}$= 0.2448 $D_{15}$= 0.1054
$D_{10}$= $C_u$= $C_c$=

**Classification**

USCS= AASHTO=

**Remarks**

GS: ASTM D6913

**Sample Number:** 1-TP2 @ 5 **Depth:** 5 feet

**Date:** 01-03-19

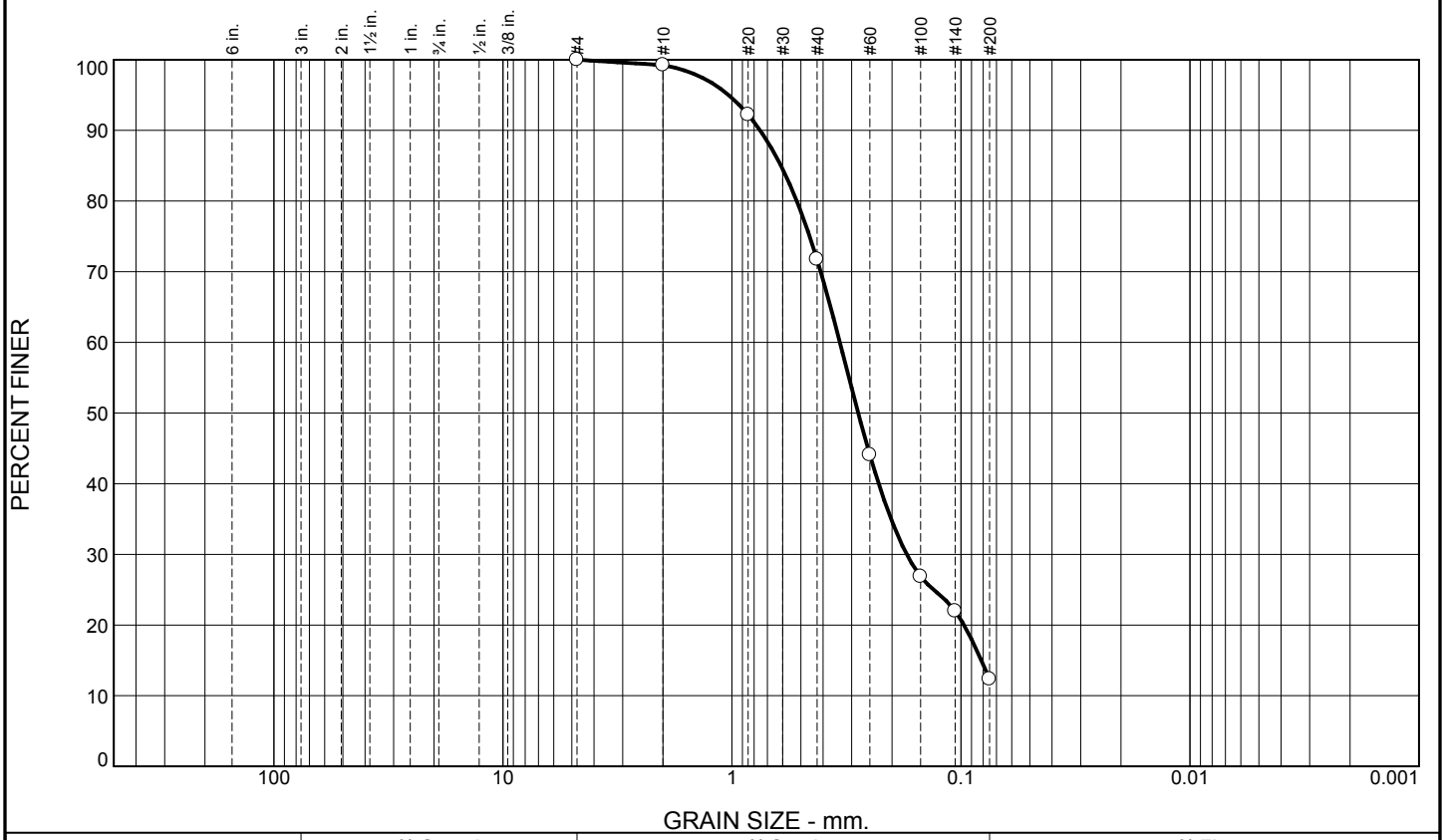
ENGEO INCORPORATED

**Client:** Richland Communities, Inc
**Project:** Geotechnical Exploration

**Project No:** 10175.000.000 **Figure**

**Tested By:** K. Lecce **Checked By:** C. Crawford

# Particle Size Distribution Report




| % +75mm | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.0 | 0.8 | 27.5 | 59.3 | 12.4 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| #4 | 100.0 | | |
| #10 | 99.2 | | |
| #20 | 92.2 | | |
| #40 | 71.7 | | |
| #60 | 44.1 | | |
| #100 | 26.9 | | |
| #140 | 22.0 | | |
| #200 | 12.4 | | |

* (no specification provided)

**Soil Description**

See exploration logs

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 0.7531 $D_{85}$= 0.6108 $D_{60}$= 0.3379
$D_{50}$= 0.2809 $D_{30}$= 0.1726 $D_{15}$= 0.0815
$D_{10}$= $C_u$= $C_c$=

**Classification**

USCS= AASHTO=

**Remarks**

GS: ASTM D6913

**Sample Number:** 1-TP4 @ 4 **Depth:** 4 feet

**Date:** 01-03-19

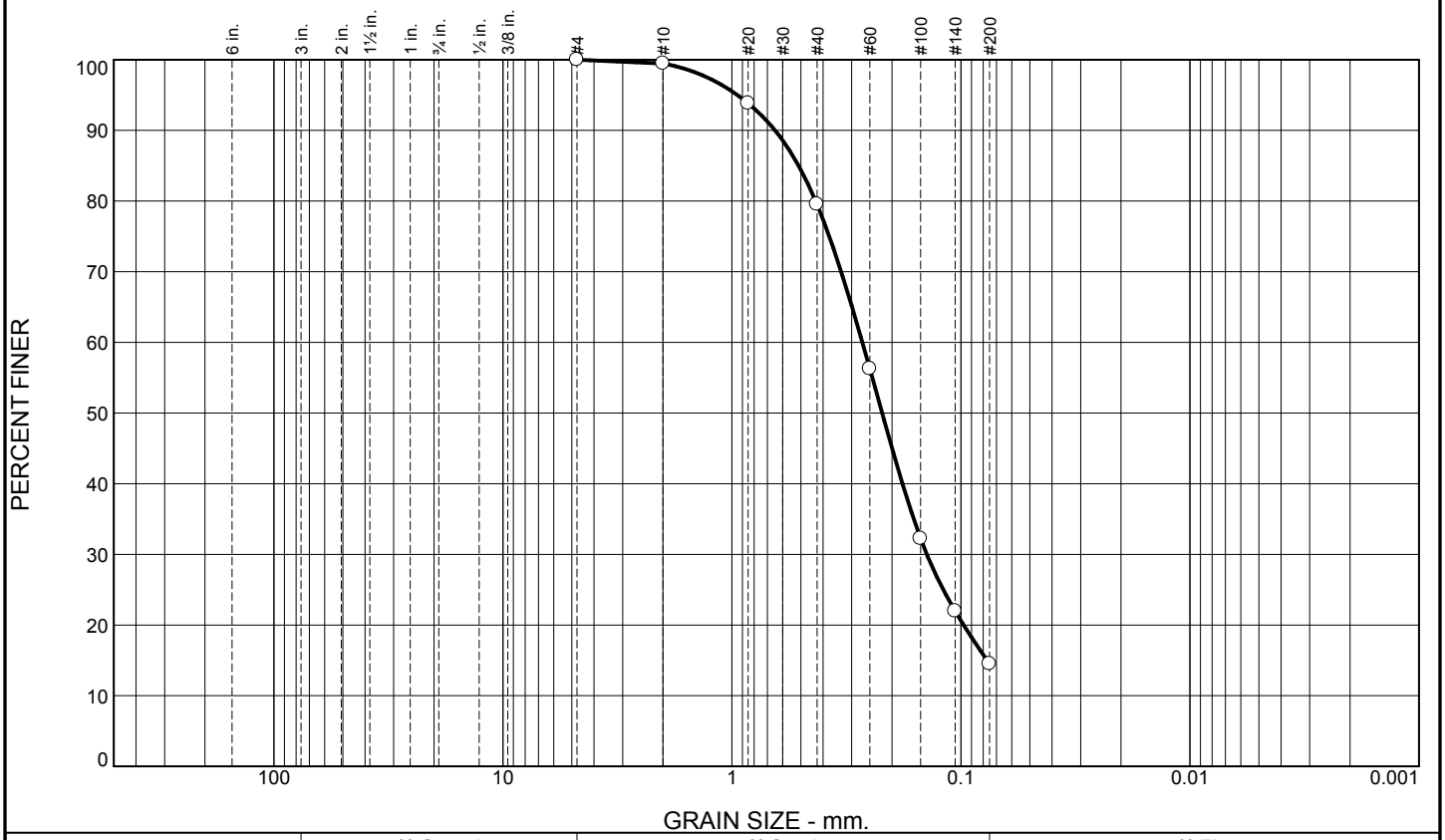
ENGEO INCORPORATED

**Client:** Richland Communities, Inc
**Project:** Geotechnical Exploration

**Project No:** 10175.000.000 **Figure**

**Tested By:** K. Lecce **Checked By:** C. Crawford

# Particle Size Distribution Report




| % +75mm | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.0 | 0.5 | 20.0 | 65.0 | 14.5 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| #4 | 100.0 | | |
| #10 | 99.5 | | |
| #20 | 93.8 | | |
| #40 | 79.5 | | |
| #60 | 56.3 | | |
| #100 | 32.2 | | |
| #140 | 22.0 | | |
| #200 | 14.5 | | |

* (no specification provided)

**Soil Description**

See exploration logs

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 0.6480 $D_{85}$= 0.5116 $D_{60}$= 0.2695
$D_{50}$= 0.2209 $D_{30}$= 0.1409 $D_{15}$= 0.0768
$D_{10}$= $C_u$= $C_c$=

**Classification**

USCS= AASHTO=

**Remarks**

GS: ASTM D6913

**Sample Number:** Double Ring #2 @ 5 **Depth:** 5 feet

**Date:** 01-03-19

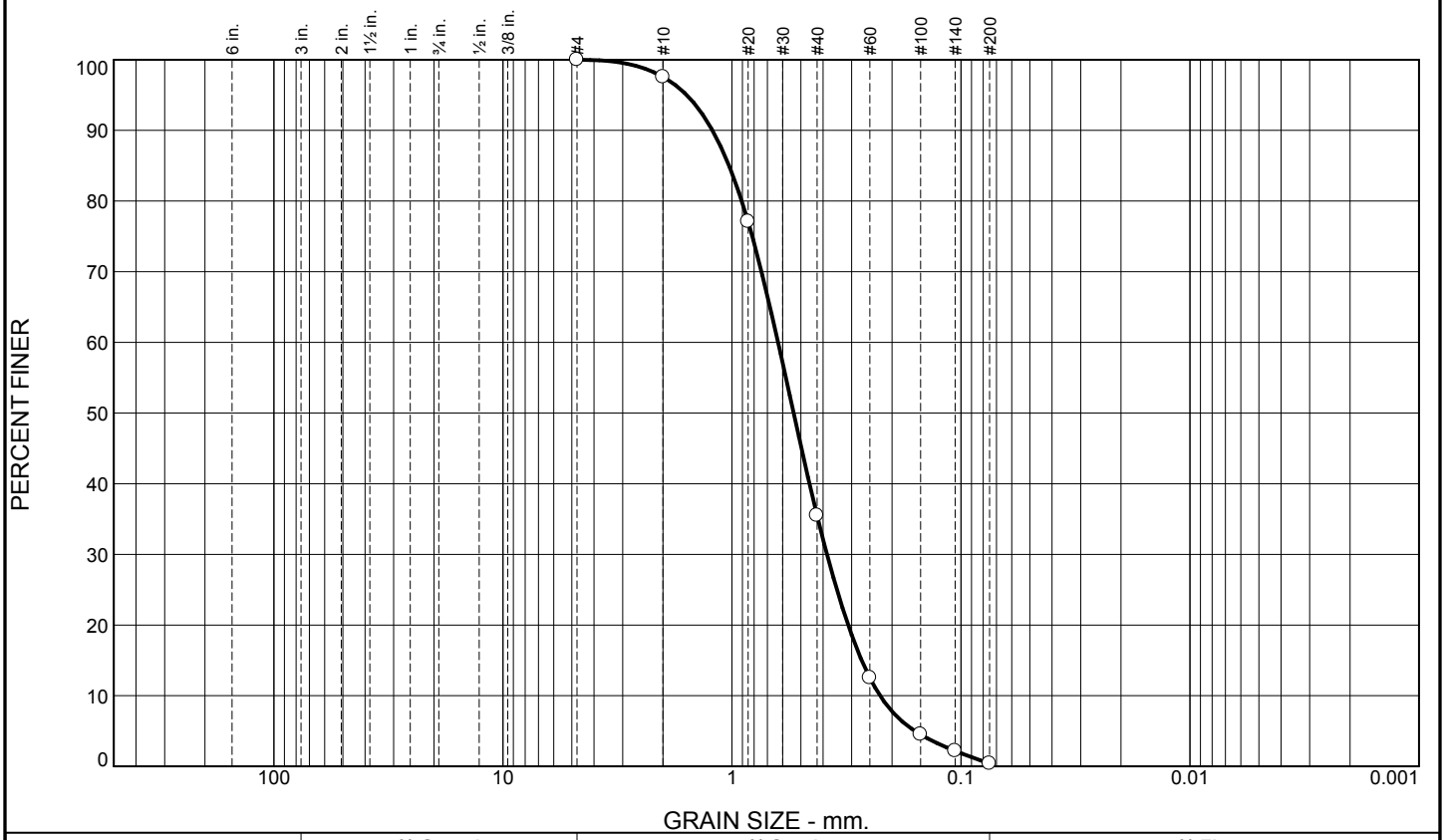
ENGEO INCORPORATED

**Client:** Richland Communities, Inc
**Project:** Geotechnical Exploration

**Project No:** 10175.000.000 **Figure**

**Tested By:** K. Lecce **Checked By:** C. Crawford

# Particle Size Distribution Report




| % +75mm | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.0 | 2.4 | 62.1 | 35.1 | 0.4 | |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|---|---|---|---|
| #4 | 100.0 | | |
| #10 | 97.6 | | |
| #20 | 77.1 | | |
| #40 | 35.5 | | |
| #60 | 12.5 | | |
| #100 | 4.5 | | |
| #140 | 2.2 | | |
| #200 | 0.4 | | |

* (no specification provided)

**Soil Description**

See exploration logs

**Atterberg Limits**

PL= LL= PI=

**Coefficients**

$D_{90}$= 1.2169 $D_{85}$= 1.0293 $D_{60}$= 0.6291
$D_{50}$= 0.5378 $D_{30}$= 0.3847 $D_{15}$= 0.2714
$D_{10}$= 0.2255 $C_u$= 2.79 $C_c$= 1.04

**Classification**

USCS= SP AASHTO=

**Remarks**

GS: ASTM D6913

**Sample Number:** 1-TP5 @ 6.5 **Depth:** 6.5 feet

**Date:** 01-03-19

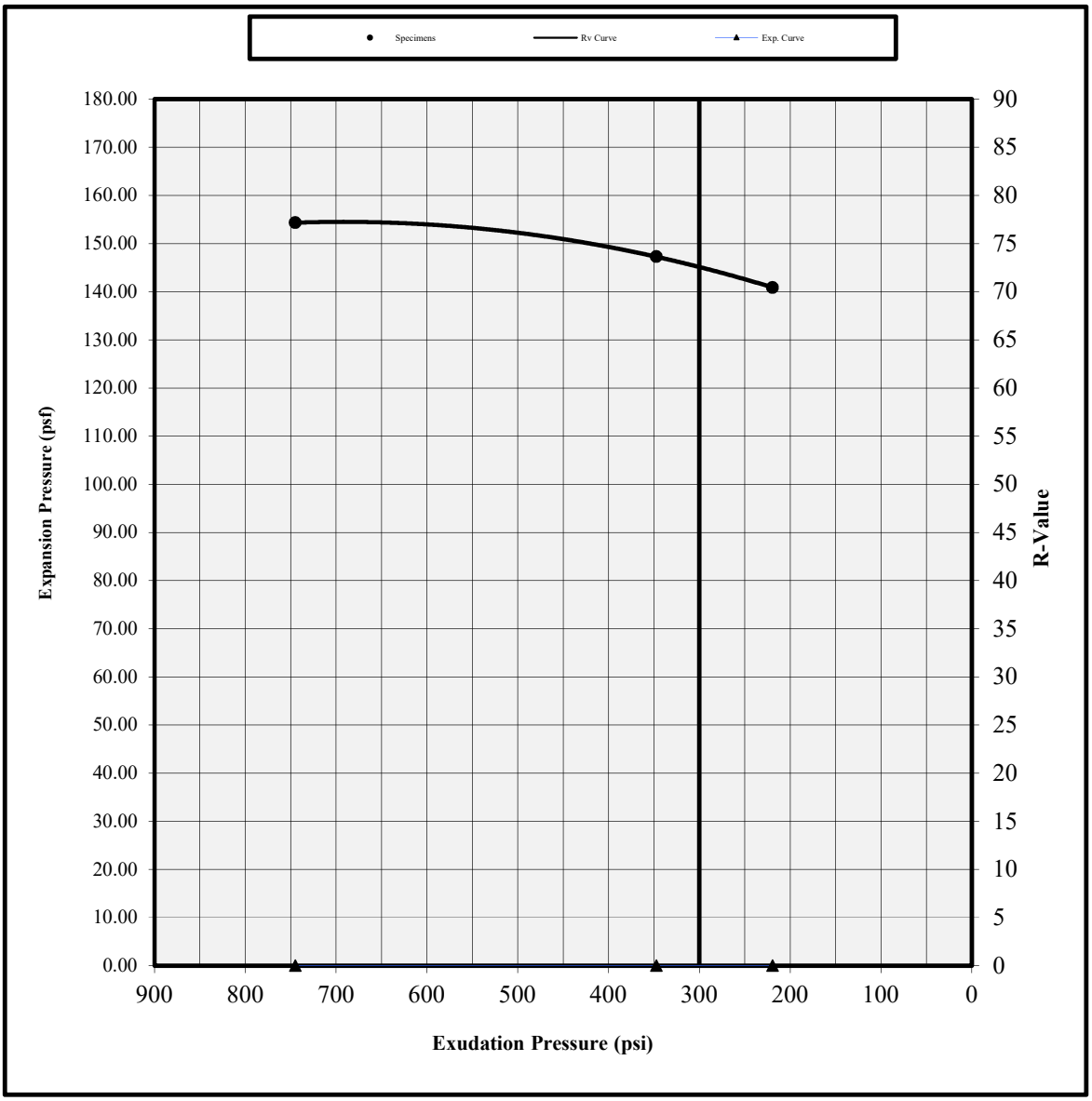
ENGEO INCORPORATED

**Client:** Richland Communities, Inc
**Project:** Geotechnical Exploration

**Project No:** 10175.000.000 **Figure**

**Tested By:** K. Lecce **Checked By:** C. Crawford

**R VALUE TEST REPORT**
**CTM 301**




**Sample ID/Location: Sample 1**
**Description: Brown silty SAND**

| Specimen | Specimen 1 | Specimen 2 | Specimen 3 |
|---|---|---|---|
| Exudation Pressure (p.s.i.) | 745 | 347 | 219 |
| Expansion dial (0.0001") | 0 | 0 | 0 |
| Expansion Pressure (p.s.f.) | 0 | 0 | 0 |
| Resistance Value, "R" | 77 | 74 | 70 |
| % Moisture at Test | 10.3 | 10.7 | 11.1 |
| Dry Density at Test, p.c.f. | 118.6 | 117.2 | 122.5 |
| "R" Value at Exudation Pressure of 300 psi. | | 73 | |
| Expansion Pressure (psf) at Exudation Pressure of 300 psi. | | 0 | |

**PROJECT NAME: Hat Ranch Property** **DATE: 01/04/19**
**PROJECT NUMBER: 10175.000.000**
**CLIENT: Richland Communities, Inc.**
**PHASE NUMBER: 002**

ENGEO Expect Excellence

Tested by: R. Montalvo Reviewed by: M. Gilbert

Lab Address: 2213 Plaza Drive, Rocklin, CA 95765

# Specific Gravity of Soil Solids By Water Pycnometer

**ASTM D854**

## Sample 1: 1-TP3 @ 1

Description: See exploration logs USCS: n/a

%Passing #4: 100.0

Method used: **A**

Temperature (°C): **19.9** ***Specific gravity at 20 ° C:*** **2.71**

## Sample 2: 1-TP7 @ 1

Description: See exploration logs USCS: n/a

%Passing #4: 100.0

Method used: **A**

Temperature (°C): **19.9** ***Specific gravity at 20 ° C:*** **2.69**

**PROJECT NAME: Geotechnical Exploration** **DATE: 01/03/19**

**PROJECT NUMBER: 10175.000.000**

**CLIENT: Richland Communities, Inc**

**PHASE NUMBER: 002**

ENGEO Expect Excellence

Tested by: K. Lecce Reviewed by: C. Crawford



# APPENDIX C

## LIQUEFACTION ANALYSIS

**GeoLogismiki**
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http://www.geologismiki.gr

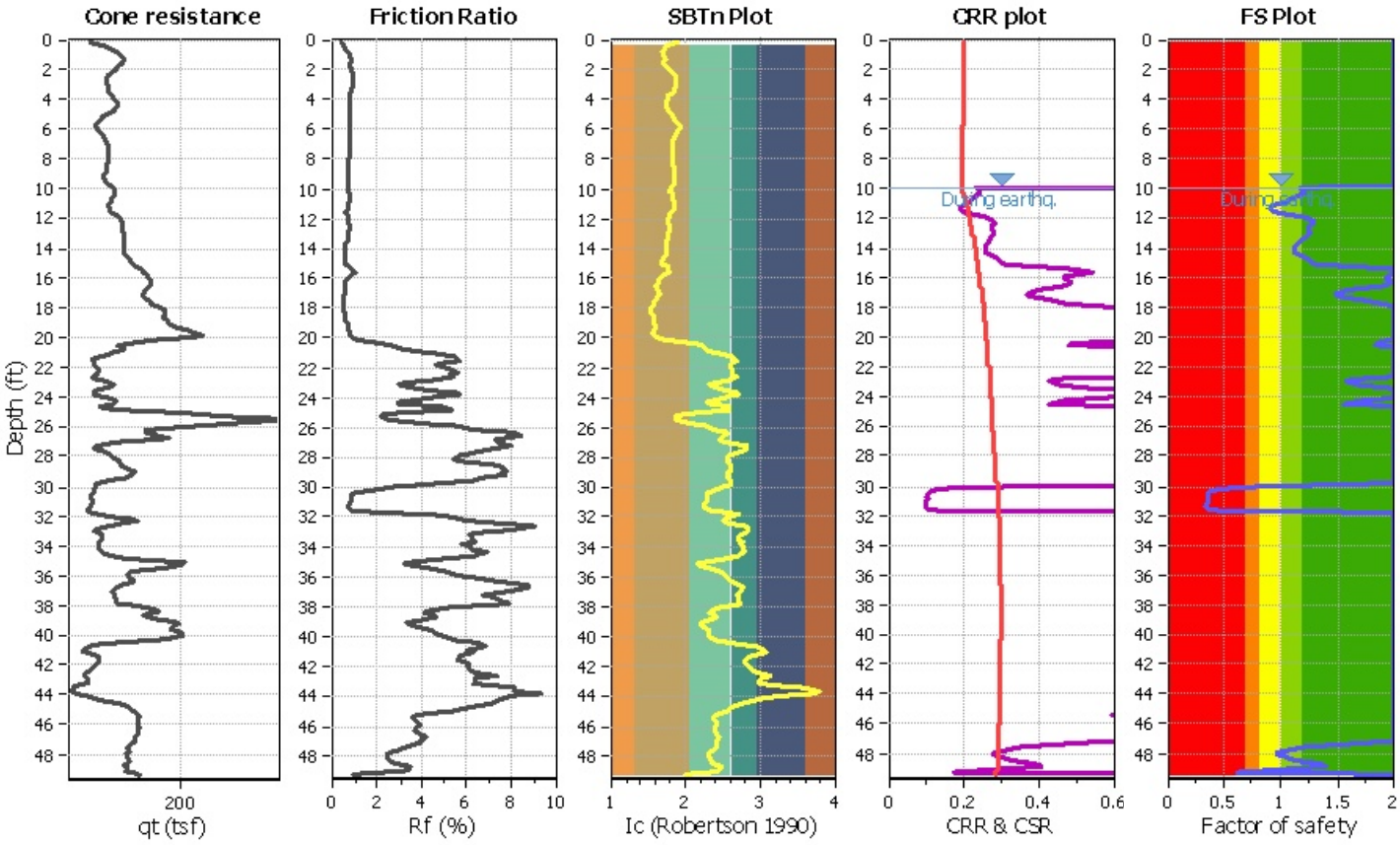
# LIQUEFACTION ANALYSIS REPORT

**Project title :** **Location :**

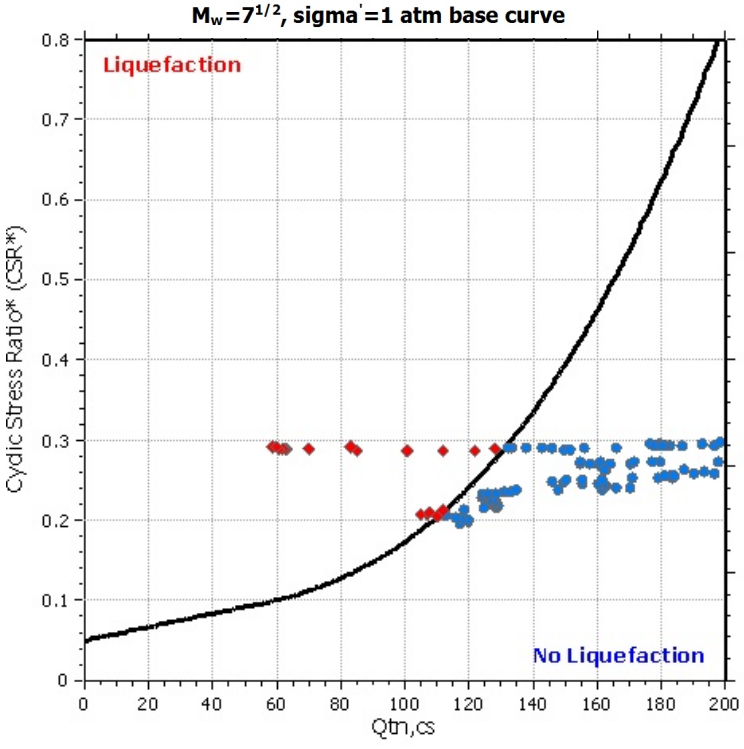
**CPT file : 1-CPT-01**

**Input parameters and analysis data**

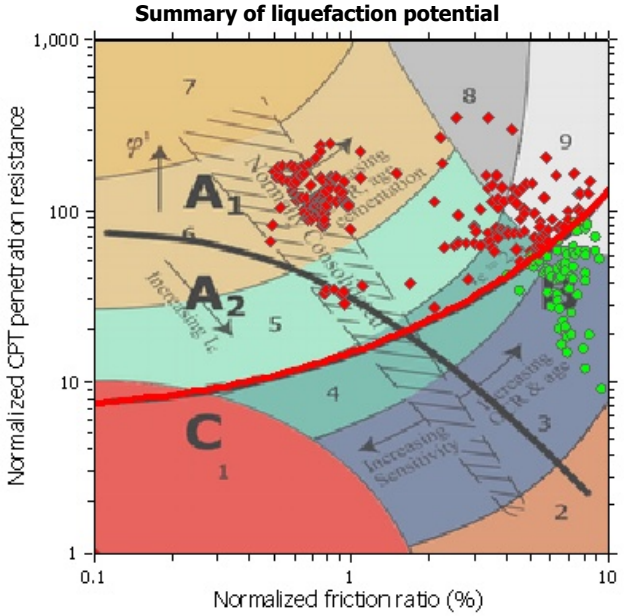
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | NCEER (1998) | G.W.T. (in-situ): | 10.00 ft | Use fill: | No | Clay like behavior applied: | Sands only |
| Fines correction method: | NCEER (1998) | G.W.T. (earthq.): | 10.00 ft | Fill height: | N/A | Limit depth applied: | No |
| Points to test: | Based on Ic value | Average results interval: | 3 | Fill weight: | N/A | Limit depth: | N/A |
| Earthquake magnitude $M_w$: | 6.20 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | MSF method: | Method based |
| Peak ground acceleration: | 0.50 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | | |




**$M_w=7^{1/2}$, sigma'=1 atm base curve**

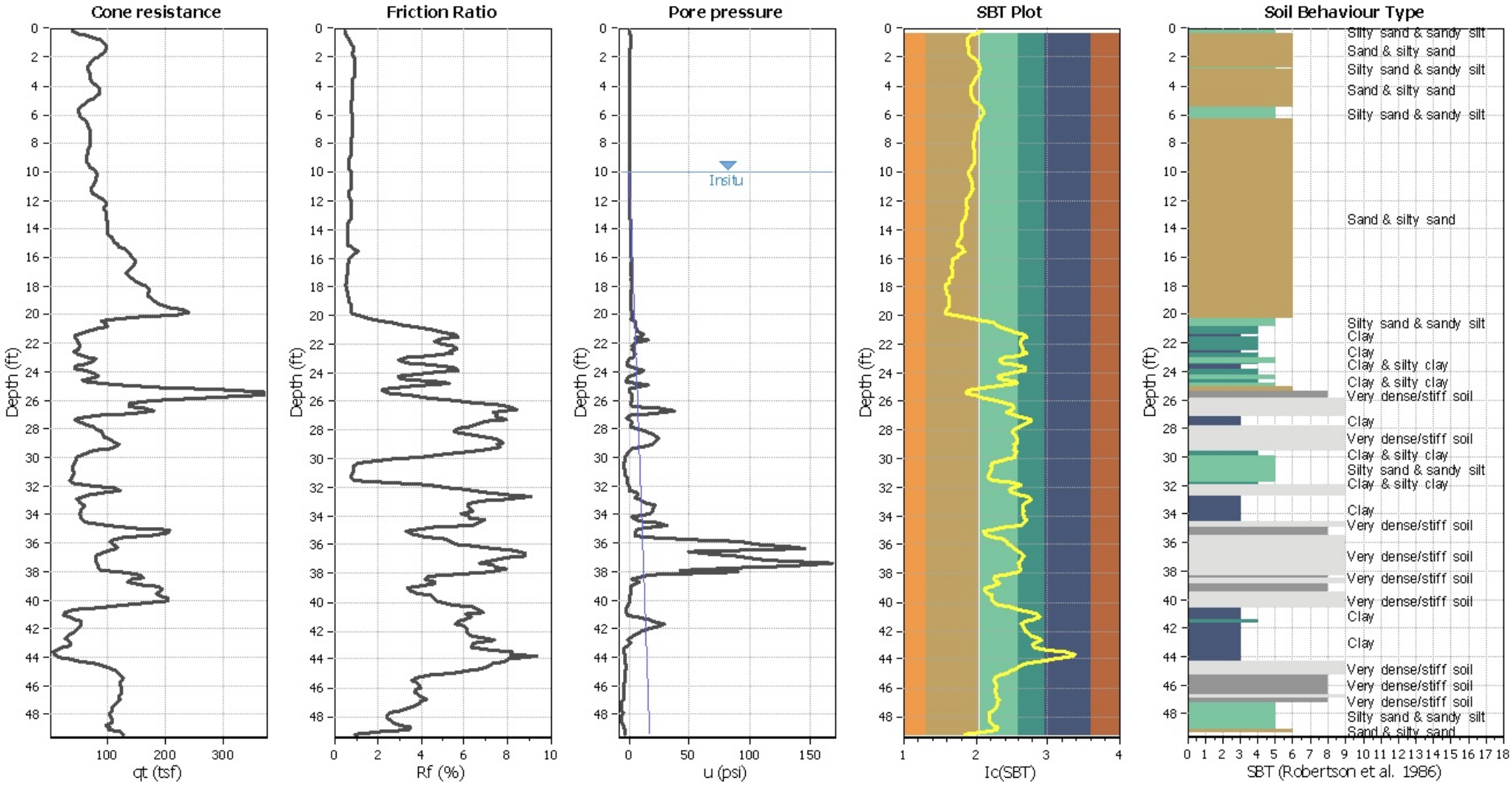



**Summary of liquefaction potential**




Zone $A_1$: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone $A_2$: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

## CPT basic interpretation plo



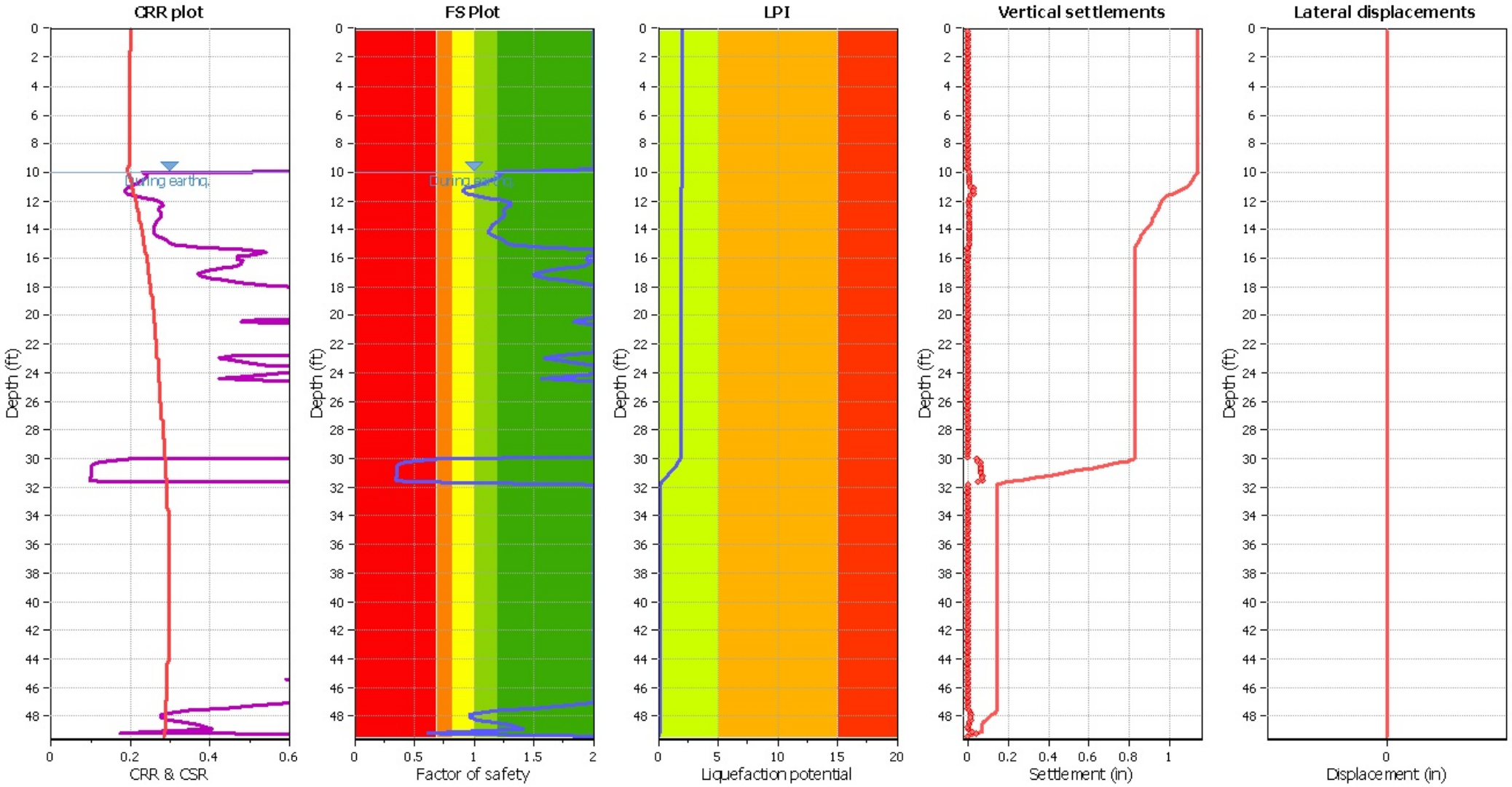

### Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | NCEER (1998) | Depth to water table (erthq.): | 10.00 ft | Fill weight: | N/A |
| Fines correction method: | NCEER (1998) | Average results interval: | 3 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.20 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.50 | Use fill: | No | Limit depth applied: | No |
| Depth to water table (insitu): | 10.00 ft | Fill height: | N/A | Limit depth: | N/A |

**SBT legend**

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

# Liquefaction analysis overall plot




## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | NCEER (1998) | Depth to water table (erthq.): | 10.00 ft | Fill weight: | N/A |
| Fines correction method: | NCEER (1998) | Average results interval: | 3 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.20 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.50 | Use fill: | No | Limit depth applied: | No |
| Depth to water table (insitu): | 10.00 ft | Fill height: | N/A | Limit depth: | N/A |

**F.S. color scheme**

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

**LPI color scheme**

- Very high risk
- High risk
- Low risk

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Merarhias 56
http://www.geologismiki.gr

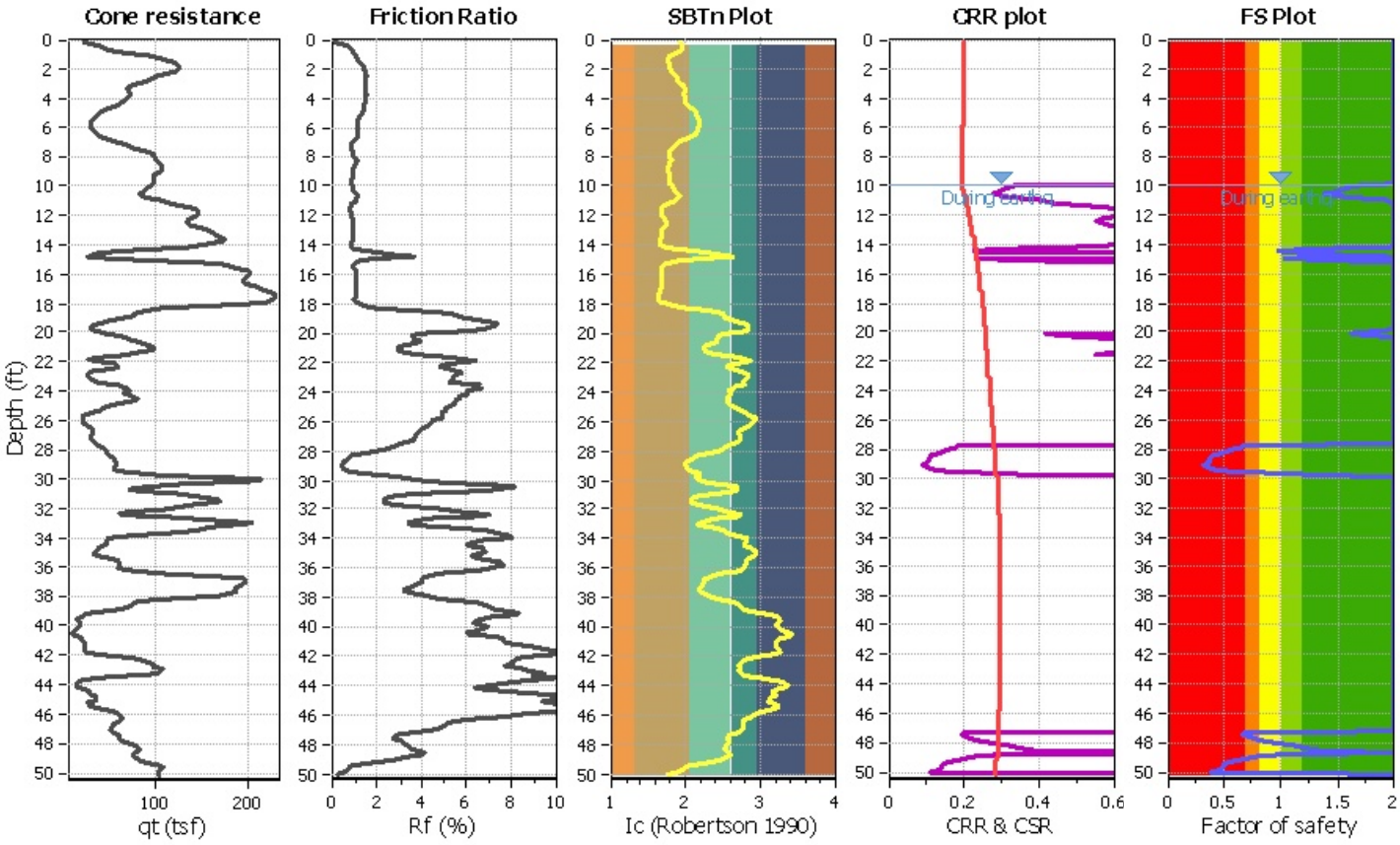
# LIQUEFACTION ANALYSIS REPORT

**Project title :** **Location :**

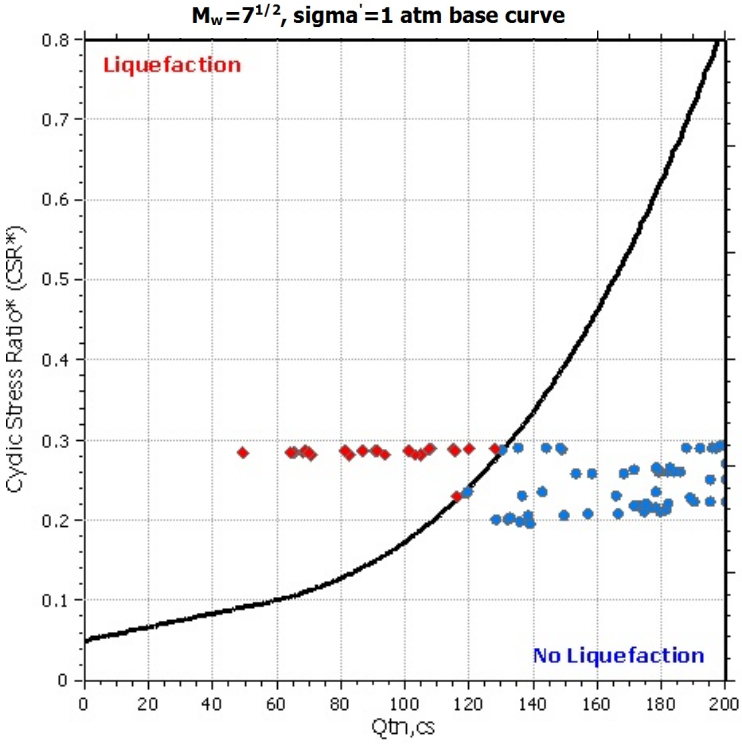
**CPT file : 1-CPT-02**

**Input parameters and analysis data**

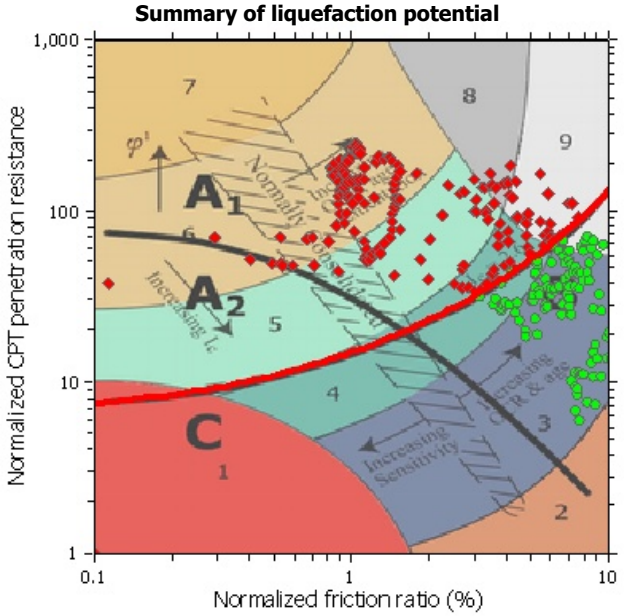
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | NCEER (1998) | G.W.T. (in-situ): | 10.00 ft | Use fill: | No | Clay like behavior applied: | Sands only |
| Fines correction method: | NCEER (1998) | G.W.T. (earthq.): | 10.00 ft | Fill height: | N/A | Limit depth applied: | No |
| Points to test: | Based on Ic value | Average results interval: | 3 | Fill weight: | N/A | Limit depth: | N/A |
| Earthquake magnitude $M_w$: | 6.20 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | MSF method: | Method based |
| Peak ground acceleration: | 0.50 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | | |




**$M_w=7^{1/2}$, sigma'=1 atm base curve**

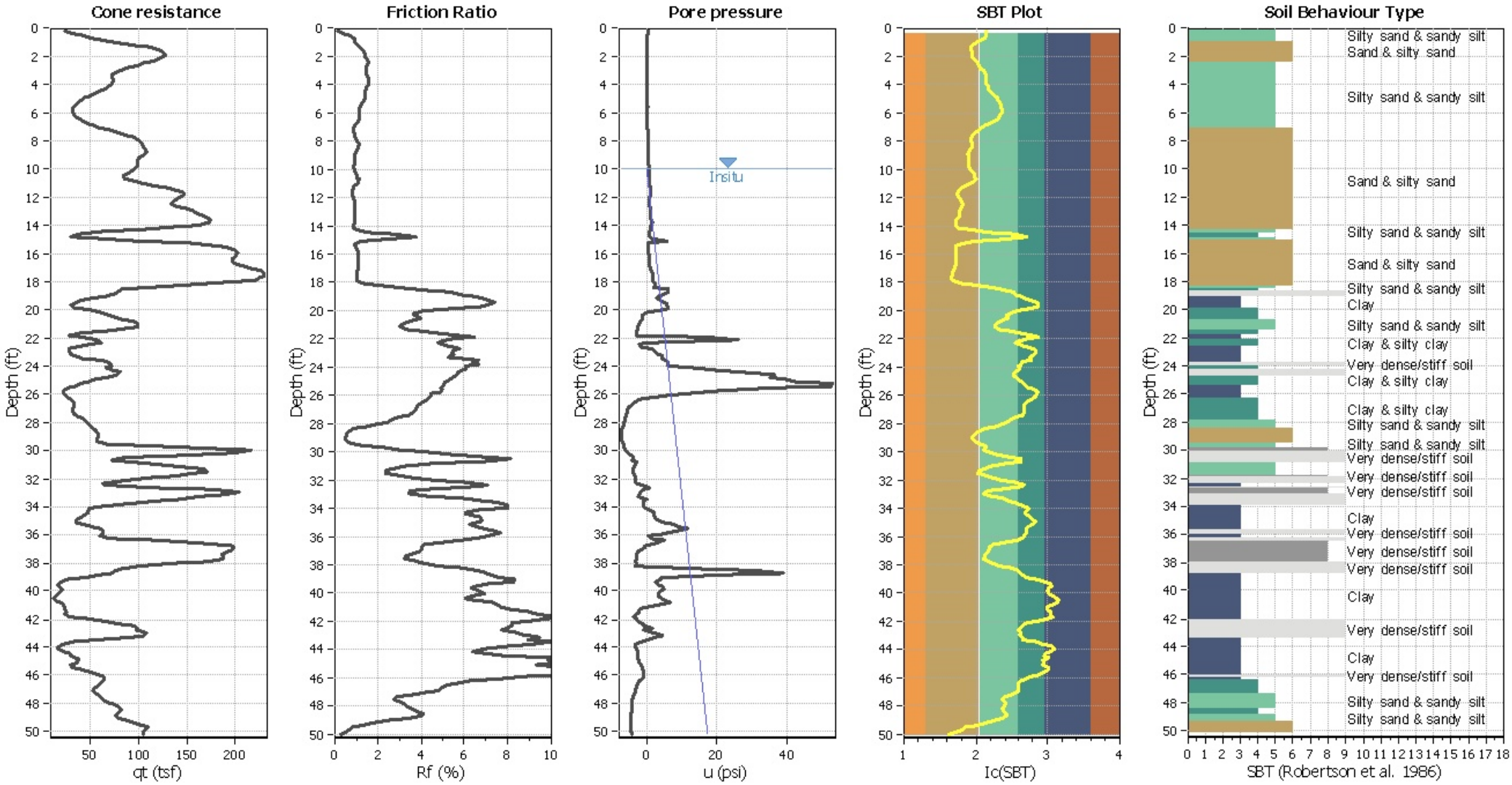



**Summary of liquefaction potential**




Zone $A_1$: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone $A_2$: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

## CPT basic interpretation plo



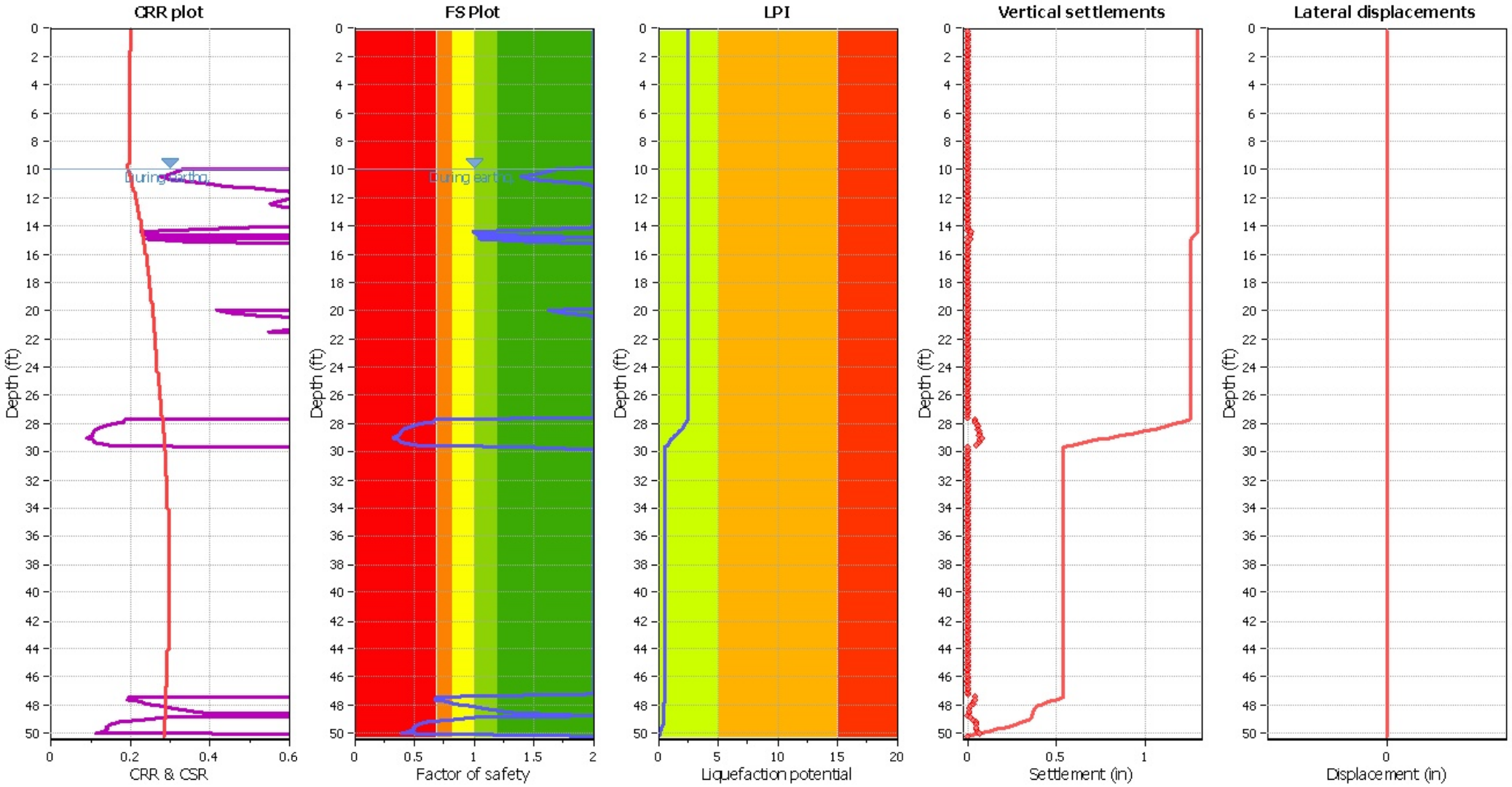

### Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | NCEER (1998) | Depth to water table (erthq.): | 10.00 ft | Fill weight: | N/A |
| Fines correction method: | NCEER (1998) | Average results interval: | 3 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.20 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.50 | Use fill: | No | Limit depth applied: | No |
| Depth to water table (insitu): | 10.00 ft | Fill height: | N/A | Limit depth: | N/A |

**SBT legend**

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

# Liquefaction analysis overall plot




## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | NCEER (1998) | Depth to water table (erthq.): | 10.00 ft | Fill weight: | N/A |
| Fines correction method: | NCEER (1998) | Average results interval: | 3 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.20 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.50 | Use fill: | No | Limit depth applied: | No |
| Depth to water table (insitu): | 10.00 ft | Fill height: | N/A | Limit depth: | N/A |

**F.S. color scheme**

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

**LPI color scheme**

- Very high risk
- High risk
- Low risk

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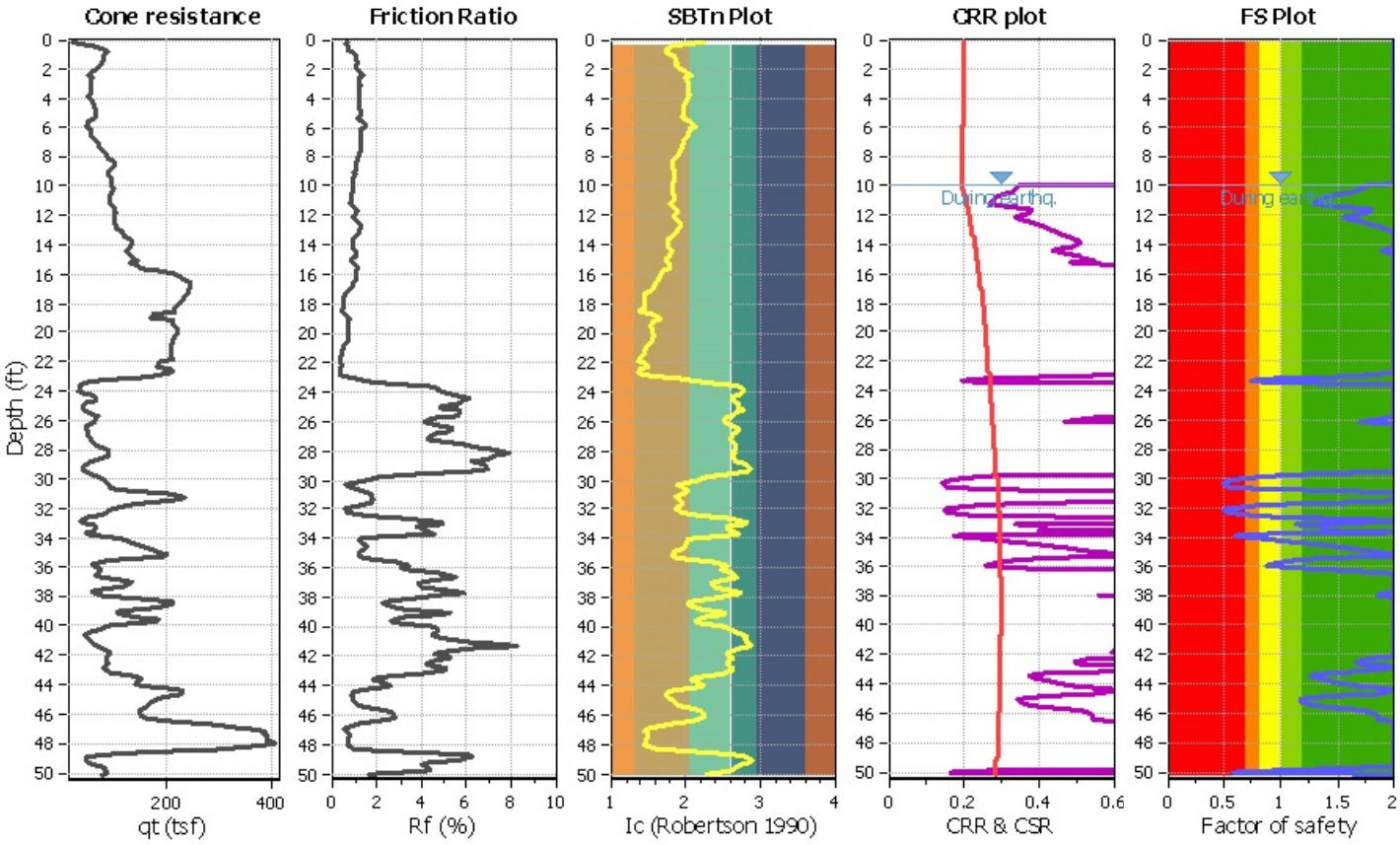
# LIQUEFACTION ANALYSIS REPORT

**Project title :** **Location :**

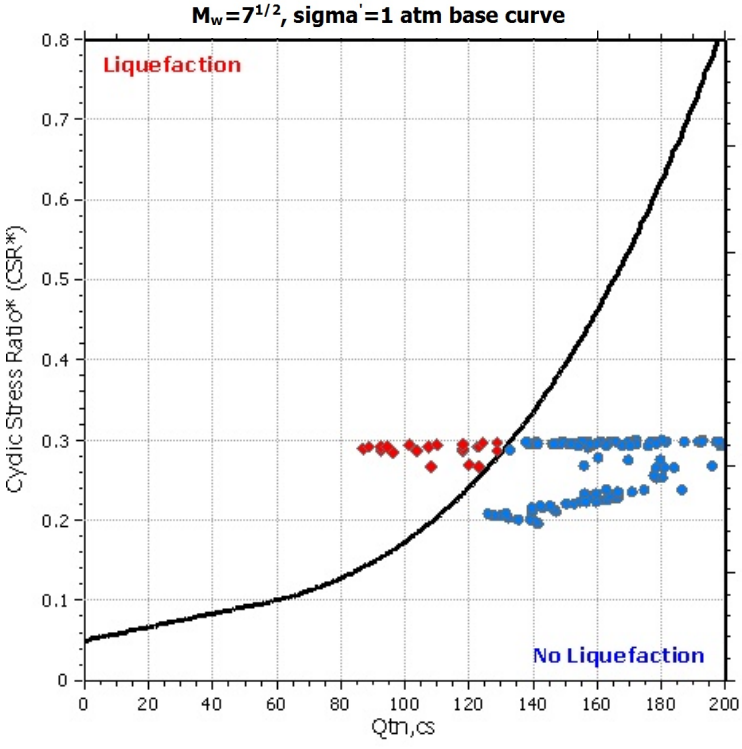
**CPT file : 1-CPT-03**

**Input parameters and analysis data**

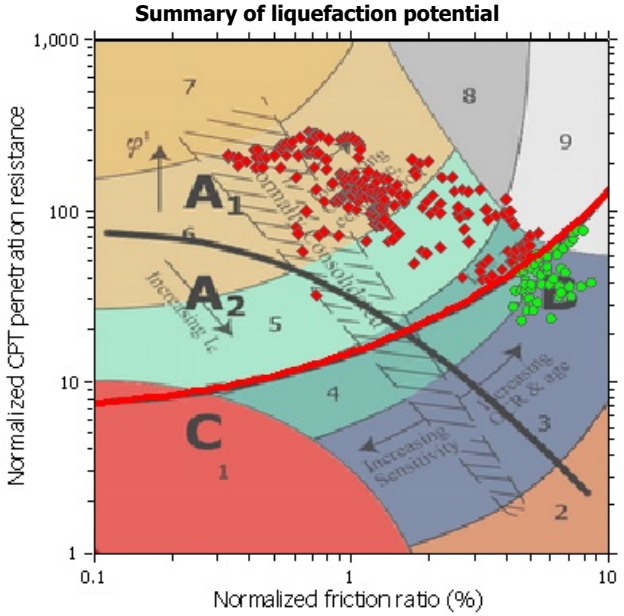
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | NCEER (1998) | G.W.T. (in-situ): | 10.00 ft | Use fill: | No | Clay like behavior applied: | Sands only |
| Fines correction method: | NCEER (1998) | G.W.T. (earthq.): | 10.00 ft | Fill height: | N/A | Limit depth applied: | No |
| Points to test: | Based on Ic value | Average results interval: | 3 | Fill weight: | N/A | Limit depth: | N/A |
| Earthquake magnitude $M_w$: | 6.20 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | MSF method: | Method based |
| Peak ground acceleration: | 0.50 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | | |




**$M_w=7^{1/2}$, sigma'=1 atm base curve**

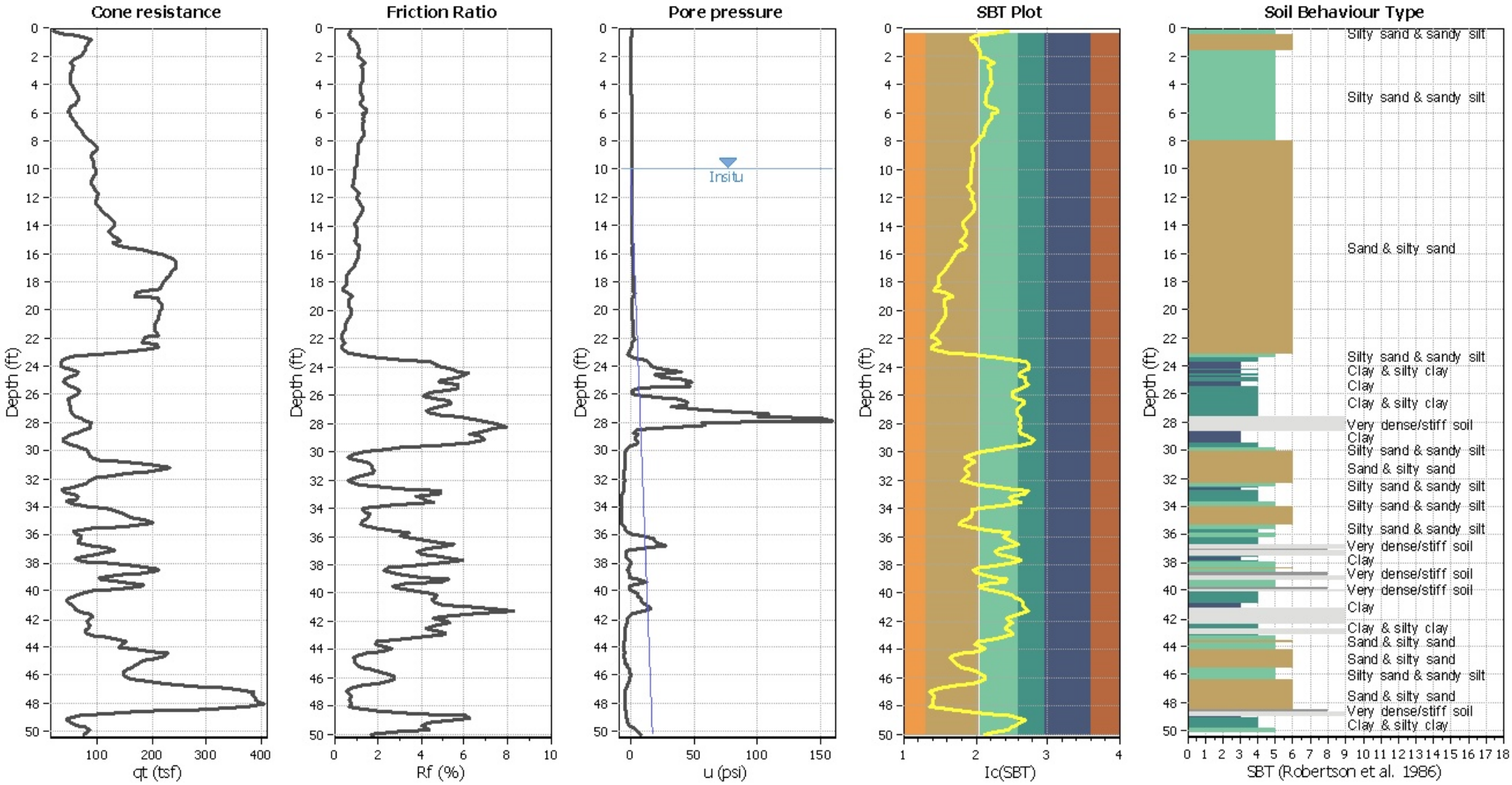



**Summary of liquefaction potential**




Zone $A_1$: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone $A_2$: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

## CPT basic interpretation plo



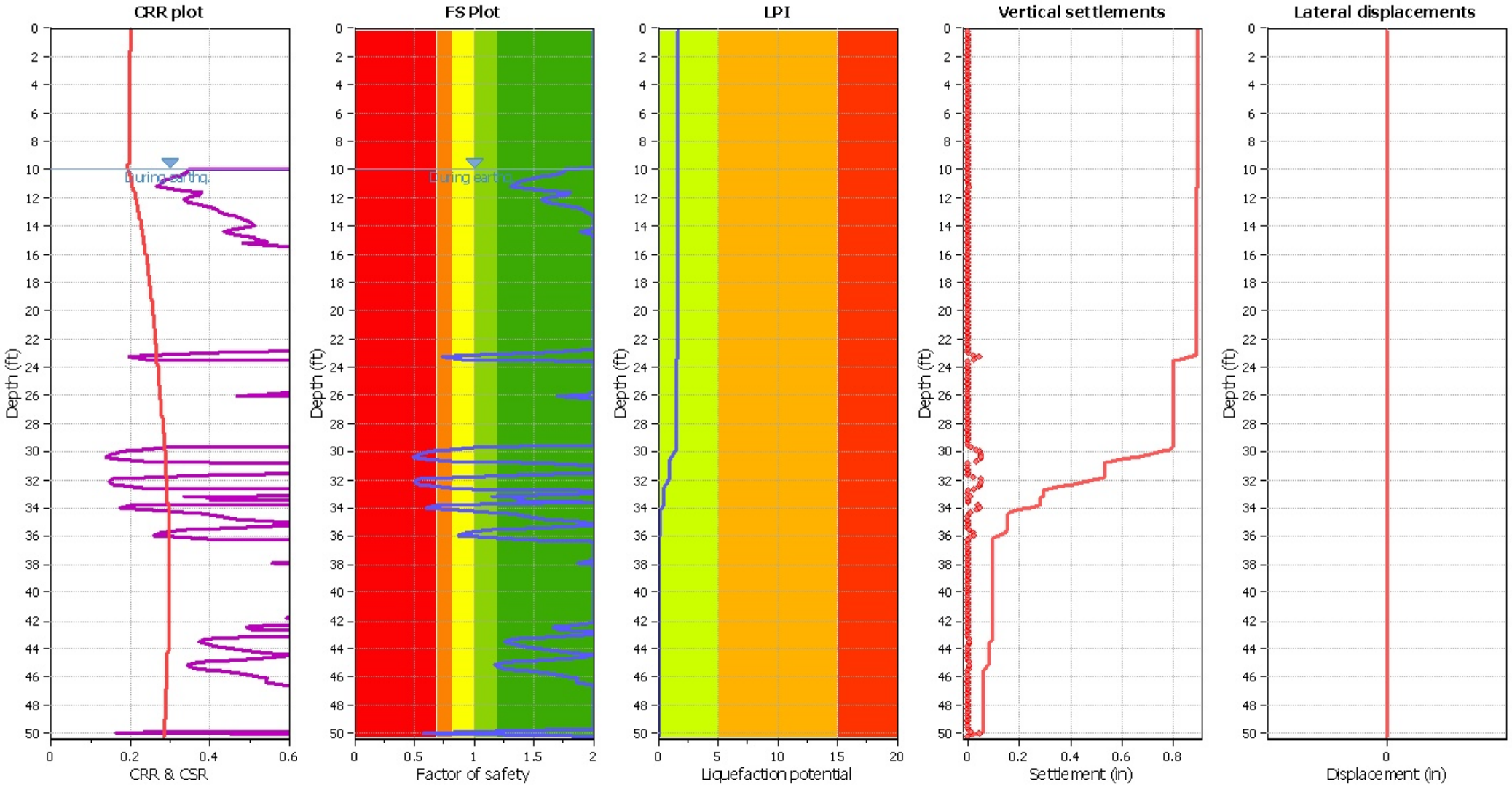

### Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | NCEER (1998) | Depth to water table (erthq.): | 10.00 ft | Fill weight: | N/A |
| Fines correction method: | NCEER (1998) | Average results interval: | 3 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.20 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.50 | Use fill: | No | Limit depth applied: | No |
| Depth to water table (insitu): | 10.00 ft | Fill height: | N/A | Limit depth: | N/A |

**SBT legend**

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

# Liquefaction analysis overall plot




## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | NCEER (1998) | Depth to water table (erthq.): | 10.00 ft | Fill weight: | N/A |
| Fines correction method: | NCEER (1998) | Average results interval: | 3 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.20 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.50 | Use fill: | No | Limit depth applied: | No |
| Depth to water table (insitu): | 10.00 ft | Fill height: | N/A | Limit depth: | N/A |

**F.S. color scheme**

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

**LPI color scheme**

- Very high risk
- High risk
- Low risk

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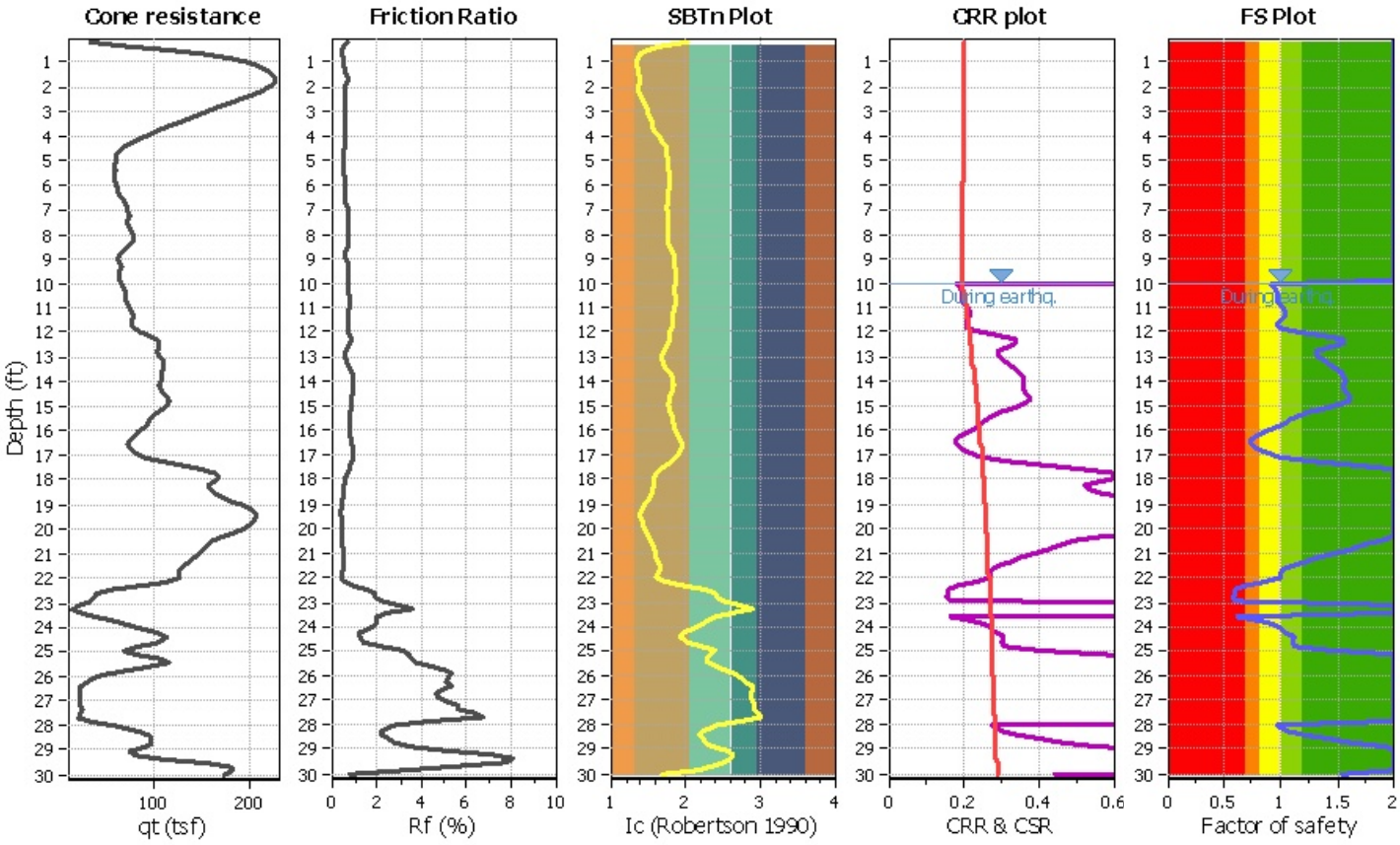
# LIQUEFACTION ANALYSIS REPORT

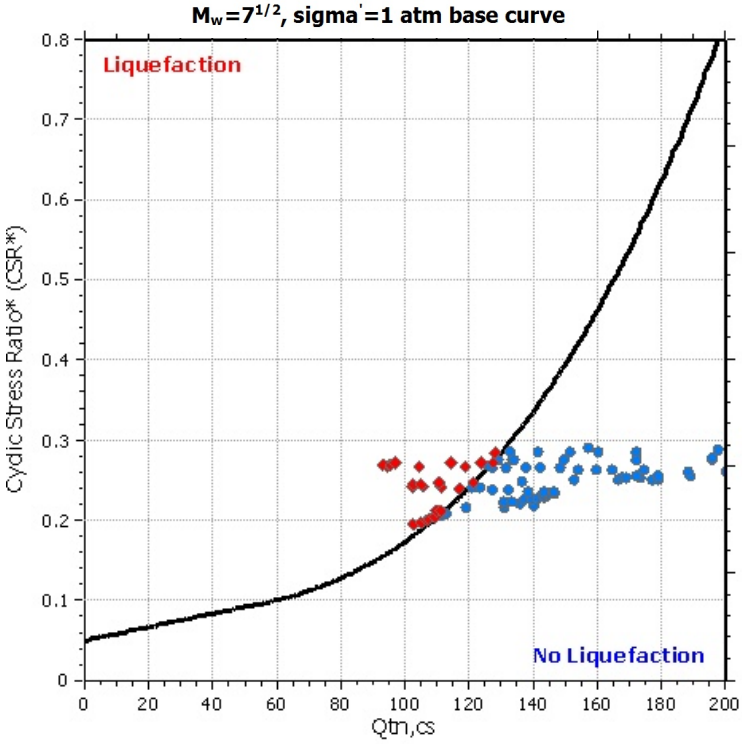
**Project title :** **Location :**

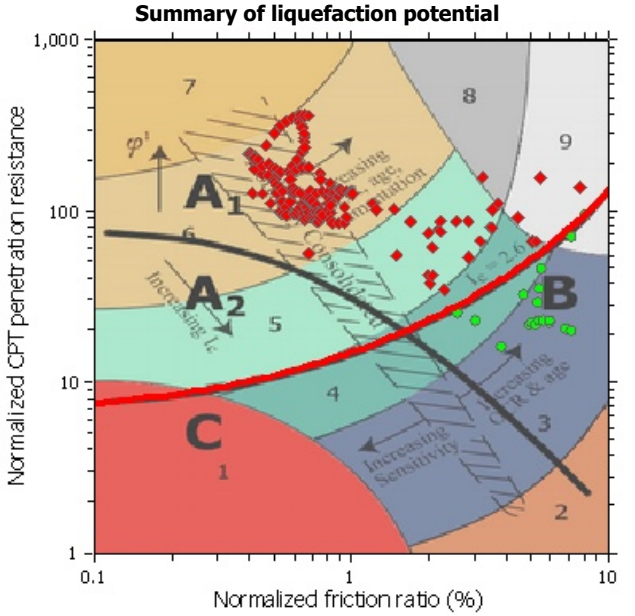
**CPT file : 1-CPT-04**

**Input parameters and analysis data**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | NCEER (1998) | G.W.T. (in-situ): | 10.00 ft | Use fill: | No | Clay like behavior applied: | Sands only |
| Fines correction method: | NCEER (1998) | G.W.T. (earthq.): | 10.00 ft | Fill height: | N/A | Limit depth applied: | No |
| Points to test: | Based on Ic value | Average results interval: | 3 | Fill weight: | N/A | Limit depth: | N/A |
| Earthquake magnitude $M_w$: | 6.20 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | MSF method: | Method based |
| Peak ground acceleration: | 0.50 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | | |

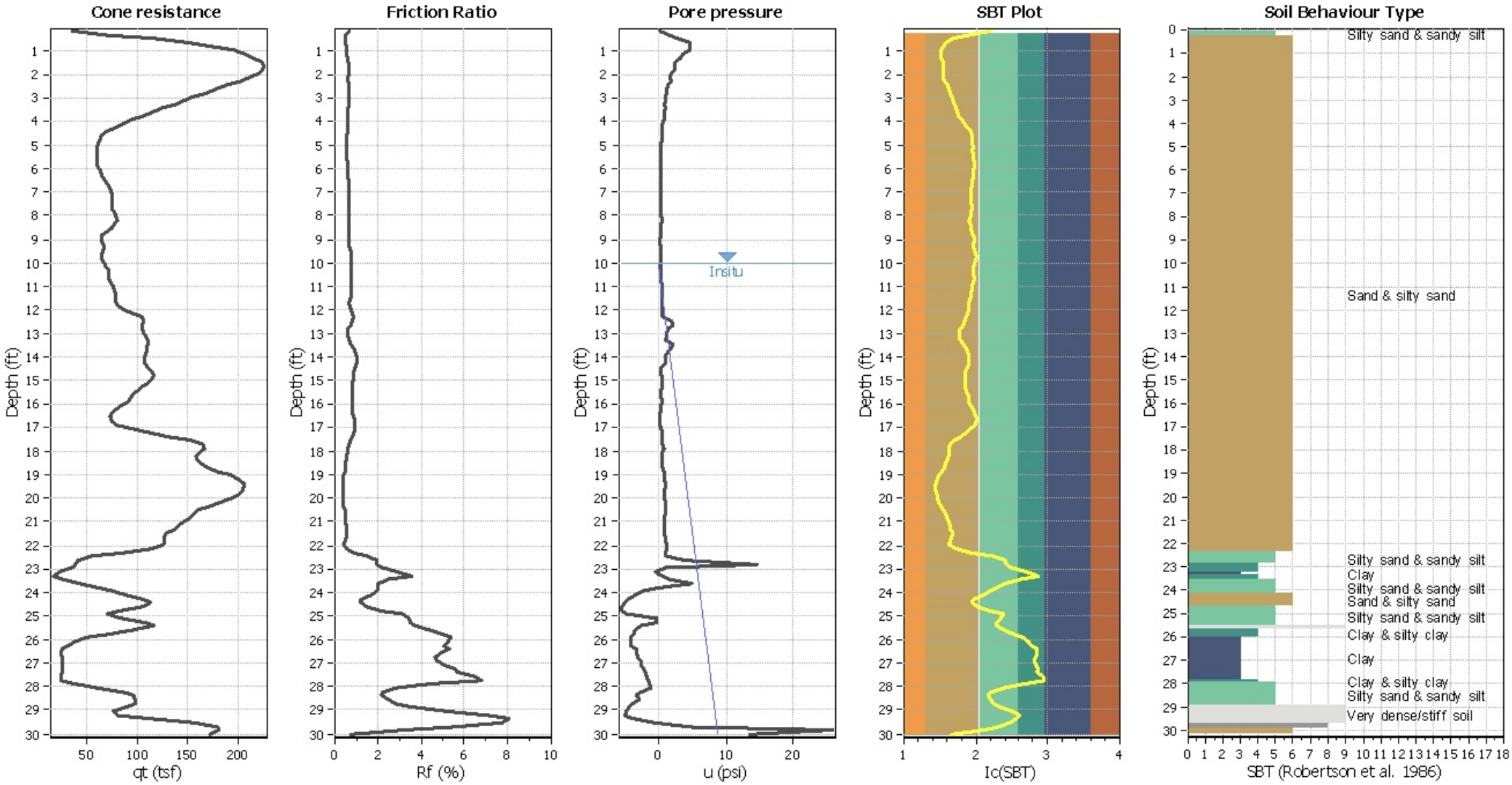



Zone $A_1$: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone $A_2$: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

## CPT basic interpretation plo



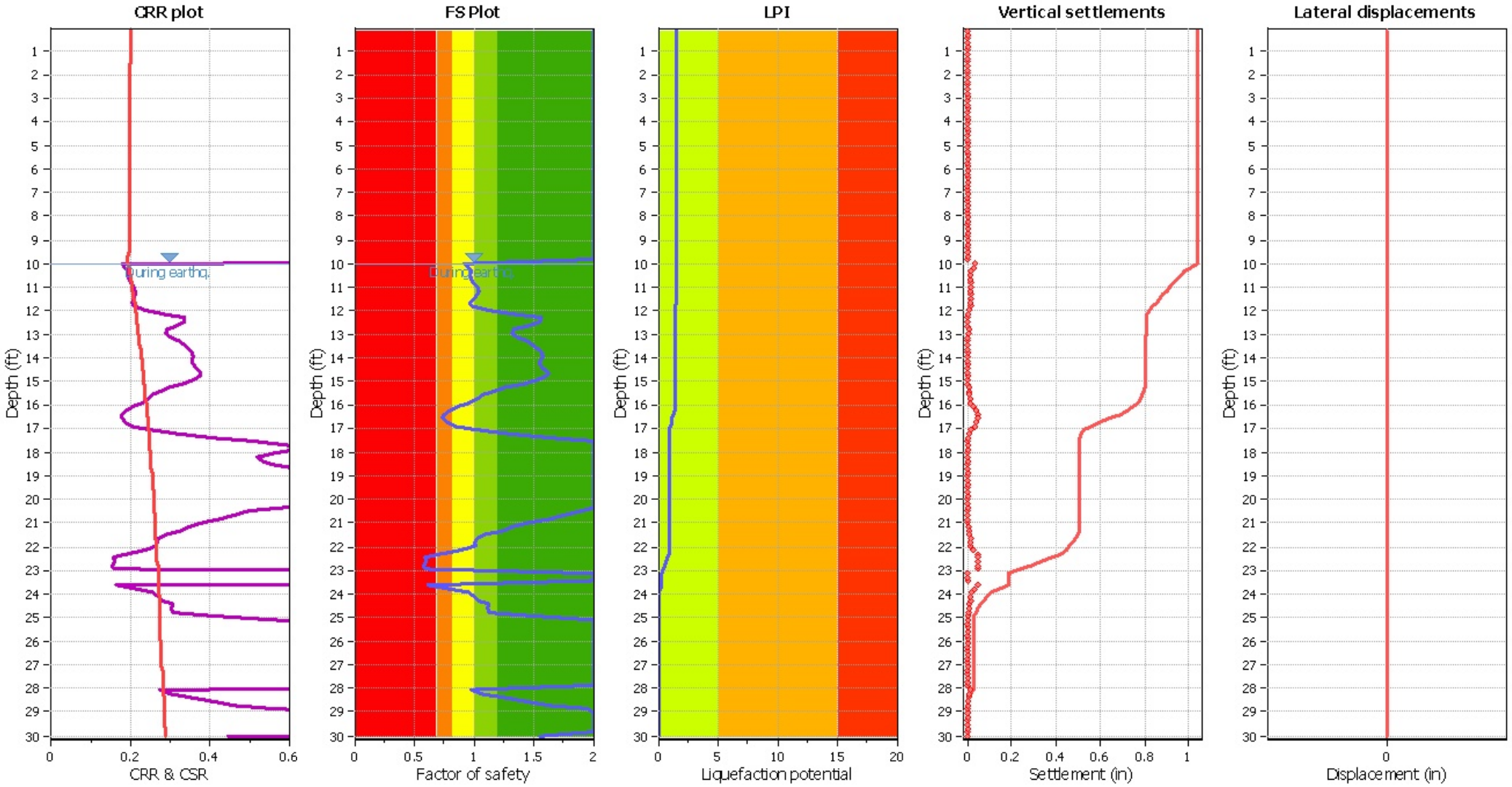

### Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | NCEER (1998) | Depth to water table (erthq.): | 10.00 ft | Fill weight: | N/A |
| Fines correction method: | NCEER (1998) | Average results interval: | 3 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.20 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.50 | Use fill: | No | Limit depth applied: | No |
| Depth to water table (insitu): | 10.00 ft | Fill height: | N/A | Limit depth: | N/A |

**SBT legend**

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

# Liquefaction analysis overall plot




## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | NCEER (1998) | Depth to water table (erthq.): | 10.00 ft | Fill weight: | N/A |
| Fines correction method: | NCEER (1998) | Average results interval: | 3 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.20 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.50 | Use fill: | No | Limit depth applied: | No |
| Depth to water table (insitu): | 10.00 ft | Fill height: | N/A | Limit depth: | N/A |

**F.S. color scheme**

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

**LPI color scheme**

- Very high risk
- High risk
- Low risk

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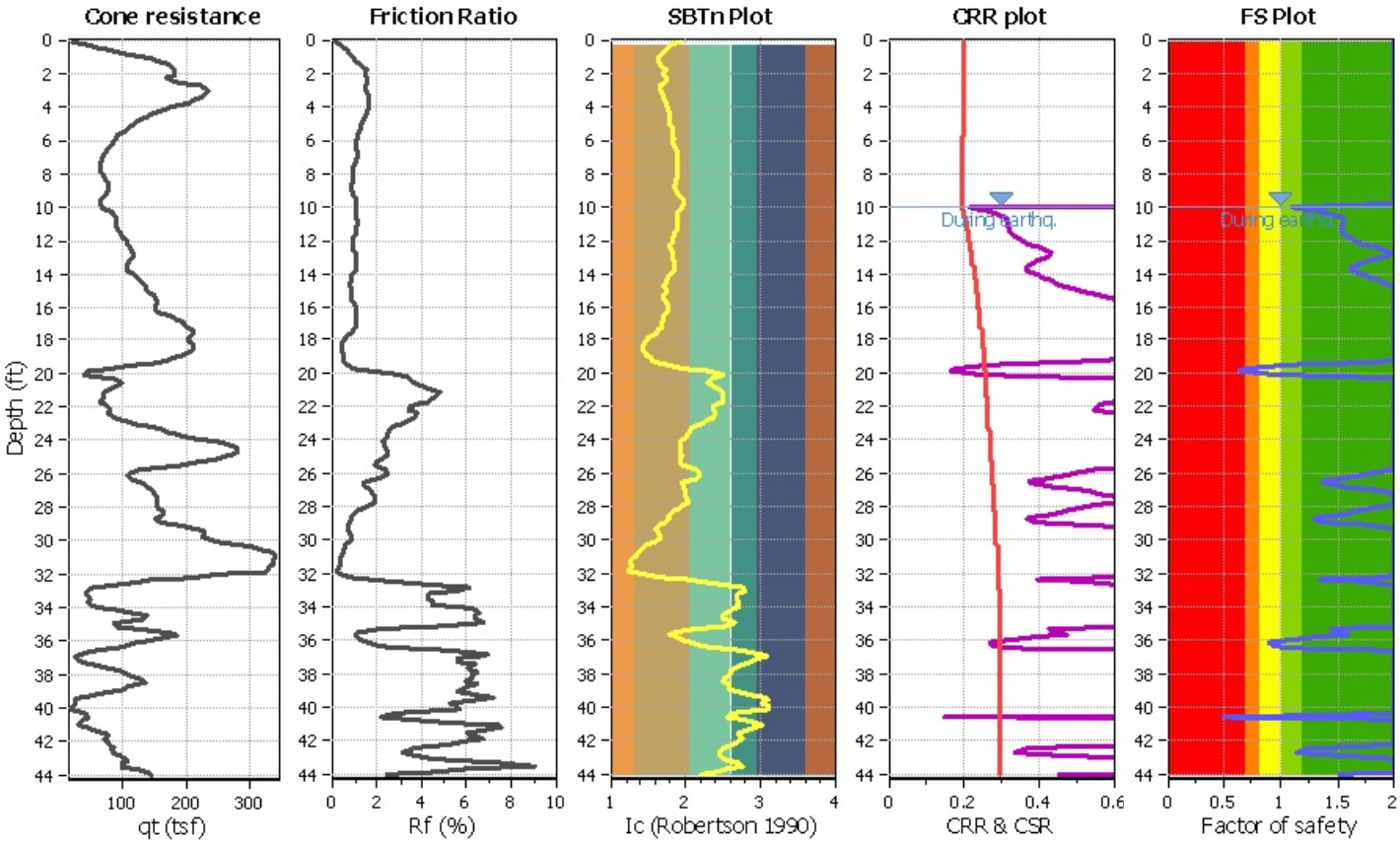
# LIQUEFACTION ANALYSIS REPORT

**Project title :** **Location :**

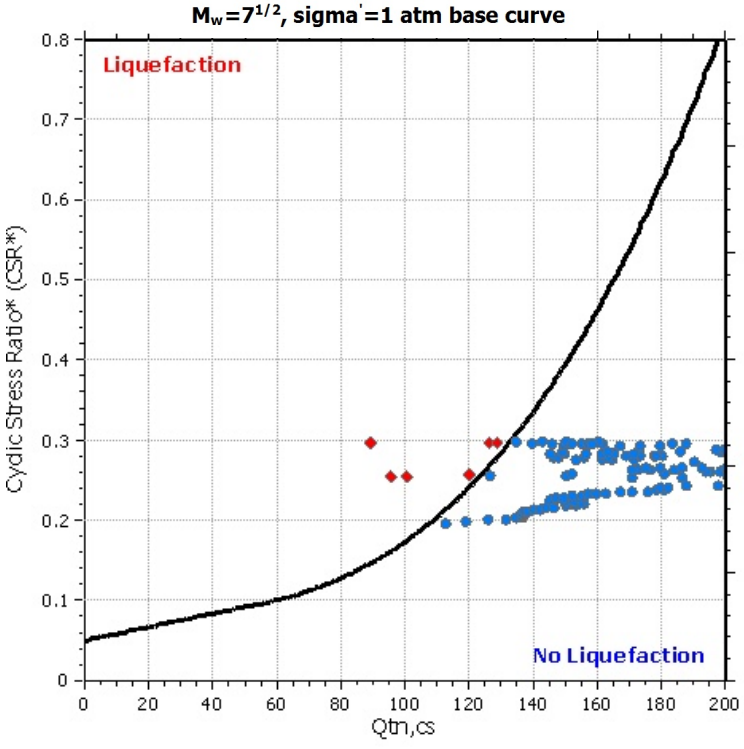
**CPT file : 1-CPT-05**

**Input parameters and analysis data**

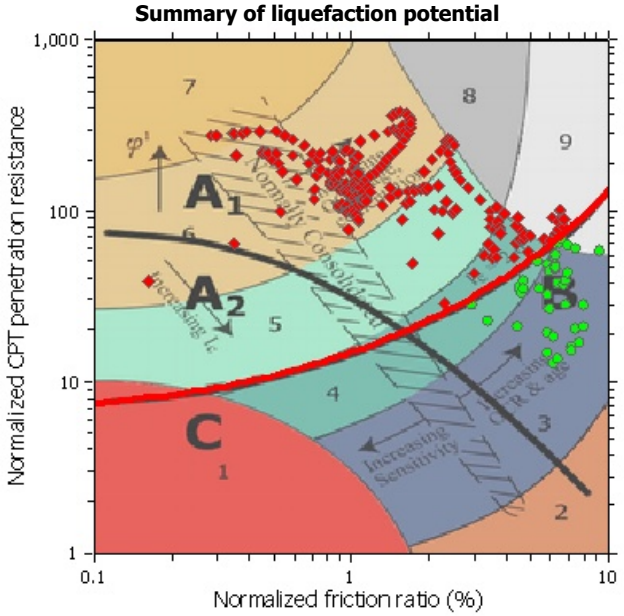
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | NCEER (1998) | G.W.T. (in-situ): | 10.00 ft | Use fill: | No | Clay like behavior applied: | Sands only |
| Fines correction method: | NCEER (1998) | G.W.T. (earthq.): | 10.00 ft | Fill height: | N/A | Limit depth applied: | No |
| Points to test: | Based on Ic value | Average results interval: | 3 | Fill weight: | N/A | Limit depth: | N/A |
| Earthquake magnitude $M_w$: | 6.20 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | MSF method: | Method based |
| Peak ground acceleration: | 0.50 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | | |




**$M_w=7^{1/2}$, sigma'=1 atm base curve**

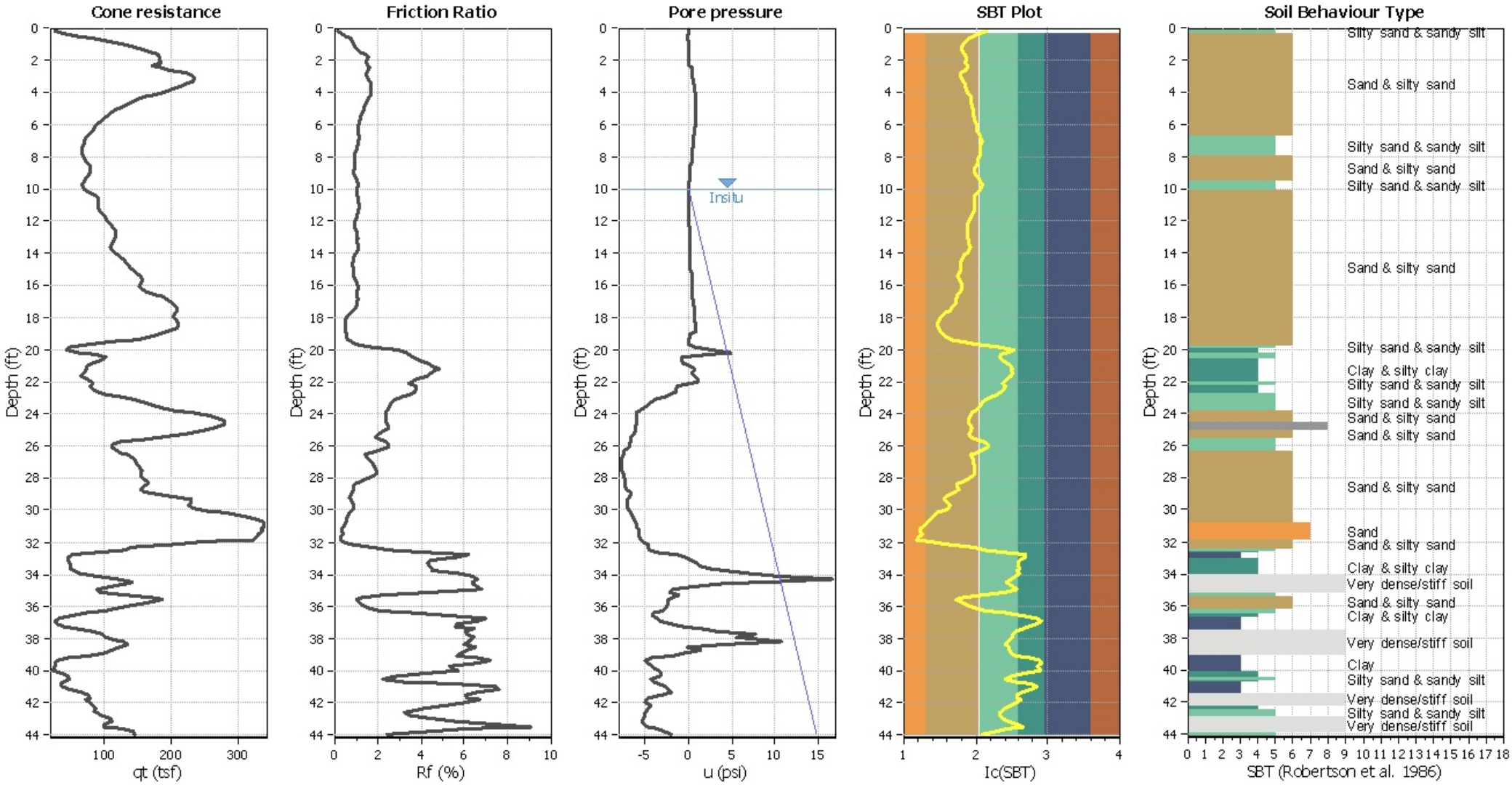



**Summary of liquefaction potential**




Zone $A_1$: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone $A_2$: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

## CPT basic interpretation plo



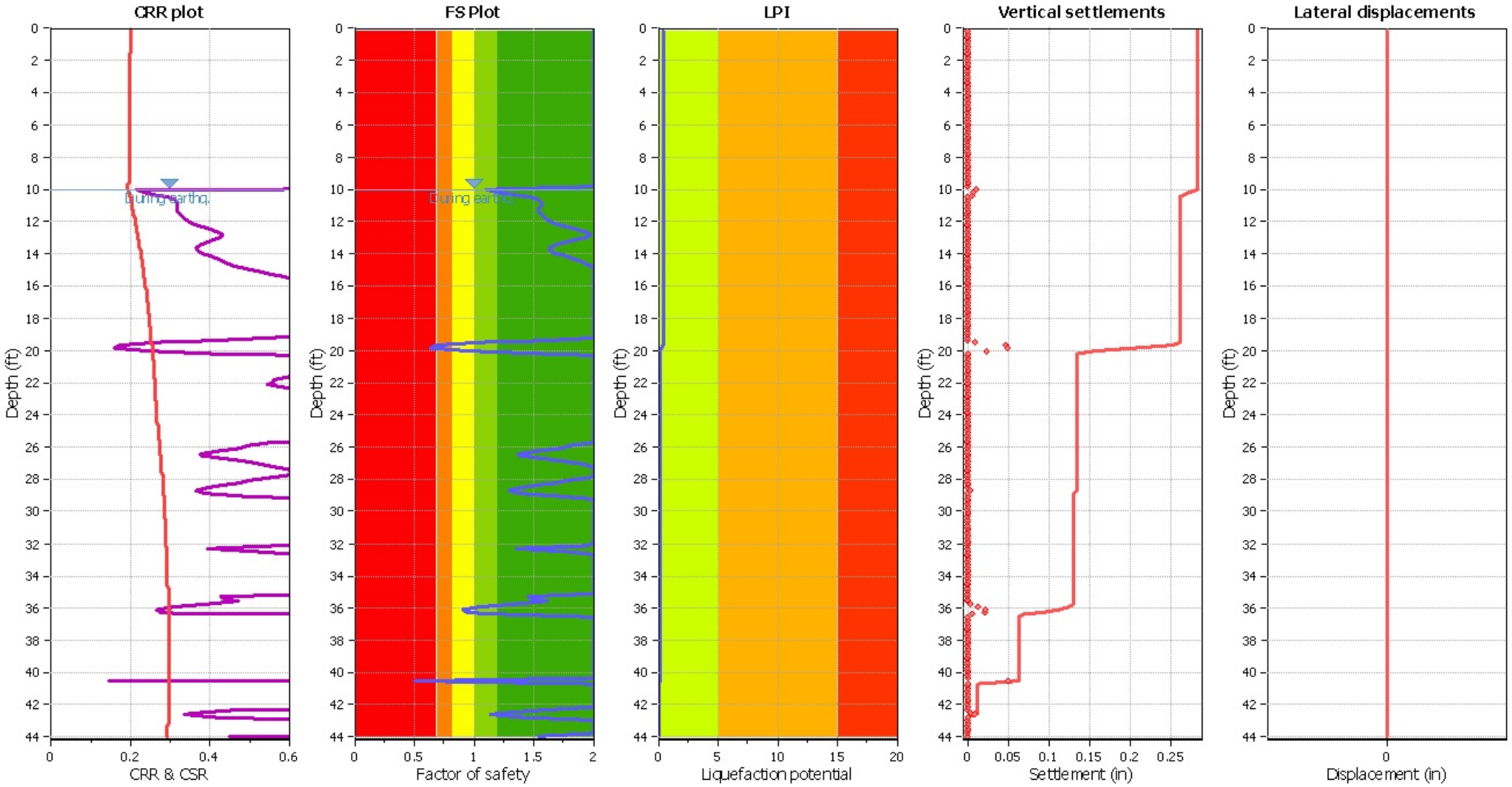

### Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | NCEER (1998) | Depth to water table (erthq.): | 10.00 ft | Fill weight: | N/A |
| Fines correction method: | NCEER (1998) | Average results interval: | 3 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.20 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.50 | Use fill: | No | Limit depth applied: | No |
| Depth to water table (insitu): | 10.00 ft | Fill height: | N/A | Limit depth: | N/A |

**SBT legend**

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

# Liquefaction analysis overall plot




## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | NCEER (1998) | Depth to water table (erthq.): | 10.00 ft | Fill weight: | N/A |
| Fines correction method: | NCEER (1998) | Average results interval: | 3 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.20 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.50 | Use fill: | No | Limit depth applied: | No |
| Depth to water table (insitu): | 10.00 ft | Fill height: | N/A | Limit depth: | N/A |

**F.S. color scheme**

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

**LPI color scheme**

- Very high risk
- High risk
- Low risk

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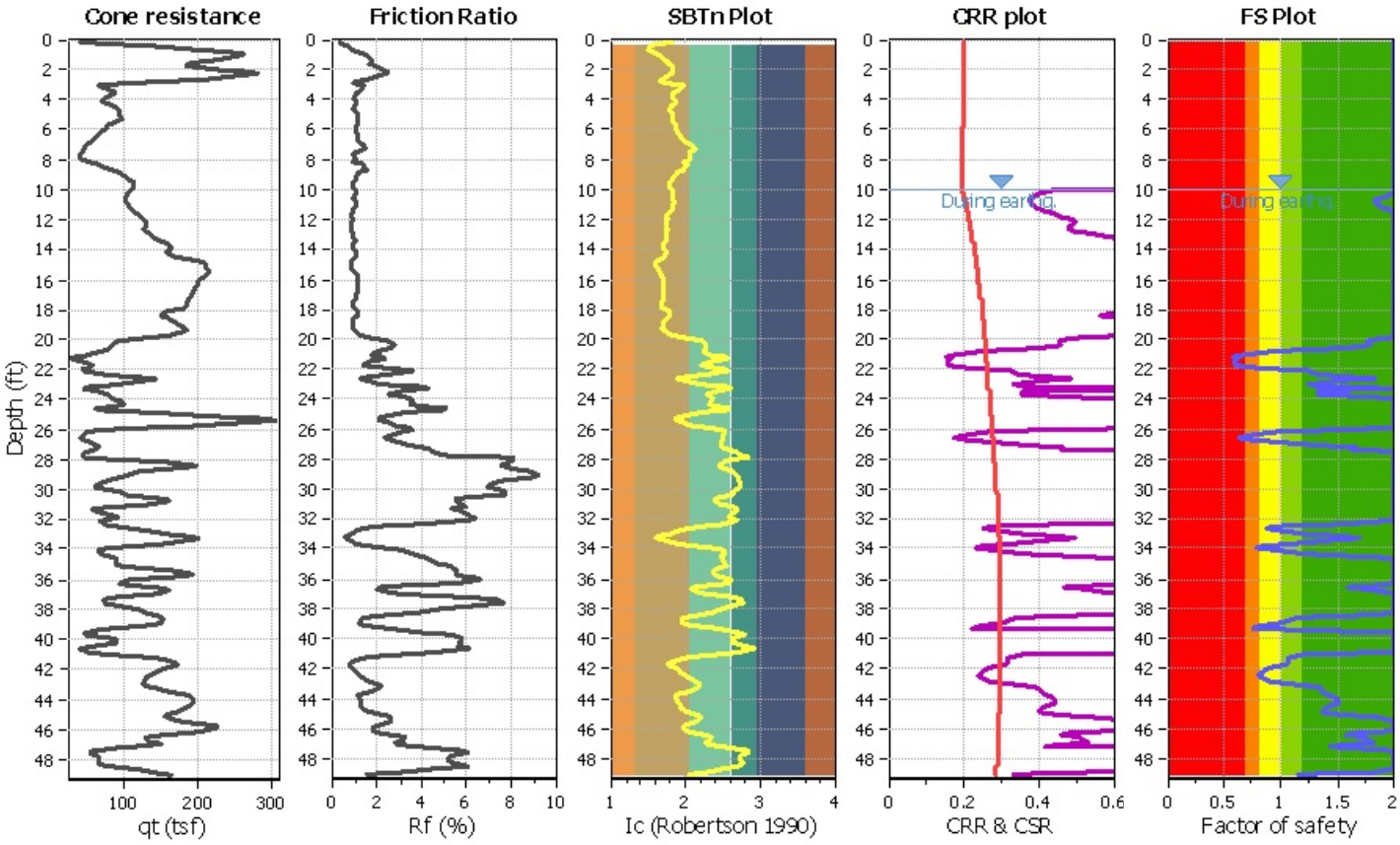
# LIQUEFACTION ANALYSIS REPORT

**Project title :** **Location :**

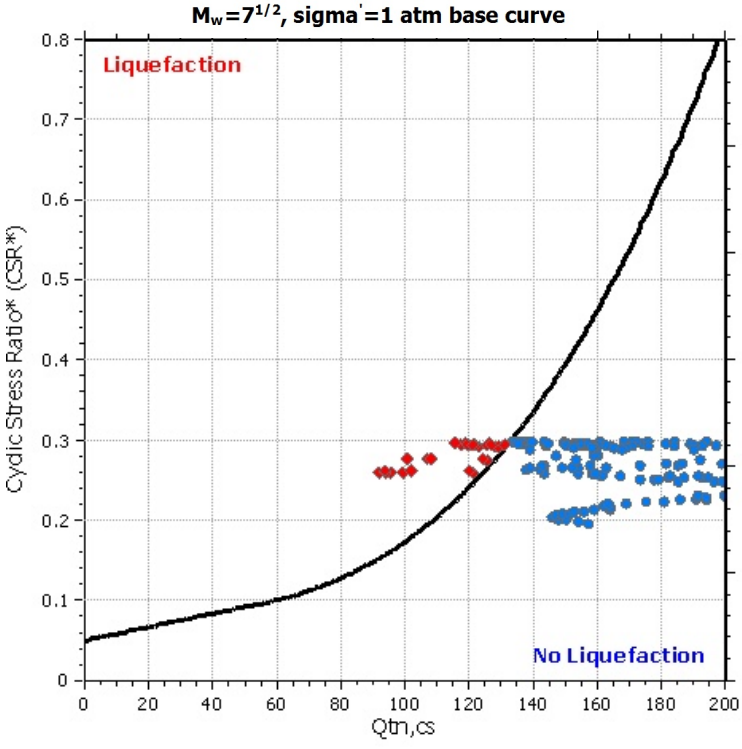
**CPT file : 1-CPT-06**

**Input parameters and analysis data**

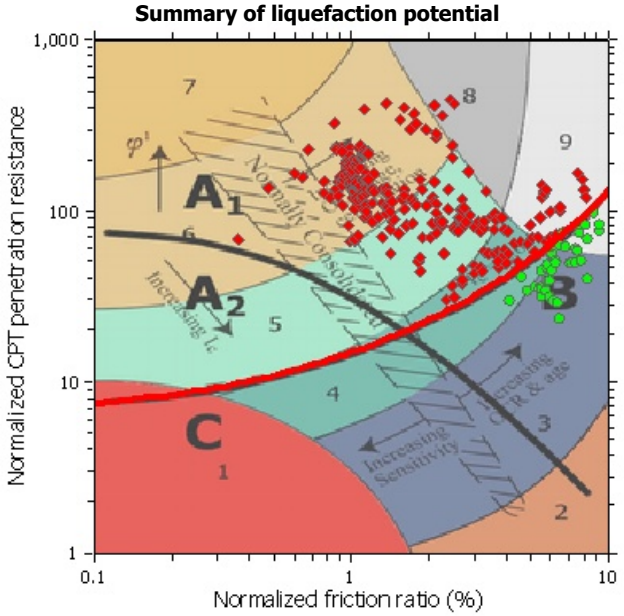
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | NCEER (1998) | G.W.T. (in-situ): | 10.00 ft | Use fill: | No | Clay like behavior applied: | Sands only |
| Fines correction method: | NCEER (1998) | G.W.T. (earthq.): | 10.00 ft | Fill height: | N/A | Limit depth applied: | No |
| Points to test: | Based on Ic value | Average results interval: | 3 | Fill weight: | N/A | Limit depth: | N/A |
| Earthquake magnitude $M_w$: | 6.20 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | MSF method: | Method based |
| Peak ground acceleration: | 0.50 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | | |




**$M_w=7^{1/2}$, sigma'=1 atm base curve**

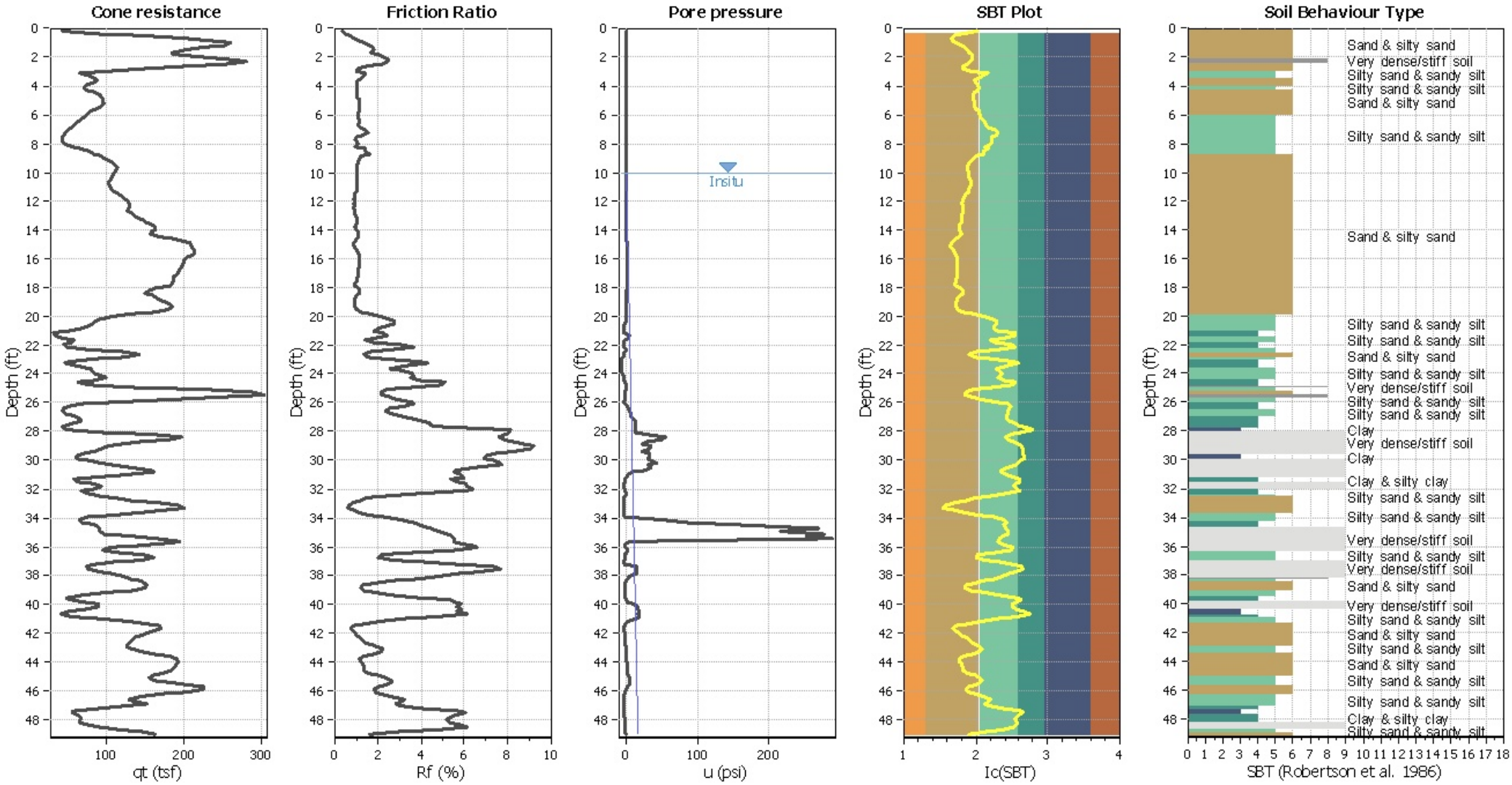



**Summary of liquefaction potential**




Zone $A_1$: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone $A_2$: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

## CPT basic interpretation plo



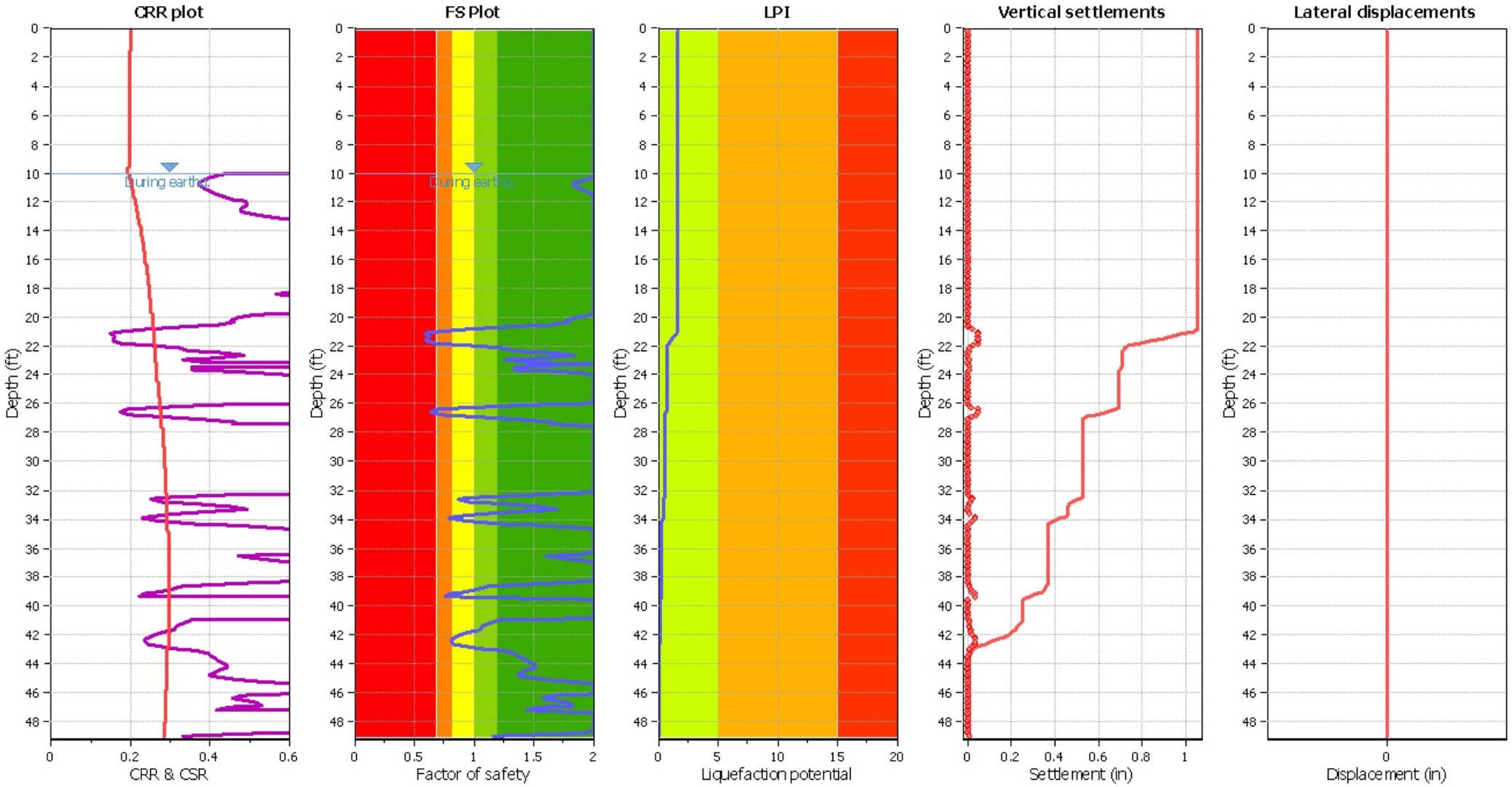

### Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | NCEER (1998) | Depth to water table (erthq.): | 10.00 ft | Fill weight: | N/A |
| Fines correction method: | NCEER (1998) | Average results interval: | 3 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.20 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.50 | Use fill: | No | Limit depth applied: | No |
| Depth to water table (insitu): | 10.00 ft | Fill height: | N/A | Limit depth: | N/A |

**SBT legend**

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

# Liquefaction analysis overall plot




## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | NCEER (1998) | Depth to water table (erthq.): | 10.00 ft | Fill weight: | N/A |
| Fines correction method: | NCEER (1998) | Average results interval: | 3 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.20 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.50 | Use fill: | No | Limit depth applied: | No |
| Depth to water table (insitu): | 10.00 ft | Fill height: | N/A | Limit depth: | N/A |

**F.S. color scheme**

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

**LPI color scheme**

- Very high risk
- High risk
- Low risk

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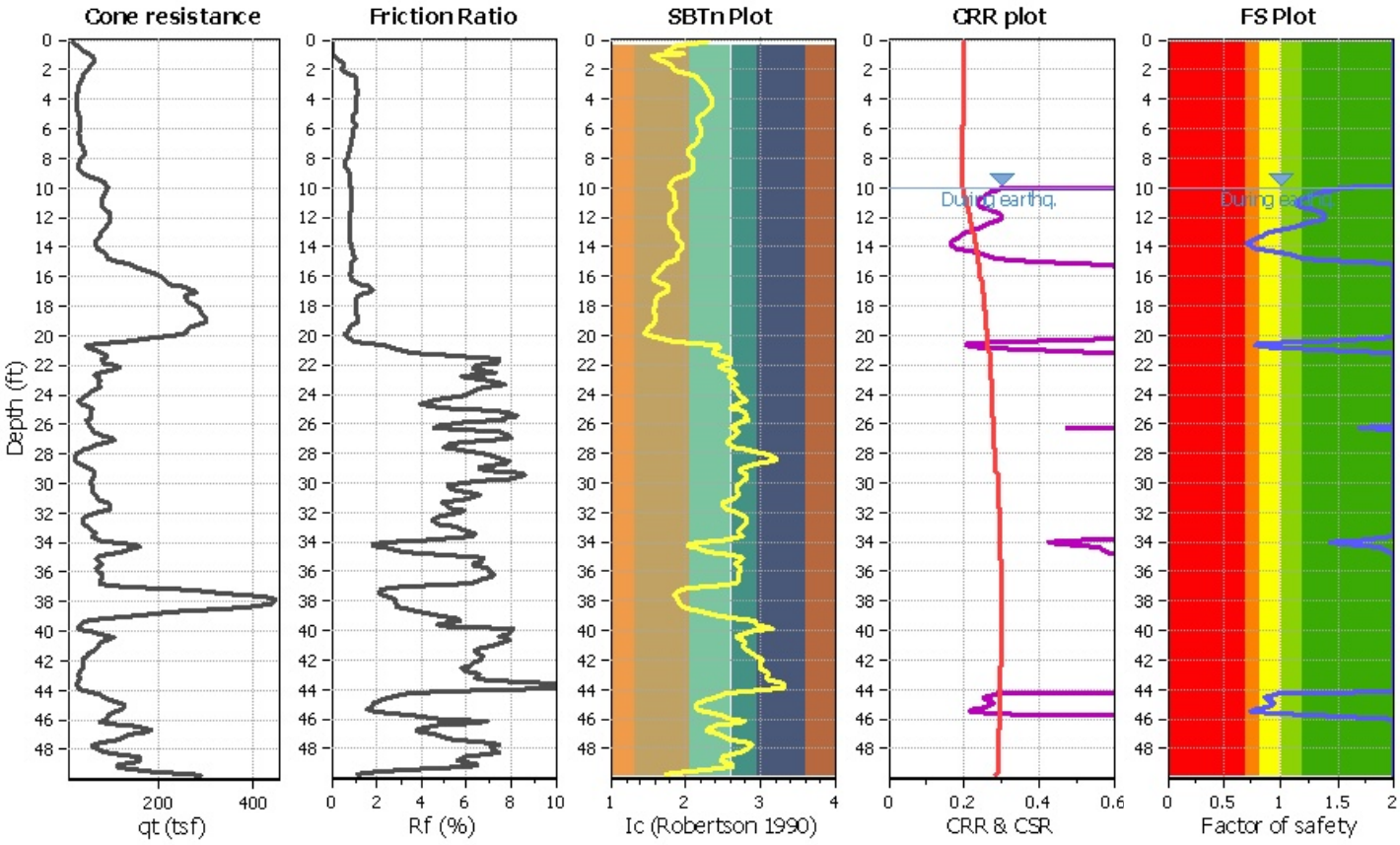
# LIQUEFACTION ANALYSIS REPORT

**Project title :** **Location :**

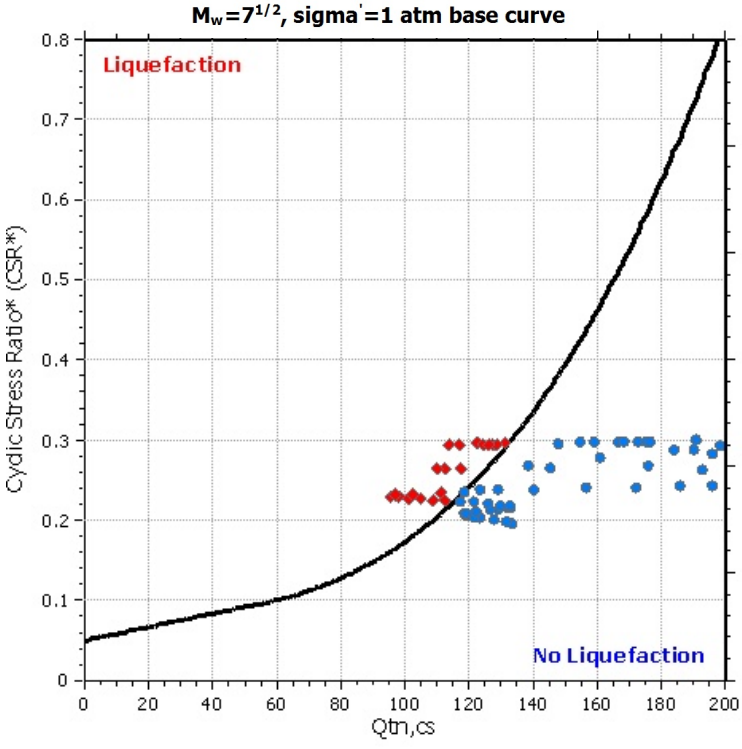
**CPT file : 1-CPT-07**

**Input parameters and analysis data**

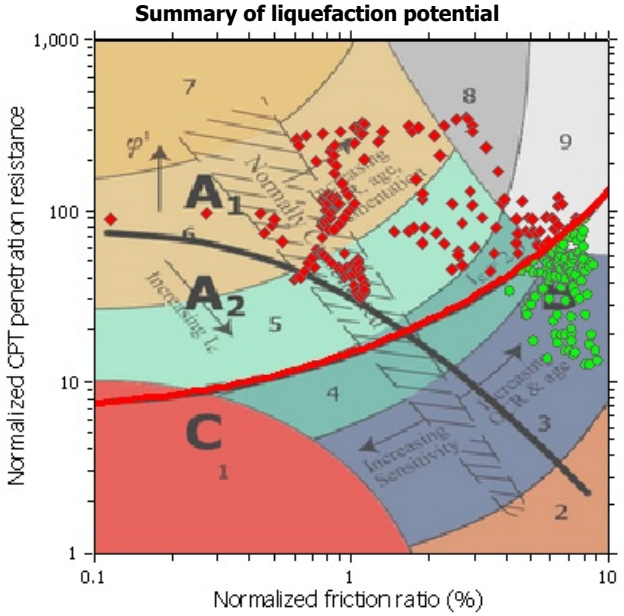
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | NCEER (1998) | G.W.T. (in-situ): | 10.00 ft | Use fill: | No | Clay like behavior applied: | Sands only |
| Fines correction method: | NCEER (1998) | G.W.T. (earthq.): | 10.00 ft | Fill height: | N/A | Limit depth applied: | No |
| Points to test: | Based on Ic value | Average results interval: | 3 | Fill weight: | N/A | Limit depth: | N/A |
| Earthquake magnitude $M_w$: | 6.20 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | MSF method: | Method based |
| Peak ground acceleration: | 0.50 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | | |




**$M_w=7^{1/2}$, sigma'=1 atm base curve**

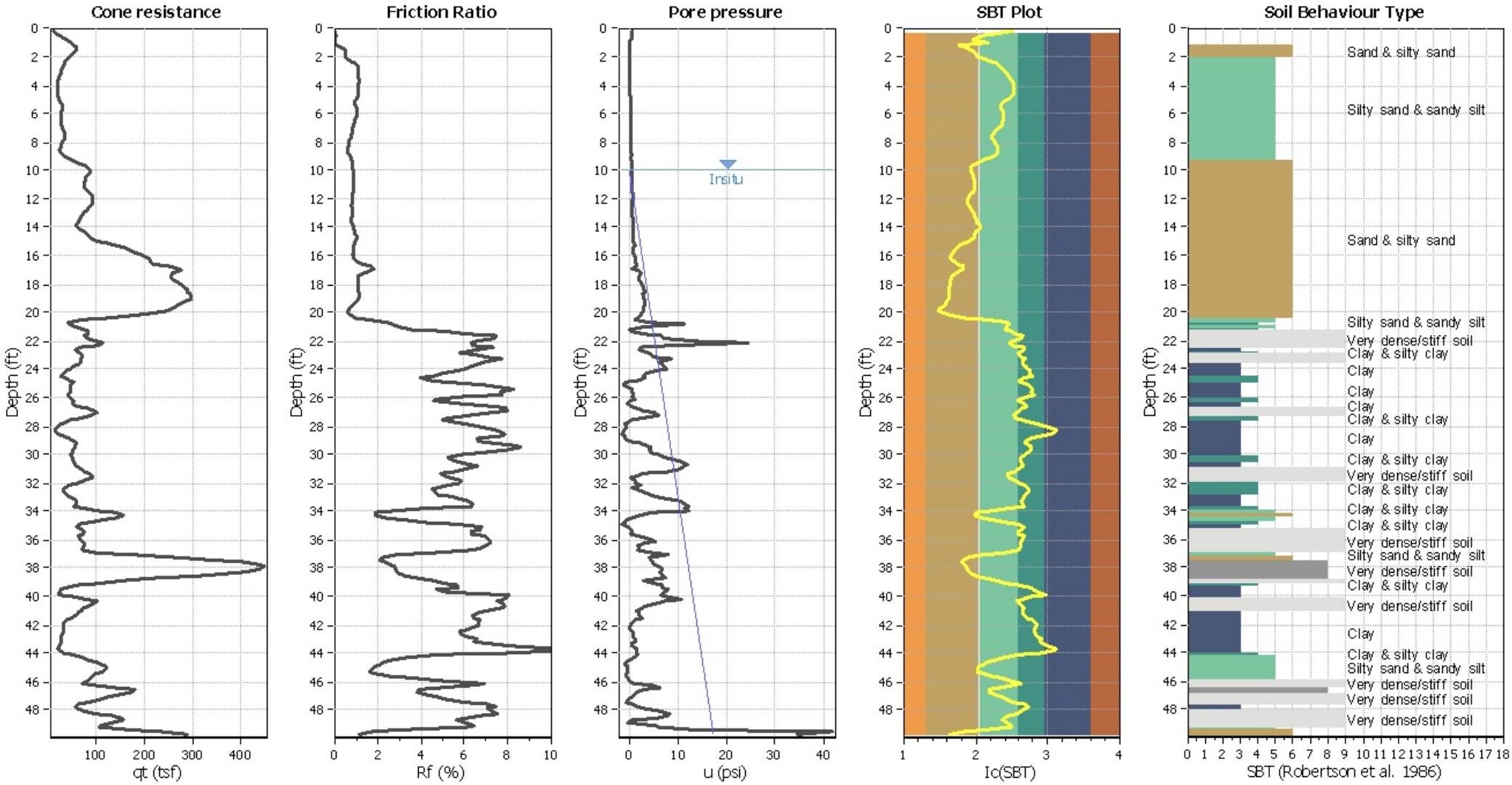



**Summary of liquefaction potential**




Zone $A_1$: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone $A_2$: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

## CPT basic interpretation plo



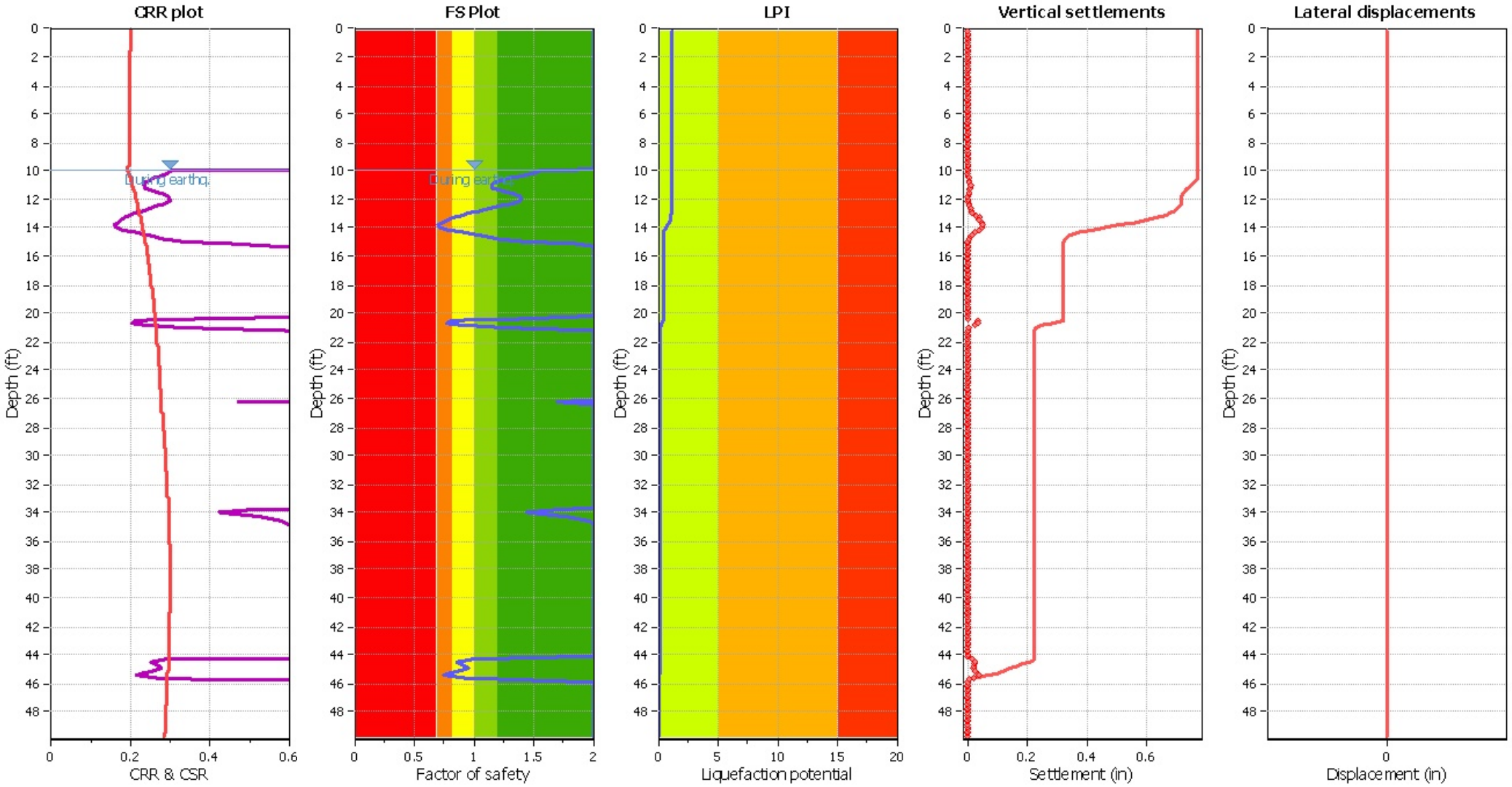

### Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | NCEER (1998) | Depth to water table (erthq.): | 10.00 ft | Fill weight: | N/A |
| Fines correction method: | NCEER (1998) | Average results interval: | 3 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.20 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.50 | Use fill: | No | Limit depth applied: | No |
| Depth to water table (insitu): | 10.00 ft | Fill height: | N/A | Limit depth: | N/A |

**SBT legend**

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

# Liquefaction analysis overall plot




## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | NCEER (1998) | Depth to water table (erthq.): | 10.00 ft | Fill weight: | N/A |
| Fines correction method: | NCEER (1998) | Average results interval: | 3 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.20 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.50 | Use fill: | No | Limit depth applied: | No |
| Depth to water table (insitu): | 10.00 ft | Fill height: | N/A | Limit depth: | N/A |

**F.S. color scheme**

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

**LPI color scheme**

- Very high risk
- High risk
- Low risk

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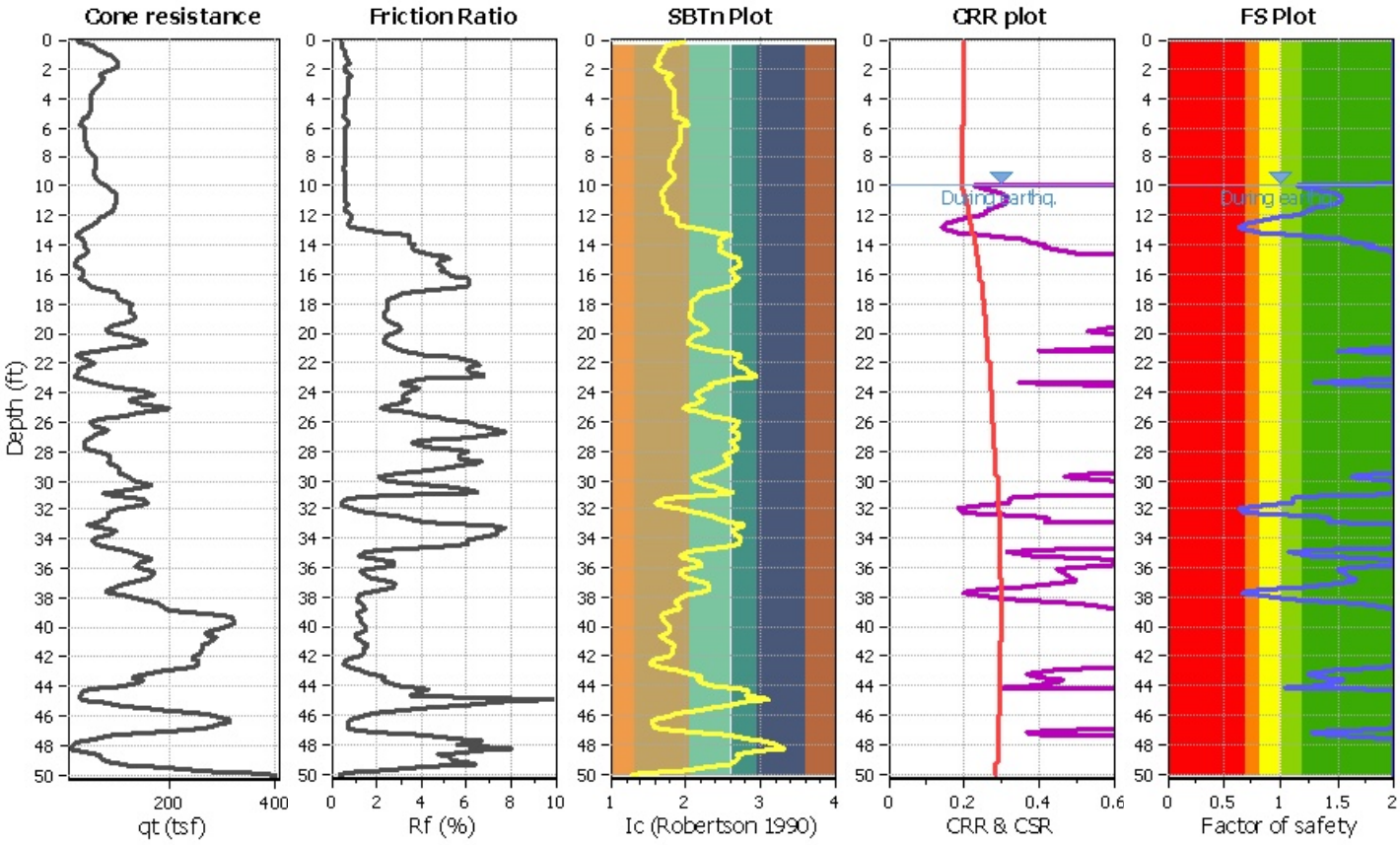
# LIQUEFACTION ANALYSIS REPORT

**Project title :** **Location :**

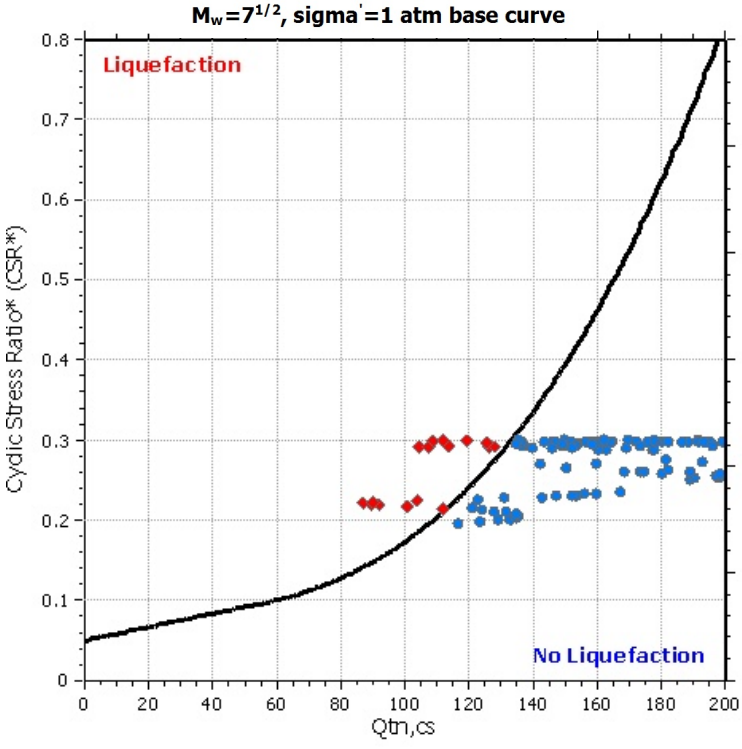
**CPT file : 1-CPT-08**

**Input parameters and analysis data**

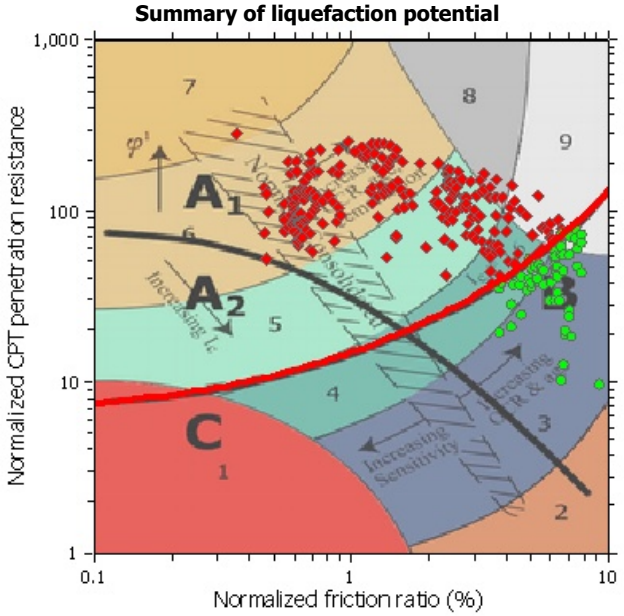
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | NCEER (1998) | G.W.T. (in-situ): | 10.00 ft | Use fill: | No | Clay like behavior applied: | Sands only |
| Fines correction method: | NCEER (1998) | G.W.T. (earthq.): | 10.00 ft | Fill height: | N/A | Limit depth applied: | No |
| Points to test: | Based on Ic value | Average results interval: | 3 | Fill weight: | N/A | Limit depth: | N/A |
| Earthquake magnitude $M_w$: | 6.20 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | MSF method: | Method based |
| Peak ground acceleration: | 0.50 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | | |




**$M_w=7^{1/2}$, sigma'=1 atm base curve**

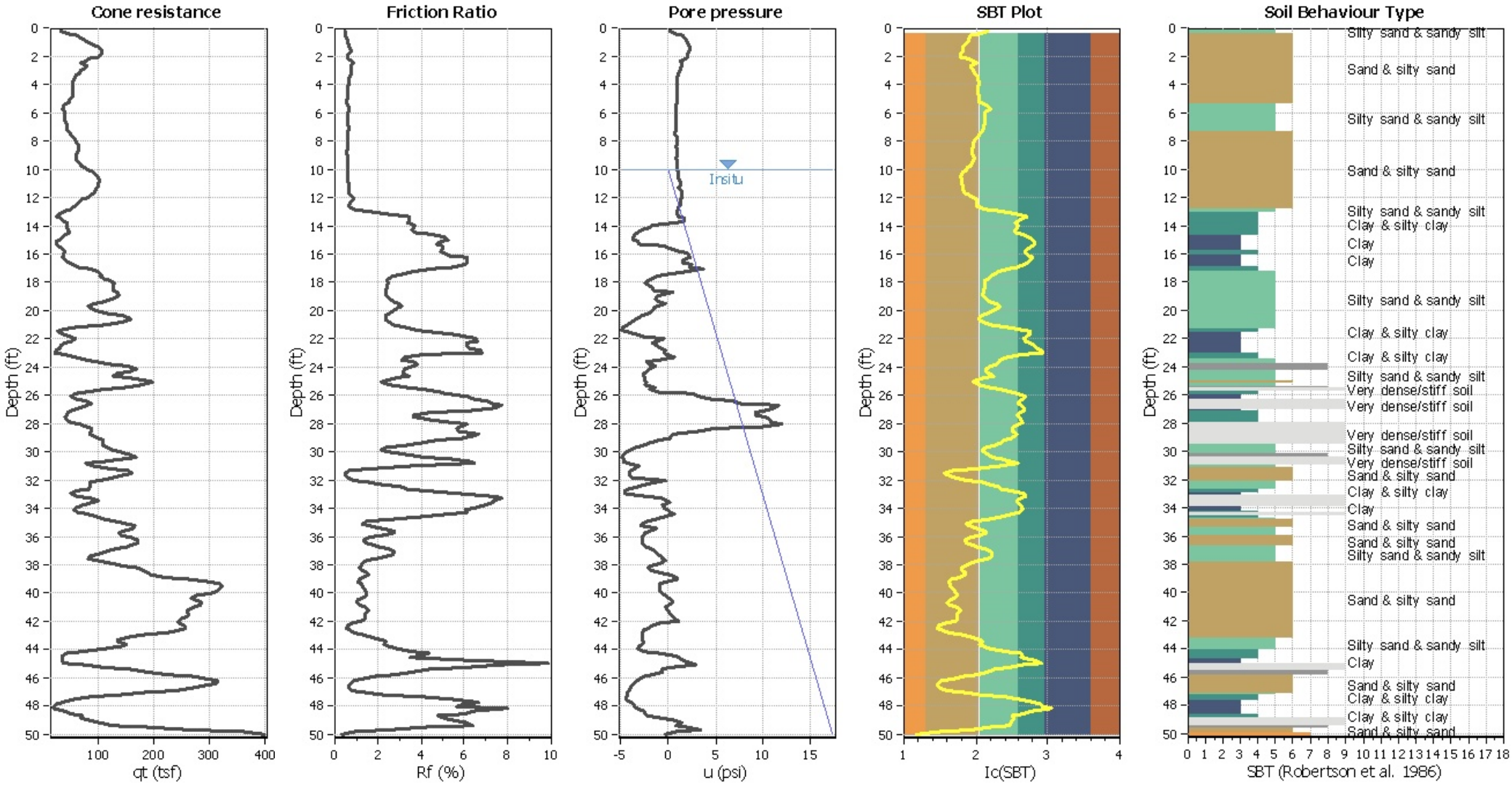



**Summary of liquefaction potential**




Zone $A_1$: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone $A_2$: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

## CPT basic interpretation plo



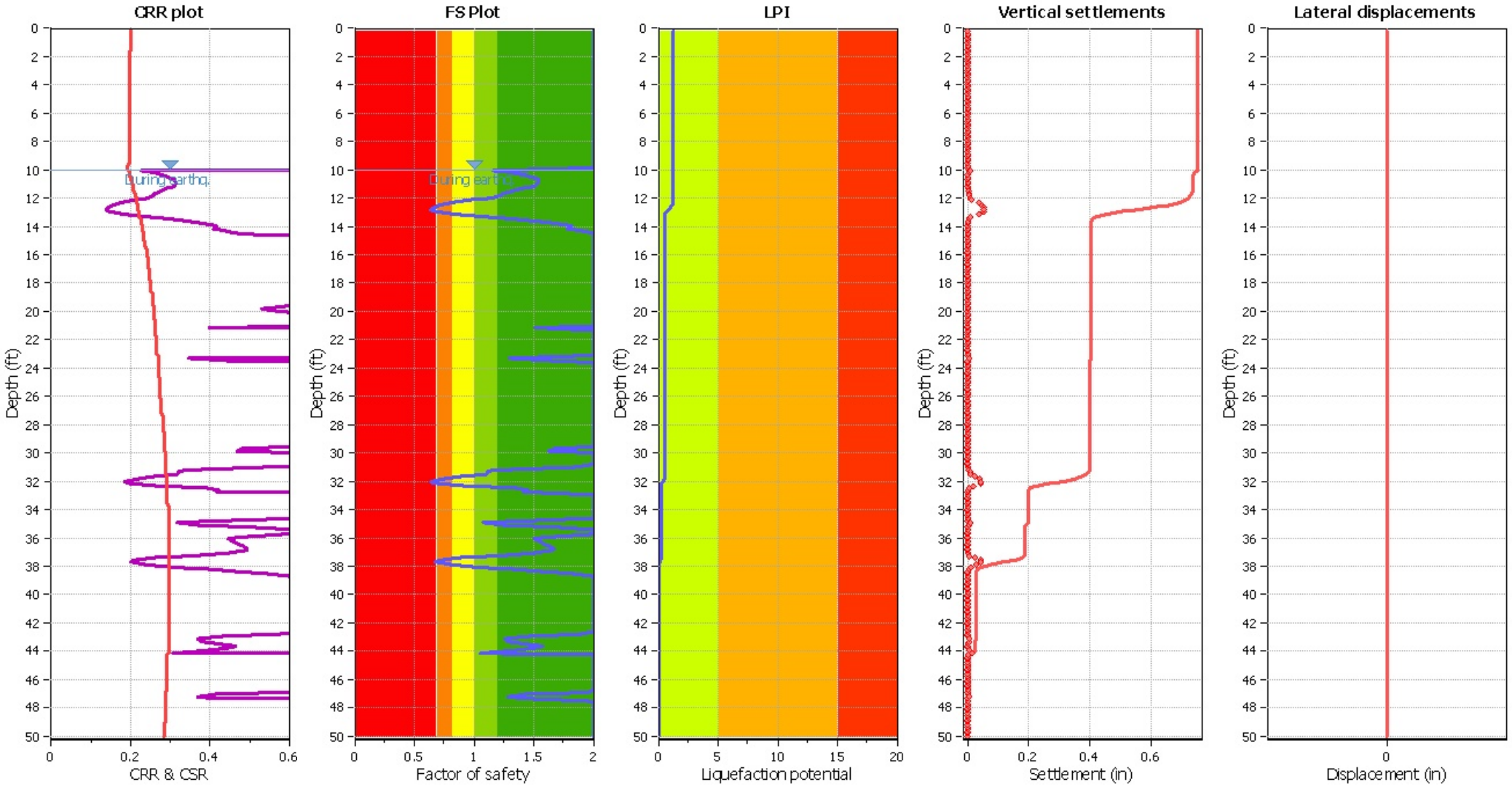

### Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | NCEER (1998) | Depth to water table (erthq.): | 10.00 ft | Fill weight: | N/A |
| Fines correction method: | NCEER (1998) | Average results interval: | 3 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.20 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.50 | Use fill: | No | Limit depth applied: | No |
| Depth to water table (insitu): | 10.00 ft | Fill height: | N/A | Limit depth: | N/A |

**SBT legend**

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

# Liquefaction analysis overall plot




## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | NCEER (1998) | Depth to water table (erthq.): | 10.00 ft | Fill weight: | N/A |
| Fines correction method: | NCEER (1998) | Average results interval: | 3 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 6.20 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.50 | Use fill: | No | Limit depth applied: | No |
| Depth to water table (insitu): | 10.00 ft | Fill height: | N/A | Limit depth: | N/A |

**F.S. color scheme**

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

**LPI color scheme**

- Very high risk
- High risk
- Low risk



ENGEO
Expect Excellence

# APPENDIX G



# HAT RANCH PROPERTY
MANTECA, CALIFORNIA

## PHASE I ENVIRONMENTAL SITE ASSESSMENT

SUBMITTED TO
Mr. Kyle Masters
Director-Land Entitlements
Richland Communities, Inc.
3000 Lava Ridge Court, Suite 115
Roseville, CA 95661

PREPARED BY
ENGEO Incorporated

December 2, 2020

PROJECT NO.
10175.000.001

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ENGEO
Expect Excellence

Project No.
**10175.000.001**

December 2, 2020

Mr. Kyle Masters
Director-Land Entitlements
Richland Communities, Inc.
3000 Lava Ridge Court, Suite 115
Roseville, CA 95661

Subject: Hat Ranch Property
Manteca, California

**PHASE I ENVIRONMENTAL SITE ASSESSMENT**

Dear Mr. Masters:

ENGEO is pleased to present our phase I environmental site assessment of the subject property (Property), located in Manteca, California. The attached report includes a description of the site assessment activities, along with ENGEO's findings, opinions, and conclusions regarding the Property.

ENGEO has the specific qualifications based on education, training, and experience to assess the nature, history, and setting of the Property, and has developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312 and the American Standard Testing Method (ASTM) Practice E1527-13. We declare that, to the best of our professional knowledge and belief, the responsible charge for this study meets the definition of Environmental Professional as defined in Section 312.10 of 40 CFR Part 312 and ASTM E1527-13.

We are pleased to be of service to you on this project. If you have any questions concerning the contents of our report, please contact us.

Sincerely,

ENGEO Incorporated

Cody Johnson
cj/sm/jf

Shawn Munger, CHG

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**APPENDIX E** – Environmental Data Resources, Inc., Sanborn Map Report

**APPENDIX F** – Environmental Data Resources, Inc., City Directory

**APPENDIX G** – Environmental Site Assessment Questionnaire

**APPENDIX H** – Qualifications of Environmental Professional

# EXECUTIVE SUMMARY

ENGEO conducted a phase I environmental site assessment for the property located at 9701 Sedan Avenue in Manteca, California (Property). The Property is approximately 175 acres in area and is identified by Assessor's Parcel Numbers (APN) 226-12-010, 226-12-011 and 226-014-004.

The Property consists of vineyard fields, an approximately 28,000-square-foot residence with pool, tennis court and a paved driveway. There are two shop buildings located in the southeast corner of the Property. Review of historical records indicates that the Property has remained occupied by a residence and agricultural land since at least 1937.

This assessment included a review of local, state, tribal, and federal environmental record sources, standard historical sources, aerial photographs, fire insurance maps, and physical setting sources. A reconnaissance of the Property was completed to review site use and current conditions to check for the storage, use, production, or disposal of hazardous or potentially hazardous materials and to conduct written/oral interviews with persons knowledgeable about current and past site use.

The site reconnaissance and records review did not find documentation or physical evidence of soil, soil gas, or groundwater impairments associated with the use or past use of the Property. A review of regulatory databases maintained by county, state, tribal, and federal agencies found no documentation of hazardous materials violations or discharge on the Property and did not identify contaminated facilities within the appropriate American Society for Testing and Materials (ASTM) search distances that would reasonably be expected to impact the Property.

Based on the findings of this assessment, no Recognized Environmental Conditions (RECs), no historical RECs, and no controlled RECs were identified for the Property.

Based on the review of regulatory databases and site reconnaissance, we present information on features of potential environmental concern that were either contained in the databases or observed on the Property. These features were not considered to be RECs. We briefly discuss each feature below.

- Due to past use of the Property as agricultural land since at least 1937, it is conceivable that residual pesticides and related metals may exist in site soils above residential screening levels.

ENGEO has performed a phase I environmental site assessment in general conformance with the scope and limitations of ASTM E1527-13 and the standards and practices of the All Appropriate Inquiry – Final Rule (40 Code of Federal Regulations Part 312).

It is our opinion that the findings of this study are based on a sufficient level of information obtained during our contracted scope of services to render a conclusion as to whether additional appropriate investigation is required to identify the presence or likely presence of a REC.

The data gaps identified during this process could affect the conclusions as to the presence or lack of presence of RECs at the Property.

This assessment has revealed no evidence of RECs in connection with the Property. ENGEO recommends the following.

- Proper abandonment and demolition of existing groundwater wells and septic systems on the Property.

# 1.0 INTRODUCTION

## 1.1 PURPOSE OF PHASE I ENVIRONMENTAL SITE ASSESSMENT

This assessment was performed at the request of Richmond Communities, Inc. for the purpose of environmental due diligence during property acquisition. The objective of this phase I environmental site assessment is to identify Recognized Environmental Conditions (RECs) associated with the Property. As defined in the ASTM Standard Practice E1527-13, an REC is "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment."

## 1.2 DETAILED SCOPE OF SERVICES

The scope of services performed included the following:

- A review of publicly available and practicably reviewable standard local, state, tribal, and federal environmental record sources.
- A review of publicly available and practicably reviewable standard historical sources, aerial photographs, fire insurance maps and physical setting sources.
- A reconnaissance of the Property to review site use and current conditions. The reconnaissance was conducted to check for the storage, use, production or disposal of hazardous or potentially hazardous materials.
- Written/oral interviews with owners/occupants and public sector officials.
- Preparation of this report with our findings, opinions, and conclusions.

## 1.3 SITE LOCATION AND DESCRIPTION

ENGEO conducted a phase I environmental site assessment for the Property located 9701 Sedan Avenue in Manteca, California (Figures 1 and 2). The approximately 175-acre Property is identified as APNs 226-12-010, 226-12-011 and 226-14-004 (Figure 3) and is currently occupied by multiple shops, a residence and vineyards.

## 1.4 CURRENT USE OF PROPERTY AND ADJOINING PROPERTIES

The Property is currently occupied by an approximately 28,000-square-foot house, two shop buildings and vineyards. The Property is serviced by municipal water and gas, with the exception of the larger shop that is serviced by an above-ground propane tank. Septic systems are permitted for the structures at the Property.

Adjacent properties to the north and to the west of the Property are residential housing developments. Adjacent properties to the south and to the east are agricultural crop land, including orchards and row crops.

### 1.5 SITE AND VICINITY CHARACTERISTICS

According to published topographic maps, the Property ranges in elevation from approximately 42 feet above mean sea level (msl) in the west to approximately 50 feet above msl to the east. Review of the Wagner Geologic Map found that the Property is underlain by Qs and is described as Holocene aged dune sands.

Geocheck – Physical Setting Source Summary of the Environmental Data Resources, Inc. (EDR) report (Appendix A) indicated 3 Federal United States Geological Survey (USGS) and 20 State wells located within 1 mile of the Property. Well Number USGS40000185406 is mapped approximately 0.6 mile southeast of the Property and one groundwater level measurement is reported for this well. Groundwater in the vicinity of Property was observed between 3 feet and 22 feet below the ground surface.

We reviewed the Department of Water Resources On-line Water Data Library for depth to water in the vicinity of the Property. The website identified 13 wells within 1 mile of the Property. ENGEO conducted groundwater level studies for the Property in 2014 and 2016. The following information was obtained regarding local groundwater conditions.

**TABLE 1.5-1: Local Groundwater Conditions**

| PROXIMITY TO PROPERTY | REPORTED DEPTH TO GROUNDWATER | REPORTED GROUNDWATER FLOW DIRECTION |
|---|---|---|
| Property | 2 to 12 feet | Not reported |
| 2700 feet east | 3 to 7 feet | Not reported |
| 3100 feet northwest | 5 to 8 feet | Not reported |
| 3100 feet south | 10 feet | Not reported |

The site-specific depth to groundwater and direction of groundwater flow was not determined as part of this assessment. Fluctuations in groundwater levels may occur seasonally and over a period of years due to variations in precipitation, temperature, irrigation and other factors.

We reviewed the Department of Conservation, Geologic Energy Management (CalGEM website and map database to determine if any historic oil and/or gas wells were located within the Property. Two wells were mapped within 1 mile of the Property.

## 2.0 PREVIOUS ENVIRONMENTAL REPORTS

ENGEO; Preliminary Agrichemical Assessment, Hat Ranch, Manteca, California, Project No. 10175.000.000, February 7, 2014.

ENGEO conducted an agrichemical assessment for the Property in January and February 2014. 100 soil samples were collected from 0 to 6 inches below the ground surface and composited into 25 4-point composite samples. The composite samples were analyzed for organochlorine pesticides (OCPs), and a discrete sample from each composite was analyzed for arsenic. OCPs were detected in 16 of the composite samples, below applicable screening levels. Arsenic results were non-detect with respect to laboratory reporting limits. ENGEO concluded that the Property does not appear to be adversely impacted from past agricultural activities.

# 3.0 RECORDS REVIEW

## 3.1 PROPERTY RECORDS

### 3.1.1 Title Report/Ownership

The Title Report lists recorded land title detail, ownership fees, leases, land contracts, easements, liens, deficiencies, and other encumbrances attached to or recorded against a subject property. Laws and regulations pertaining to land trusts vary from state to state and the detail of information presented in a Title Report can vary greatly by jurisdiction. As a result, ENGEO utilizes a Title Report, when provided to us, as a supplement to other historical record sources.

A Preliminary Title Report for the Property, prepared by First American Title Company and dated August 21, 2019, was provided for our review. The Property title is vested in RIVERSIDE LHC, LTD. No references to environmental liens, deed restrictions or other potential environmental issues were noted. This report is included in Appendix B.

## 3.2 HISTORICAL RECORD SOURCES

The purpose of the historical record review is to develop a history of the previous uses or occupancies of the Property and surrounding area in order to identify those uses or occupancies that are likely to have led to RECs on the Property.

### 3.2.1 Historical Topographic Maps/Aerial Photographs/Sanborn Maps

Historical USGS topographic maps, aerial photographs, were reviewed to determine if discernible changes pertaining to the Property had been recorded. Sanborn Fire insurance maps were not available for the Property. EDR provided the following maps and photographs, presented in Appendices C, D, and E.

**TABLE 3.2.1-1: Historical Review Summary**

| HISTORIC MAP/PHOTOGRAPH | YEARS |
|---|---|
| Topographic Maps | 1914, 1915, 1952, 1968, 1969, 1976, 1980, 1987, 1991, 1994, 2012 |
| Aerial Photographs | 1937, 1950, 1957, 1963, 1968, 1975, 1982, 1993, 2006, 2009, 2012, 2016 |
| Sanborn Maps | N/A |

In 1914, the Property is depicted as flat vacant land, there are multiple farm houses and roads in the vicinity. By 1937, a house had been constructed in the southeast corner of the Property and two irrigation channels intersect the Property in the northwest and northeast. The Property is being used for row crops and orchards. Surrounding properties are agricultural land. The irrigation channels were backfilled between 1963 and 1968. The Property and surround properties remain similar through the 1993 photograph. In 2006, the house in the southeast corner had been demolished and replaced with the existing shop buildings. Previous orchards and row crops have been replaced with the current vineyards. Also, the existing home is now visible and a residential development to the north. By 2016, the residential developments that border the northern and western perimeters are under construction.

### 3.2.2 City Directory

City Directories, published since the 18th century for major towns and cities, list the name of the resident or business associated with each address. A city directory search conducted by EDR is located in Appendix F.

**TABLE 3.2.2-1: City Directory**

| YEAR | LISTINGS |
|---|---|
| 1977 | Gavino Manuel |
| 1981 | Gavino Manuel |
| 1985 | Gavino Manuel |
| 1992 | Gavino, G |
| 1995 | Occupant Unknown |

## 3.3 ENVIRONMENTAL RECORD SOURCES

EDR performed a search of federal, tribal, state, and local databases regarding the Property and nearby properties. Details regarding the databases searched by EDR are provided in Appendix A. A list of the facilities documented by EDR within the approximate minimum search distance of the Property is provided below.

### 3.3.1 Environmental Records

#### 3.3.1.1 Subject Property

The Property is not listed on Environmental Record source databases.

#### 3.3.1.2 Other Properties

The following databases include facilities listed within the appropriate ASTM search distances of the Property on Environmental Records sources.

**TABLE 3.3.1.2-1**

| FACILITY | STREET | DATABASES |
|---|---|---|
| PLANT SCIENCES INC | 9715 SEDAN AVE | RCRA NONGEN / NLR |
| JIM COIT | 21092 PILLSBURY RD | UST |
| COIT, JIM | 21092 PILLSBURY RD | SWEEPS UST,CA FID UST |
| JONES/NEGLEY FARM | 21092 PILLSBURY | HIST UST |
| LEWIS SELAGI FARMS | 9011 SEDAN RD | UST |
| LEWIS SELAGI FARMS | 9011 SEDAN RD | SWEEPS UST,HIST UST,CA FID UST |
| FARM | 9011 SEDAN AVE | HIST UST |
| SHERWOOD VAN VUREN | 8887 SEDAN | HIST UST |
| EVANS ESTATES | SOUTH MAIN STREET | CPS-SLIC,CERS |
| SCHMIEDT SOIL SERVICE, INC | 20696 SOUTH MANTECA ROAD | ENVIROSTOR |
| TRI-AG SERVICE, INC. | 20696 S. MANTECA ROAD | HIST UST,NOTIFY 65 |
| KIM MARTIN | 2112 S MAIN ST | HWTS,CPS-SLIC,HAZNET,NOTIFY 65,CERS |
| WOODWARD ANNEX SITE | WOODWARD AVENUE/SPRECKELS ROAD | ENVIROSTOR,SCH,CERS |

Based on the distances to the identified database sites, regional topographic gradient, and the EDR findings, it is unlikely that the above-stated database sites pose an environmental risk to the Property. Properties that are on the "Orphan Summary" list appear to be located beyond the ASTM recommended radius search criteria.

## 3.4 REGULATORY AGENCY FILES AND RECORDS

The following agencies were contacted pertaining to possible past development and/or activity at the Property.

**TABLE 3.4-1: Regulatory Agency Records**

| NAME OF AGENCY | RECORDS REVIEWED |
|---|---|
| City of Manteca Clerk | A response to our records request was not received by the time of publication of this report. |
| Lathrop-Manteca Fire Department | The Lathrop-Manteca Fire Department responded to our records request and indicated that they have no records on file for the Property. |
| San Joaquin County Environmental Health Department | The San Joaquin County Environmental Health Department provided us with multiple well permits and septic permits for the Property. |
| San Joaquin County Assessor's Office | We reviewed the online GIS portal and confirmed the APNs associated with the Property. |
| California State Water Resources Control Board | The California State Water Resources Control Board GeoTracker website was reviewed. The Property is not listed, and one case is located within a mile of the Property that would not be expected to have impacted the Property. |
| Department of Toxic Substances Control | The Department of Toxic Substances Control EnviroStor website was reviewed. The Property is not listed. Two sites were located within a mile of the Property, but would not be expected to have impacted the Property. |

## 3.5 INDOOR AIR QUALITY

An evaluation of indoor air quality, mold, or radon was not included as part of the contracted scope of services. The California Department of Public Health has conducted studies of radon risks throughout the state, sorted by zip code. Results of the studies indicate that five tests were conducted within the Property zip code, with one test exceeding the current EPA action level of 4picocuries per liter {pCi/L}[1]).

In accordance with ASTM E2600-15 (Tier 1) (*Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions*); there are no potential petroleum hydrocarbon sources for vapor intrusion within 1/10 mile of the Property or volatile organic compound (VOCs) sources within 1/3 mile of the Property.

[1] California Department of Public Health – Radon Program– (https://www.cdph.ca.gov/Programs/CEH/DRSEM/CDPH%20Document%20Library/EMB/Radon/Radon%20Test%20Results.pdf).

# 4.0 SITE RECONNAISSANCE

## 4.1 METHODOLOGY

ENGEO conducted a reconnaissance of the Property on November 11, 2020. The reconnaissance was performed by Cody Johnson, a Staff Geologist of ENGEO. The Property was viewed for hazardous materials storage, superficial staining or discoloration, debris, stressed vegetation, or other conditions that may be indicative of potential sources of soil or groundwater contamination. The Property was also checked for evidence of fill/ventilation pipes, ground subsidence, or other evidence of existing or preexisting underground storage tanks. Photographs taken during the site reconnaissance are presented in Figure 4.

## 4.2 SITE OBSERVATIONS

The following table summarizes our observations during the reconnaissance.

**TABLE 4.2-1: Site Observations**

| FEATURE TYPE | OBSERVATIONS |
|---|---|
| Structures | Three structures were observed during the site reconnaissance that included a residence and two shop buildings. |
| Hazardous Substances and Petroleum Products in Connection with Identified Uses | No hazardous substances or petroleum products were observed within the Property during the site reconnaissance. |
| Storage Tanks (underground and above-ground) | Multiple above-ground storage tanks for water were observed during the site reconnaissance. No evidence of existing underground storage tanks was observed. |
| Odors | No odors indicative of hazardous materials or petroleum material impacts were noted at the time of the reconnaissance. |
| Pools of Potentially Hazardous Liquid | No pools of potentially hazardous liquid were observed within the Property at the time of our reconnaissance. |
| Drums | Five empty drums of the herbicide *Cornerstone Plus* were observed on the Property at the time of the reconnaissance. |
| Polychlorinated Biphenyls (PCBs) Containing Equipment | No potential PCB-containing equipment, including transformers, was observed within the Property during our site reconnaissance. |
| Hazardous Substances and Petroleum Product Containers | A pile of empty pesticide containers of *Total TNV* was observed at the smaller shop building at the time of our reconnaissance. |
| Pits, Ponds, and Lagoons | No pits, ponds or lagoons were observed within the Property at the time of our reconnaissance. |
| Stained Soil/Pavement | No stained soil or pavement was observed within the Property at the time of our reconnaissance. |
| Stressed Vegetation | No signs of stressed vegetation were observed on the Property at the time of our reconnaissance. |
| Solid Waste/Debris | No disposal of solid waste was observed at the subject property. |
| Stockpiles/Fill Material | A soil stockpile was observed in the northwest corner of the Property during the reconnaissance. |
| Wastewater | No wastewater conveyance systems were observed at the Property during the reconnaissance. |

| FEATURE TYPE | OBSERVATIONS |
|---|---|
| Wells | No wells were found within the Property during our site reconnaissance, though it is feasible one or more exist to supply the irrigation system and buildings. Multiple domestic wells are permitted for 9701 Sedan Avenue in southeast corner of the Property. |
| Septic Systems | No septic systems were found within the Property during our site reconnaissance, but two septic tanks were permitted for both the residence and larger shop building.. |

## 5.0 INTERVIEWS

Kyle Masters completed an environmental site questionnaire pertaining to user-related applicable environmental information regarding the Property. In the questionnaire, Mr. Masters did not identify potentially environmentally related issues with the Property. The questionnaire is presented in its entirety in Appendix G. A summary is provided below.

Mr. Masters is unaware of commonly known, reasonably ascertainable, or specialized knowledge indicative of releases or threatened releases that is material to the potential presence of RECs.

Mr. Masters did not indicate whether the purchase price of the Property is reflective of fair market value of the Property, or not.

## 6.0 FINDINGS AND CONCLUSIONS

This assessment included a review of local, state, tribal, and federal environmental record sources, standard historical sources, aerial photographs, fire insurance maps and physical setting sources. A reconnaissance of the Property was completed to review site use and current conditions to check for the storage, use, production, or disposal of hazardous or potentially hazardous materials and to conduct written/oral interviews with persons knowledgeable about current and past site use.

The site reconnaissance and records review did not find documentation or physical evidence of soil, soil gas, or groundwater impairments associated with the use or past use of the Property. A review of regulatory databases maintained by county, state, tribal, and federal agencies found no documentation of hazardous materials violations or discharge on the Property and did not identify contaminated facilities within the appropriate American Society for Testing and Materials (ASTM) search distances that would reasonably be expected to impact the Property.

Based on the findings of this assessment, no RECs, no historical RECs, and no controlled RECs were identified for the Property.

Based on the review of regulatory databases and site reconnaissance, we present information on features of potential environmental concern that were either contained in the databases or observed on the Property. These features were not considered to be RECs. We briefly discuss each feature below.

- Due to past use of the Property as agricultural land since at least 1937, it is conceivable that residual agrichemicals may exist in soils at levels above residential screening levels.

ENGEO has performed a phase I environmental site assessment in general conformance with the scope and limitations of ASTM E1527-13 and the standards and practices of the All Appropriate Inquiry – Final Rule (40 Code of Federal Regulations Part 312).

It is our opinion that the findings of this study are based on a sufficient level of information obtained during our contracted scope of services to render a conclusion as to whether additional appropriate investigation is required to identify the presence or likely presence of a REC.

The data gaps identified during this process could affect the conclusions as to the presence or lack of presence of RECs at the Property.

This assessment has revealed no evidence of RECs in connection with the Property. ENGEO recommends the following:

- Proper abandonment and demolition of existing groundwater wells and septic systems on the Property.

# 7.0 LIMITATIONS

## 7.1 OPINIONS AND DATA GAPS

It is our opinion that the findings of this study are based on a sufficient level of information obtained during our contracted scope of services to render a conclusion as to whether additional appropriate investigation is required to identify the presence or likely presence of a REC. The data gaps identified during this process do not affect the conclusions as to the presence or lack of presence of RECs at the Property.

- A key-site manager questionnaire was not returned for our review.
- A response to our public records request to the City of Manteca Clerk was not received by the by the time of publication of this report.
- Interiors of the structures were not available to view during our site reconnaissance.

## 7.2 LIMITATIONS AND EXCEPTIONS OF ASSESSMENT

The professional staff at ENGEO strives to perform its services in a proper and professional manner with reasonable care and competence but is not infallible. The recommendations and conclusions presented in this report were based on the findings of our study, which were developed solely from the contracted services. The findings of the report are based in part on contracted database research, out-of-house reports, and personal communications. The opinions formed by ENGEO are based on the assumed accuracy of the relied upon data in conjunction with our relevant professional experience related to such data interpretation. ENGEO assumes no liability for the validity of the materials relied upon in the preparation of this report.

This document must not be subject to unauthorized reuse; that is, reuse without written authorization of ENGEO. Such authorization is essential because it requires ENGEO to evaluate the document's applicability given new circumstances, not the least of which is passage of time. The findings from a phase I environmental site assessment are valid for one year after completion of the report. Updates of portions of the assessment may be necessary after a period of 180 days after completion.

This phase I environmental site assessment is not intended to represent a complete soil, soil gas, or groundwater characterization, nor define the depth or extent of soil, soil gas, or groundwater contamination. It is intended to provide an evaluation of potential environmental concerns associated with the use of the Property. A more extensive assessment that would include a subsurface exploration with laboratory testing of soil, soil gas, and groundwater samples could provide more definitive information concerning site-specific conditions. If additional assessment activities are considered for the Property and if other entities are retained to provide such services, ENGEO cannot be held responsible for any and all claims arising from or resulting from the performance of such services by other persons or entities. ENGEO can also not be held responsible from any and all claims arising or resulting from clarifications, adjustments, modifications, discrepancies or other changes necessary to reflect changed field or other conditions.

## 7.3 SPECIAL TERMS AND CONDITIONS

ENGEO has prepared this report for the exclusive use of our client, Richland Communities, Inc. It is recognized and agreed that ENGEO has assumed responsibility only for undertaking the study for the Client. The responsibility for disclosures or reports to a third party and for remedial or mitigative action shall be solely that of the Client.

Laboratory testing of soil, soil gas, or groundwater samples was not within the scope of the contracted services. The assessment did not include an asbestos survey, an evaluation of lead-based paint, an inspection of light ballasts for polychlorinated biphenyls (PCBs), or a mold survey. A radon evaluation was not performed.

This report is based upon field and other conditions discovered at the time of preparation of ENGEO's assessment. Visual observations referenced in this report are intended only to represent conditions at the time of the reconnaissance. ENGEO would not be aware of site contamination, such as dumping and/or accidental spillage, that occurred subsequent to the reconnaissance conducted by ENGEO personnel.

# SELECTED REFERENCES

Google Maps (http://maps.google.com)

California Department of Water Resources (http://www.water.ca.gov/waterdatalibrary/)

California Department of Public Health – Radon Program– (https://www.cdph.ca.gov/Programs/CEH/DRSEM/CDPH%20Document%20Library/EMB/Radon/Radon%20Test%20Results.pdf).

California Geologic Energy Management Division (CalGEM) (https://www.conservation.ca.gov/calgem)

CalGEM Well Finder (https://maps.conservation.ca.gov/doggr/wellfinder/#openModal/-118.94276/37.12009/6)

ENGEO; Preliminary Agrichemical Assessment, Hat Ranch, Manteca, California, Project No. 10175.000.000, February 7, 2014.

ENGEO; Groundwater Level Study, Hat Ranch, Manteca, California, Project No. 10175.000.000, September 10, 2014.

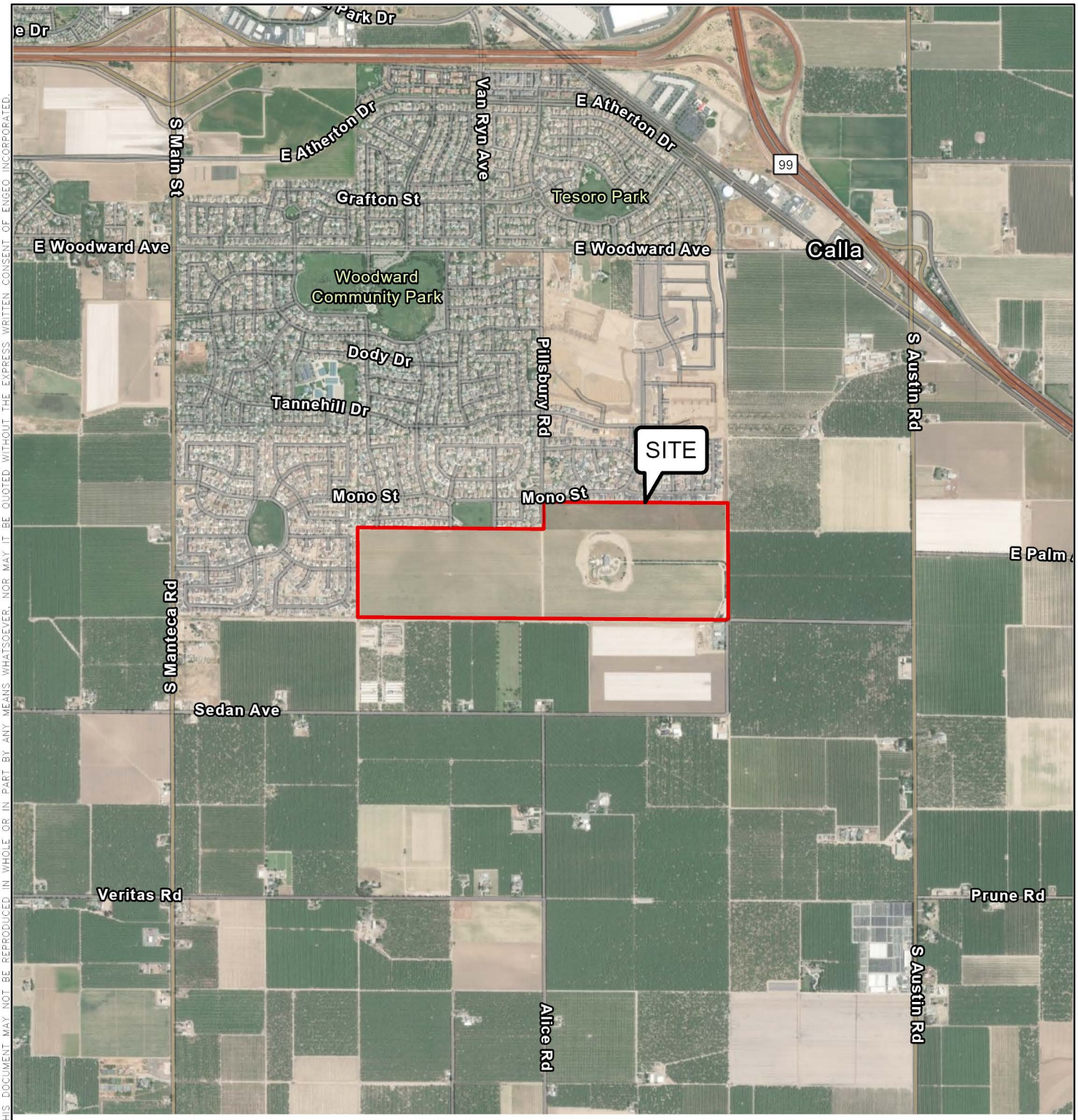
ENGEO; Groundwater Level Study Update, Hat Ranch, Manteca, California, Project No. 10175.000.000, December 2, 2016.

Wagner D.L., Bortugno E.J., and. McJunkin R.D, Compilation; 1991, Geologic Map of the San Francisco-San Jose Quadrangle, California 1:250,000.



## FIGURES


**FIGURE 1: Vicinity Map**
**FIGURE 2: Site Plan**
**FIGURE 3: Assessor's Parcel Map**
**FIGURE 4: Site Photographs**




N

0 1,000 2,000

FEET

BASEMAP SOURCE: ESRI MAPPING SERVICE 2019

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# VICINITY MAP

HAT RANCH

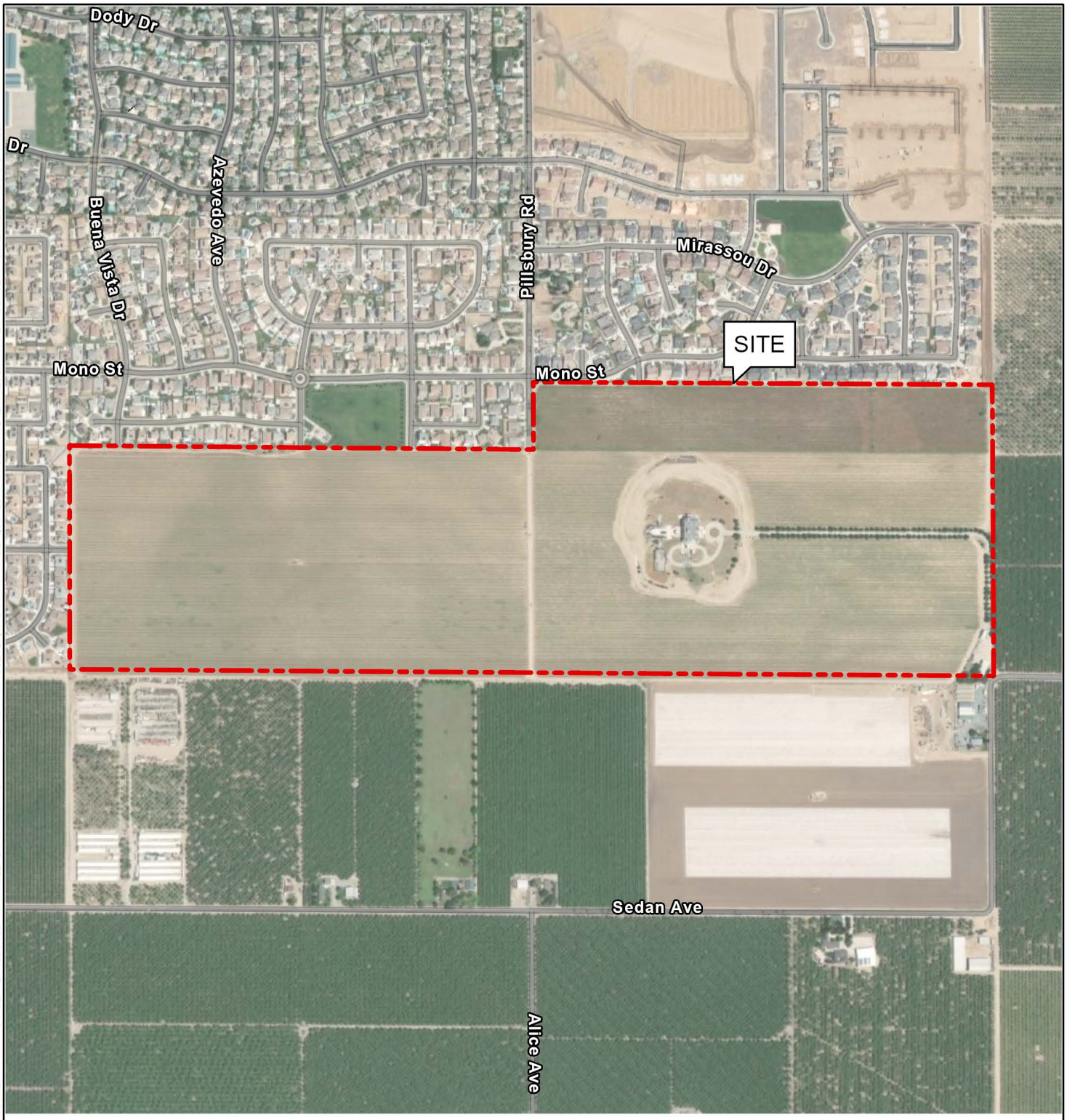
MANTECA, CALIFORNIA

| | |
|---|---|
| PROJECT NO. : | 10175.000.001 |
| SCALE: | AS SHOWN |
| DRAWN BY: JV | CHECKED BY: SPM |

FIGURE NO. 1

PATH: G:\DRAFTING\DRAFTING2_DWG_10000 TO 12999\10175\000\ESA\10175000001.APRX
LAYOUT: VICINITY USER: JVERGARA

ORIGINAL FIGURE PRINTED IN COLOR




BASEMAP SOURCE: ESRI MAPPING SERVICE 2019

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# SITE PLAN

HAT RANCH

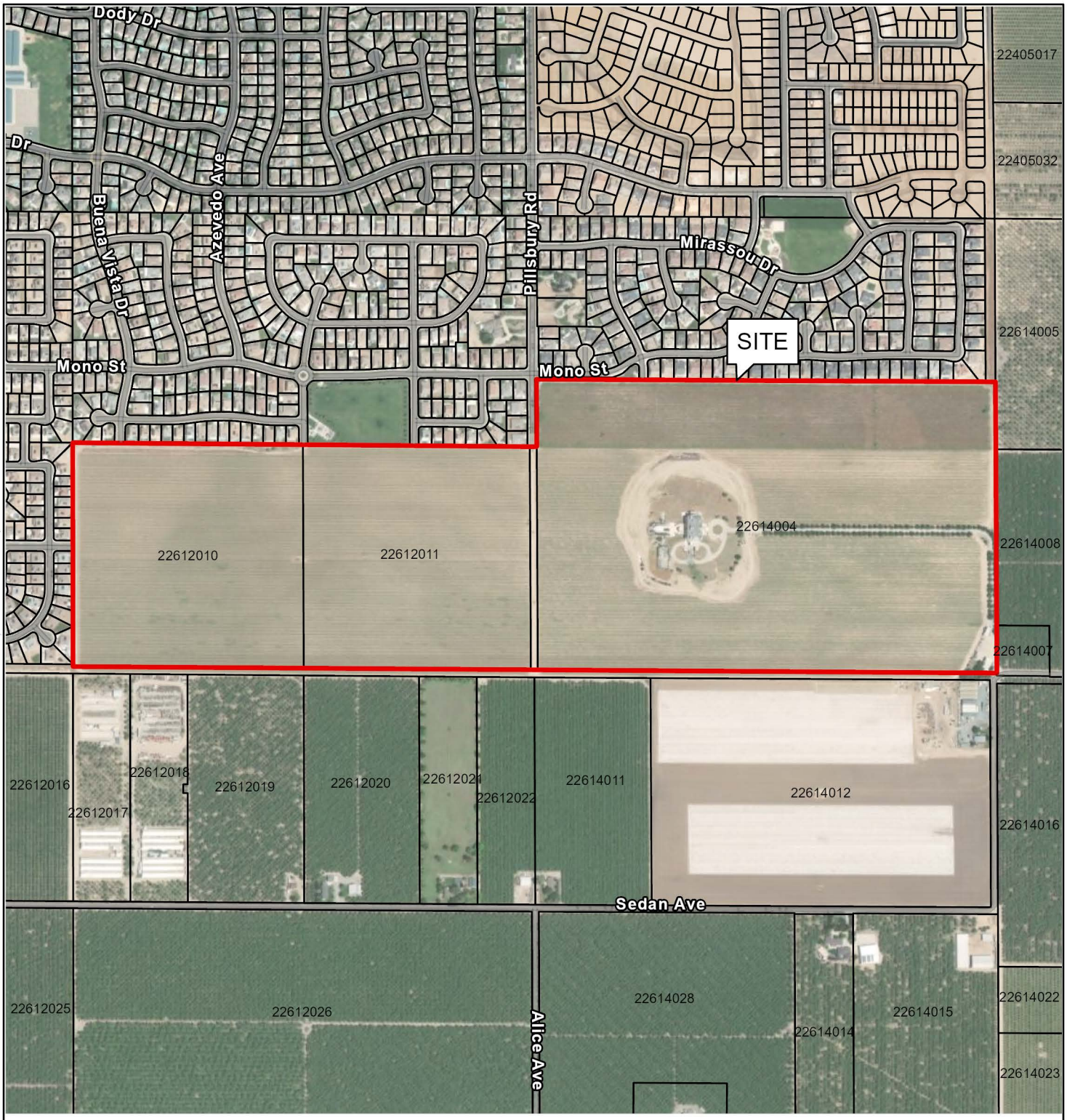
MANTECA, CALIFORNIA

| | |
|---|---|
| PROJECT NO. : | 10175.000.001 |
| SCALE: | AS SHOWN |
| DRAWN BY: JV | CHECKED BY: SPM |

FIGURE NO. 2

PATH: G:\DRAFTING\DRAFTING2_DWG_10000 TO 12999\10175\000\ESA\10175000001.APRX
LAYOUT: SITE PLAN USER: JVERGARA

ORIGINAL FIGURE PRINTED IN COLOR




N

0 400 800

FEET

BASEMAP SOURCE: ESRI MAPPING SERVICE 2019 AND SAN JOAQUIN'S ASSESSOR'S OFFICE

ENGEO Expect Excellence

# ASSESSOR'S PARCEL MAP

HAT RANCH

MANTECA, CALIFORNIA

| | | |
|---|---|---|
| PROJECT NO. : 10175.000.001 | | FIGURE NO. 3 |
| SCALE: AS SHOWN | | |
| DRAWN BY: JV | CHECKED BY: SPM | |

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PATH: G:\DRAFTING\DRAFTING2_DWG_10000 TO 12999\10175\000\ESA\10175000001.APRX
LAYOUT: PARCEL USER: JVERGARA

ORIGINAL FIGURE PRINTED IN COLOR



NORTHERN PROPERTY BOUNDARY, FACING EAST



EASTERN PROPERTY BOUNDARY, FACING NORTH



NORTHEAST CORNER OF PROPERTY, FACING WEST



SOUTHERN PROPERTY BOUNDARY, FACING EAST



WESTERN PROPERTY BOUNDARY, FACING SOUTH



LARGER SHOP BUILDING LOCATED AT THE SOUTHEAST CORNER OF PROPERTY.

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SITE PHOTOGRAPHS
HAT RANCH
MANTECA, CALIFORNIA

| | | |
|---|---|---|
| PROJECT NUMBER: **10175.000.001** | | FIGURE NO. 4A |
| SCALE: **NO SCALE** | | |
| DRAWN BY: **JV** | CHECKED BY: **SPM** | |

ORIGINAL FIGURE PRINTED IN COLOR




PROPANE TANK AT LARGER SHOP BUILDING




SMALLER SHOP BUILDING AND ABOVE GROUND WATER TANKS.




IRRIGATION PUMP AND EMPTY HERBICIDE CONTAINERS LOCATED AT SMALLER SHOP BUILDING




HERBICIDE DRUMS LOCATED AT SMALLER SHOP BUILDING

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SITE PHOTOGRAPHS
HAT RANCH
MANTECA, CALIFORNIA

| | |
|---|---|
| PROJECT NUMBER: **10175.000.001** | FIGURE NO. 4B |
| SCALE: **NO SCALE** | |
| DRAWN BY: **JV** | CHECKED BY: **SPM** |

ORIGINAL FIGURE PRINTED IN COLOR




RESIDENCE AND DRIVEWAY, FACING WEST.




PROPANE TANK LOCATED IN A GARAGE AT RESIDENCE




STOCKPILED SOIL IN NORTHWEST CORNER OF PROPERTY




IRRIGAITON PUMP AND ABOVE GROUND WATER TANKS

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SITE PHOTOGRAPHS
HAT RANCH
MANTECA, CALIFORNIA

| | |
|---|---|
| PROJECT NUMBER: **10175.000.001** | FIGURE NO. 4C |
| SCALE: **NO SCALE** | |
| DRAWN BY: **JV** | CHECKED BY: **SPM** |

ORIGINAL FIGURE PRINTED IN COLOR



# APPENDIX A

## ENVIRONMENTAL DATA RESOURCES, INC.

## Radius Map Report

**Hat Ranch**
9701 Sedan Avenue
Manteca, CA  95337

Inquiry Number: 6262441.2s
November 11, 2020

# The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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| Government Records Searched/Data Currency Tracking | GR-1 |

**GEOCHECK ADDENDUM**

| | |
|---|---|
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***Thank you for your business.***
Please contact EDR at 1-800-352-0050
with any questions or comments.


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# EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

## TARGET PROPERTY INFORMATION

### ADDRESS

9701 SEDAN AVENUE
MANTECA, CA 95337

### COORDINATES

| | |
|---|---|
| Latitude (North): | 37.7645180 - 37° 45' 52.26'' |
| Longitude (West): | 121.1949040 - 121° 11' 41.65'' |
| Universal Tranverse Mercator: | Zone 10 |
| UTM X (Meters): | 658998.6 |
| UTM Y (Meters): | 4181017.5 |
| Elevation: | 46 ft. above sea level |

## USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

| | |
|---|---|
| Target Property Map: | 5640398 MANTECA, CA |
| Version Date: | 2012 |
| South Map: | 5640090 RIPON, CA |
| Version Date: | 2012 |

## AERIAL PHOTOGRAPHY IN THIS REPORT

| | |
|---|---|
| Portions of Photo from: | 20140628 |
| Source: | USDA |

## MAPPED SITES SUMMARY

Target Property Address:
9701 SEDAN AVENUE
MANTECA, CA 95337

Click on Map ID to see full detail.

| MAP ID | SITE NAME | ADDRESS | DATABASE ACRONYMS | RELATIVE ELEVATION | DIST (ft. & mi.) DIRECTION |
|---|---|---|---|---|---|
| 1 | PLANT SCIENCES INC | 9715 SEDAN AVE | RCRA NonGen / NLR | Higher | 158, 0.030, ESE |
| A2 | JIM COIT | 21092 PILLSBURY RD | UST | Higher | 541, 0.102, NNW |
| A3 | COIT, JIM | 21092 PILLSBURY RD | SWEEPS UST, CA FID UST | Higher | 541, 0.102, NNW |
| A4 | JONES/NEGLEY FARM | 21092 PILLSBURY | HIST UST | Higher | 541, 0.102, NNW |
| B5 | LEWIS SELAGI FARMS | 9011 SEDAN RD | UST | Lower | 709, 0.134, South |
| B6 | LEWIS SELAGI FARMS | 9011 SEDAN RD | SWEEPS UST, HIST UST, CA FID UST | Lower | 709, 0.134, South |
| B7 | FARM | 9011 SEDAN AVE | HIST UST | Lower | 709, 0.134, South |
| 8 | SHERWOOD VAN VUREN | 8887 SEDAN | HIST UST | Lower | 1295, 0.245, SSW |
| 9 | EVANS ESTATES | SOUTH MAIN STREET | CPS-SLIC, CERS | Lower | 1356, 0.257, SW |
| C10 | SCHMIEDT SOIL SERVIC | 20696 SOUTH MANTECA | ENVIROSTOR | Lower | 2931, 0.555, WNW |
| C11 | TRI-AG SERVICE, INC. | 20696 S. MANTECA ROA | HIST UST, Notify 65 | Lower | 2931, 0.555, WNW |
| 12 | KIM MARTIN | 2112 S MAIN ST | CPS-SLIC, HAZNET, Notify 65, CERS, HWTS | Lower | 3506, 0.664, WNW |
| 13 | WOODWARD ANNEX SITE | WOODWARD AVENUE/SPRE | ENVIROSTOR, SCH, CERS | Lower | 3707, 0.702, NNW |

# EXECUTIVE SUMMARY

## TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

## DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

## STANDARD ENVIRONMENTAL RECORDS

### *Federal NPL site list*

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

### *Federal Delisted NPL site list*

Delisted NPL ---------- National Priority List Deletions

### *Federal CERCLIS list*

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

### *Federal CERCLIS NFRAP site list*

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

### *Federal RCRA CORRACTS facilities list*

CORRACTS ---------- Corrective Action Report

### *Federal RCRA non-CORRACTS TSD facilities list*

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

### *Federal RCRA generators list*

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators
RCRA-VSQG ---------- RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

### *Federal institutional controls / engineering controls registries*

LUCIS ---------- Land Use Control Information System

US ENG CONTROLS..... Engineering Controls Sites List
US INST CONTROLS..... Institutional Controls Sites List

***Federal ERNS list***

ERNS..... Emergency Response Notification System

***State- and tribal - equivalent NPL***

RESPONSE..... State Response Sites

***State and tribal landfill and/or solid waste disposal site lists***

SWF/LF..... Solid Waste Information System

***State and tribal leaking storage tank lists***

LUST..... Geotracker's Leaking Underground Fuel Tank Report
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

***State and tribal registered storage tank lists***

FEMA UST..... Underground Storage Tank Listing
AST..... Aboveground Petroleum Storage Tank Facilities
INDIAN UST..... Underground Storage Tanks on Indian Land

***State and tribal voluntary cleanup sites***

VCP..... Voluntary Cleanup Program Properties
INDIAN VCP..... Voluntary Cleanup Priority Listing

***State and tribal Brownfields sites***

BROWNFIELDS..... Considered Brownfieds Sites Listing

**ADDITIONAL ENVIRONMENTAL RECORDS**

***Local Brownfield lists***

US BROWNFIELDS..... A Listing of Brownfields Sites

***Local Lists of Landfill / Solid Waste Disposal Sites***

WMUDS/SWAT..... Waste Management Unit Database
SWRCY..... Recycler Database
HAULERS..... Registered Waste Tire Haulers Listing
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands
ODI..... Open Dump Inventory
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS..... Open Dumps on Indian Land

***Local Lists of Hazardous waste / Contaminated Sites***

US HIST CDL..... Delisted National Clandestine Laboratory Register

HIST Cal-Sites ---- Historical Calsites Database
SCH ---- School Property Evaluation Program
CDL ---- Clandestine Drug Labs
CERS HAZ WASTE ---- CERS HAZ WASTE
Toxic Pits ---- Toxic Pits Cleanup Act Sites
US CDL ---- National Clandestine Laboratory Register
PFAS ---- PFAS Contamination Site Location Listing

***Local Lists of Registered Storage Tanks***

CERS TANKS ---- California Environmental Reporting System (CERS) Tanks

***Local Land Records***

LIENS ---- Environmental Liens Listing
LIENS 2 ---- CERCLA Lien Information
DEED ---- Deed Restriction Listing

***Records of Emergency Release Reports***

HMIRS ---- Hazardous Materials Information Reporting System
CHMIRS ---- California Hazardous Material Incident Report System
LDS ---- Land Disposal Sites Listing
MCS ---- Military Cleanup Sites Listing
SPILLS 90 ---- SPILLS 90 data from FirstSearch

***Other Ascertainable Records***

FUDS ---- Formerly Used Defense Sites
DOD ---- Department of Defense Sites
SCRD DRYCLEANERS ---- State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ---- Financial Assurance Information
EPA WATCH LIST ---- EPA WATCH LIST
2020 COR ACTION ---- 2020 Corrective Action Program List
TSCA ---- Toxic Substances Control Act
TRIS ---- Toxic Chemical Release Inventory System
SSTS ---- Section 7 Tracking Systems
ROD ---- Records Of Decision
RMP ---- Risk Management Plans
RAATS ---- RCRA Administrative Action Tracking System
PRP ---- Potentially Responsible Parties
PADS ---- PCB Activity Database System
ICIS ---- Integrated Compliance Information System
FTTS ---- FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS ---- Material Licensing Tracking System
COAL ASH DOE ---- Steam-Electric Plant Operation Data
COAL ASH EPA ---- Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER ---- PCB Transformer Registration Database
RADINFO ---- Radiation Information Database
HIST FTTS ---- FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS ---- Incident and Accident Data
CONSENT ---- Superfund (CERCLA) Consent Decrees
INDIAN RESERV ---- Indian Reservations
FUSRAP ---- Formerly Utilized Sites Remedial Action Program

UMTRA ---- Uranium Mill Tailings Sites
LEAD SMELTERS ---- Lead Smelter Sites
US AIRS ---- Aerometric Information Retrieval System Facility Subsystem
US MINES ---- Mines Master Index File
ABANDONED MINES ---- Abandoned Mines
FINDS ---- Facility Index System/Facility Registry System
UXO ---- Unexploded Ordnance Sites
DOCKET HWC ---- Hazardous Waste Compliance Docket Listing
ECHO ---- Enforcement & Compliance History Information
FUELS PROGRAM ---- EPA Fuels Program Registered Listing
CA BOND EXP. PLAN ---- Bond Expenditure Plan
Cortese ---- "Cortese" Hazardous Waste & Substances Sites List
CUPA Listings ---- CUPA Resources List
DRYCLEANERS ---- Cleaner Facilities
EMI ---- Emissions Inventory Data
ENF ---- Enforcement Action Listing
Financial Assurance ---- Financial Assurance Information Listing
HAZNET ---- Facility and Manifest Data
ICE ---- ICE
HIST CORTESE ---- Hazardous Waste & Substance Site List
HWP ---- EnviroStor Permitted Facilities Listing
HWT ---- Registered Hazardous Waste Transporter Database
MINES ---- Mines Site Location Listing
MWMP ---- Medical Waste Management Program Listing
NPDES ---- NPDES Permits Listing
PEST LIC ---- Pesticide Regulation Licenses Listing
PROC ---- Certified Processors Database
UIC ---- UIC Listing
UIC GEO ---- UIC GEO (GEOTRACKER)
WASTEWATER PITS ---- Oil Wastewater Pits Listing
WDS ---- Waste Discharge System
WIP ---- Well Investigation Program Case List
MILITARY PRIV SITES ---- MILITARY PRIV SITES (GEOTRACKER)
PROJECT ---- PROJECT (GEOTRACKER)
WDR ---- Waste Discharge Requirements Listing
CIWQS ---- California Integrated Water Quality System
CERS ---- CERS
NON-CASE INFO ---- NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS ---- OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS ---- PROD WATER PONDS (GEOTRACKER)
SAMPLING POINT ---- SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ ---- Well Stimulation Project (GEOTRACKER)
HWTS ---- Hazardous Waste Tracking System
MINES MRDS ---- Mineral Resources Data System

**EDR HIGH RISK HISTORICAL RECORDS**

***EDR Exclusive Records***

EDR MGP ---- EDR Proprietary Manufactured Gas Plants
EDR Hist Auto ---- EDR Exclusive Historical Auto Stations
EDR Hist Cleaner ---- EDR Exclusive Historical Cleaners

**EDR RECOVERED GOVERNMENT ARCHIVES**

***Exclusive Recovered Govt. Archives***

RGA LF ---- Recovered Government Archive Solid Waste Facilities List

# EXECUTIVE SUMMARY

RGA LUST ---------- Recovered Government Archive Leaking Underground Storage Tank

**SURROUNDING SITES: SEARCH RESULTS**

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

**STANDARD ENVIRONMENTAL RECORDS**

***State- and tribal - equivalent CERCLIS***

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 07/27/2020 has revealed that there are 2 ENVIROSTOR sites within approximately 1 mile of the target property.

| Lower Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| SCHMIEDT SOIL SERVIC<br>Facility Id: 39070036<br>Status: Refer: Other Agency | 20696 SOUTH MANTECA | WNW 1/2 - 1 (0.555 mi.) | C10 | 18 |
| ***WOODWARD ANNEX SITE***<br>Facility Id: 39010046<br>Status: No Further Action | ***WOODWARD AVENUE/SPRE*** | ***NNW 1/2 - 1 (0.702 mi.)*** | ***13*** | ***23*** |

***State and tribal leaking storage tank lists***

CPS-SLIC: Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the CPS-SLIC list, as provided by EDR, has revealed that there is 1 CPS-SLIC site within

approximately 0.5 miles of the target property.

| Lower Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| ***EVANS ESTATES*** | ***SOUTH MAIN STREET*** | ***SW 1/4 - 1/2 (0.257 mi.)*** | ***9*** | ***17*** |

Database: CPS-SLIC, Date of Government Version: 06/08/2020
Facility Status: Completed - Case Closed
Global Id: SLT5S0443085

***State and tribal registered storage tank lists***

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, has revealed that there are 2 UST sites within approximately 0.25 miles of the target property.

| Equal/Higher Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| JIM COIT | 21092 PILLSBURY RD | NNW 0 - 1/8 (0.102 mi.) | A2 | 11 |

Database: UST SAN JOAQUIN, Date of Government Version: 06/22/2018
Facility Id: FA0005348
Tank Status: 02 - Inactive, non-billable

| Lower Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| LEWIS SELAGI FARMS | 9011 SEDAN RD | S 1/8 - 1/4 (0.134 mi.) | B5 | 13 |

Database: UST SAN JOAQUIN, Date of Government Version: 06/22/2018
Facility Id: FA0005689
Tank Status: 02 - Inactive, non-billable

**ADDITIONAL ENVIRONMENTAL RECORDS**

***Local Lists of Registered Storage Tanks***

SWEEPS UST: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there are 2 SWEEPS UST sites within approximately 0.25 miles of the target property.

| Equal/Higher Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| ***COIT, JIM*** | ***21092 PILLSBURY RD*** | ***NNW 0 - 1/8 (0.102 mi.)*** | ***A3*** | ***12*** |

Comp Number: 4002

| Lower Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| ***LEWIS SELAGI FARMS*** | ***9011 SEDAN RD*** | ***S 1/8 - 1/4 (0.134 mi.)*** | ***B6*** | ***14*** |

# EXECUTIVE SUMMARY

Comp Number: 4042

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 4 HIST UST sites within approximately 0.25 miles of the target property.

| Equal/Higher Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| JONES/NEGLEY FARM<br>Facility Id: 00000031360 | 21092 PILLSBURY | NNW 0 - 1/8 (0.102 mi.) | A4 | 13 |

| Lower Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| ***LEWIS SELAGI FARMS*** | ***9011 SEDAN RD*** | ***S 1/8 - 1/4 (0.134 mi.)*** | ***B6*** | ***14*** |
| FARM<br>Facility Id: 00000060505 | 9011 SEDAN AVE | S 1/8 - 1/4 (0.134 mi.) | B7 | 16 |
| SHERWOOD VAN VUREN<br>Facility Id: 00000058042 | 8887 SEDAN | SSW 1/8 - 1/4 (0.245 mi.) | 8 | 16 |

CA FID UST: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there are 2 CA FID UST sites within approximately 0.25 miles of the target property.

| Equal/Higher Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| ***COIT, JIM***<br>Facility Id: 39003803<br>Status: I | ***21092 PILLSBURY RD*** | ***NNW 0 - 1/8 (0.102 mi.)*** | ***A3*** | ***12*** |

| Lower Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| ***LEWIS SELAGI FARMS***<br>Facility Id: 39003835<br>Status: I | ***9011 SEDAN RD*** | ***S 1/8 - 1/4 (0.134 mi.)*** | ***B6*** | ***14*** |

***Other Ascertainable Records***

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 06/15/2020 has revealed that there is 1 RCRA NonGen / NLR site within approximately 0.25 miles of the target property.

| Equal/Higher Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| PLANT SCIENCES INC | 9715 SEDAN AVE | ESE 0 - 1/8 (0.030 mi.) | 1 | 9 |

EPA ID:: CAL000274871

Notify 65: Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

A review of the Notify 65 list, as provided by EDR, and dated 08/21/2020 has revealed that there are 2 Notify 65 sites within approximately 1 mile of the target property.

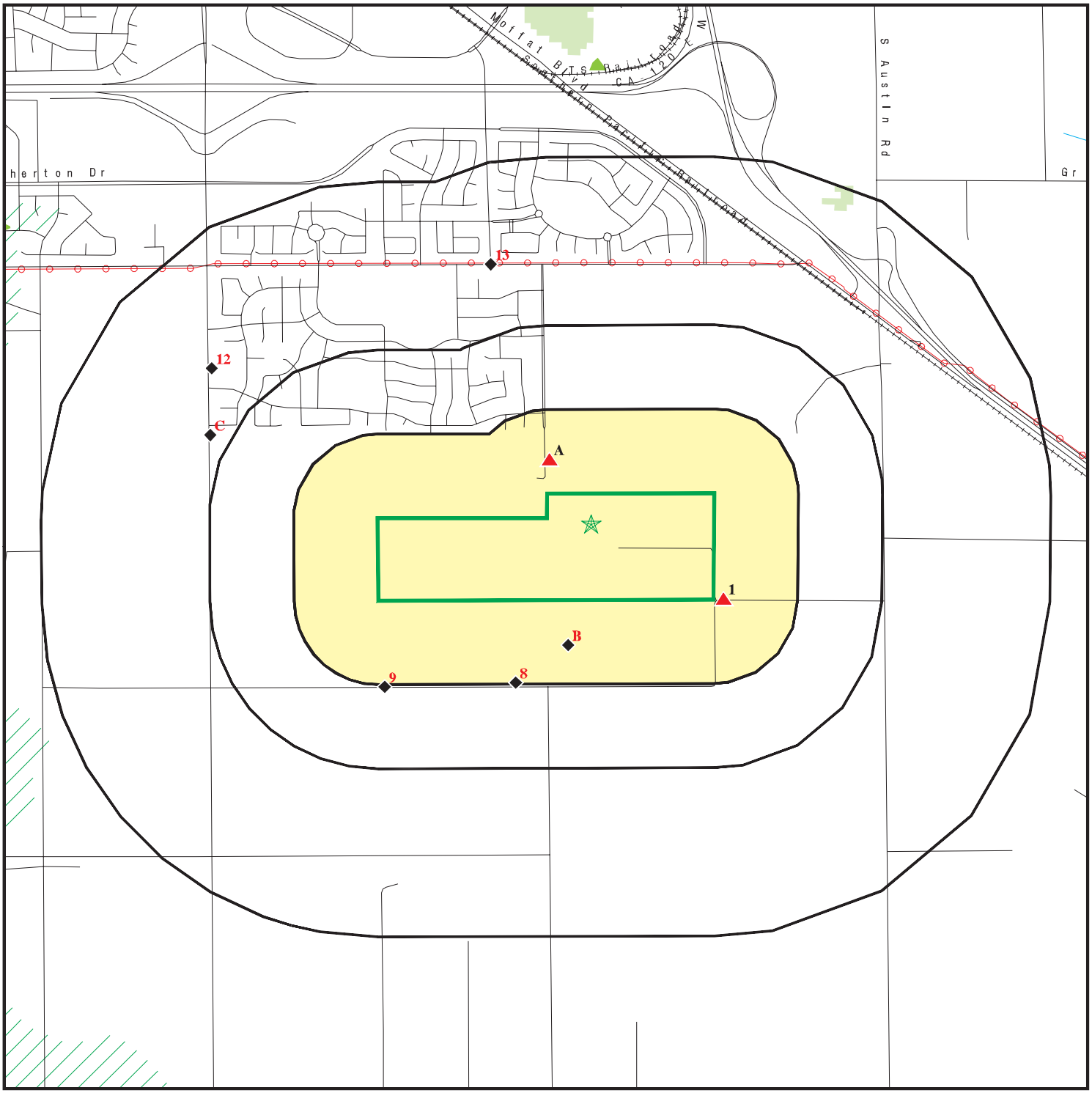
| Lower Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| ***TRI-AG SERVICE, INC.*** | ***20696 S. MANTECA ROA*** | ***WNW 1/2 - 1 (0.555 mi.)*** | ***C11*** | ***19*** |
| ***KIM MARTIN*** | ***2112 S MAIN ST*** | ***WNW 1/2 - 1 (0.664 mi.)*** | ***12*** | ***20*** |

# EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 2 records.

| Site Name | Database(s) |
|---|---|
| BALMAT & CO.** | CPS-SLIC |
| SEDAN AVE PROPERTY (WASTE RETENTIO | CPS-SLIC |

# OVERVIEW MAP - 6262441.2S




Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

Power transmission lines

Special Flood Hazard Area (1%)

0.2% Annual Chance Flood Hazard

National Wetland Inventory

State Wetlands

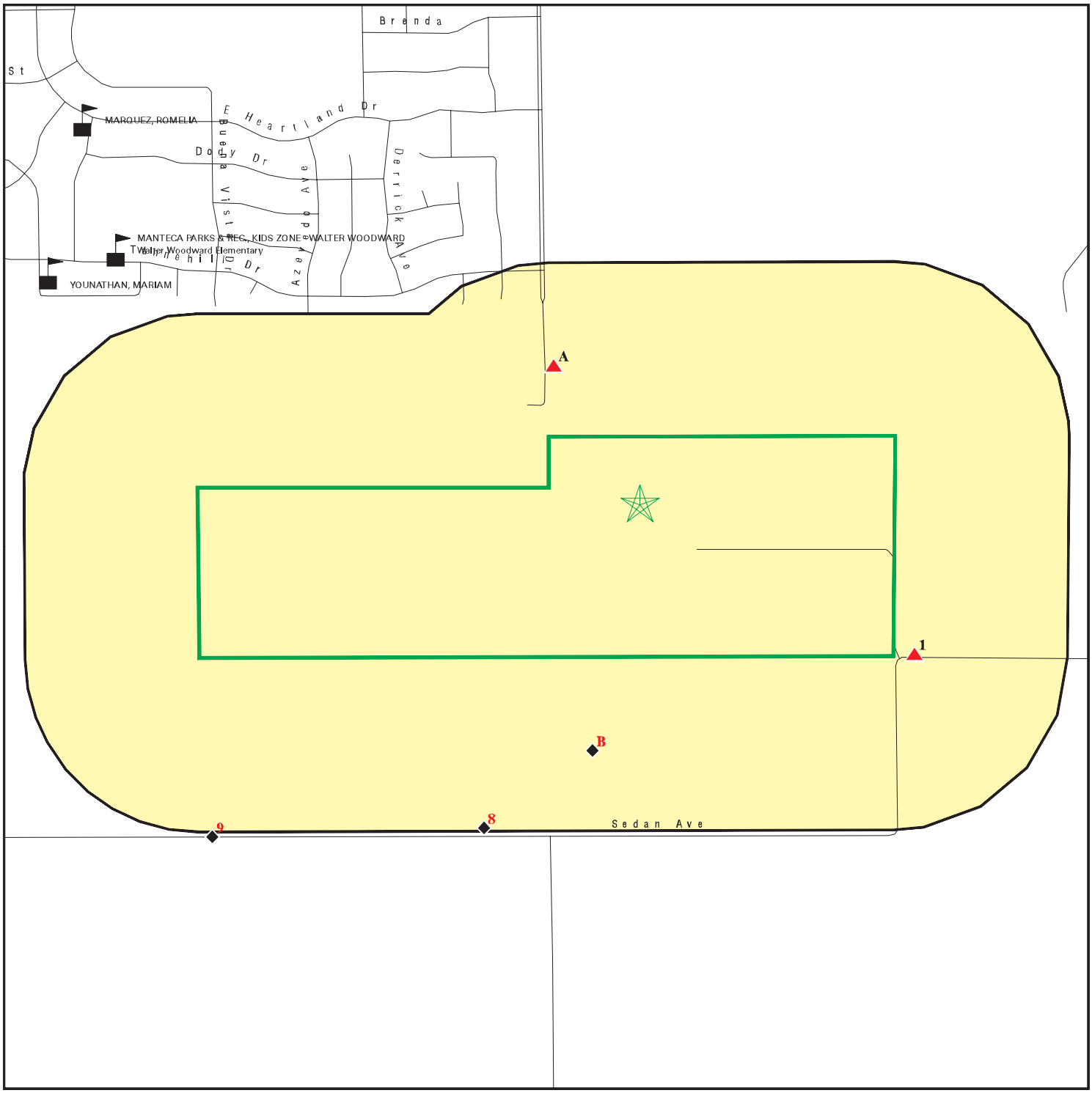
Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

| | |
|---|---|
| SITE NAME: Hat Ranch<br>ADDRESS: 9701 Sedan Avenue<br>Manteca CA 95337<br>LAT/LONG: 37.764518 / 121.194904 | CLIENT: Engeo<br>CONTACT: Cody Johnson<br>INQUIRY #: 6262441.2s<br>DATE: November 11, 2020 1:14 pm |

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# DETAIL MAP - 6262441.2S




Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

Special Flood Hazard Area (1%)

0.2% Annual Chance Flood Hazard

Areas of Concern

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

| | |
|---|---|
| SITE NAME: Hat Ranch | CLIENT: Engeo |
| ADDRESS: 9701 Sedan Avenue<br>Manteca CA 95337 | CONTACT: Cody Johnson<br>INQUIRY #: 6262441.2s |
| LAT/LONG: 37.764518 / 121.194904 | DATE: November 11, 2020 1:15 pm |

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# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| **STANDARD ENVIRONMENTAL RECORDS** | | | | | | | | |
| ***Federal NPL site list*** | | | | | | | | |
| NPL | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| Proposed NPL | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| NPL LIENS | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***Federal Delisted NPL site list*** | | | | | | | | |
| Delisted NPL | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***Federal CERCLIS list*** | | | | | | | | |
| FEDERAL FACILITY | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| SEMS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal CERCLIS NFRAP site list*** | | | | | | | | |
| SEMS-ARCHIVE | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal RCRA CORRACTS facilities list*** | | | | | | | | |
| CORRACTS | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***Federal RCRA non-CORRACTS TSD facilities list*** | | | | | | | | |
| RCRA-TSDF | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal RCRA generators list*** | | | | | | | | |
| RCRA-LQG | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| RCRA-SQG | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| RCRA-VSQG | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ***Federal institutional controls / engineering controls registries*** | | | | | | | | |
| LUCIS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| US ENG CONTROLS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| US INST CONTROLS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal ERNS list*** | | | | | | | | |
| ERNS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| ***State- and tribal - equivalent NPL*** | | | | | | | | |
| RESPONSE | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***State- and tribal - equivalent CERCLIS*** | | | | | | | | |
| ENVIROSTOR | 1.000 | | 0 | 0 | 0 | 2 | NR | 2 |
| ***State and tribal landfill and/or solid waste disposal site lists*** | | | | | | | | |
| SWF/LF | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***State and tribal leaking storage tank lists*** | | | | | | | | |
| LUST | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |

# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| INDIAN LUST | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| CPS-SLIC | 0.500 | | 0 | 0 | 1 | NR | NR | 1 |
| ***State and tribal registered storage tank lists*** | | | | | | | | |
| FEMA UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| UST | 0.250 | | 1 | 1 | NR | NR | NR | 2 |
| AST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| INDIAN UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ***State and tribal voluntary cleanup sites*** | | | | | | | | |
| VCP | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| INDIAN VCP | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***State and tribal Brownfields sites*** | | | | | | | | |
| BROWNFIELDS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| **ADDITIONAL ENVIRONMENTAL RECORDS** | | | | | | | | |
| ***Local Brownfield lists*** | | | | | | | | |
| US BROWNFIELDS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Local Lists of Landfill / Solid Waste Disposal Sites*** | | | | | | | | |
| WMUDS/SWAT | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| SWRCY | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| HAULERS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| INDIAN ODI | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ODI | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| DEBRIS REGION 9 | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| IHS OPEN DUMPS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Local Lists of Hazardous waste / Contaminated Sites*** | | | | | | | | |
| US HIST CDL | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| HIST Cal-Sites | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| SCH | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| CDL | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| CERS HAZ WASTE | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| Toxic Pits | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| US CDL | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| PFAS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Local Lists of Registered Storage Tanks*** | | | | | | | | |
| SWEEPS UST | 0.250 | | 1 | 1 | NR | NR | NR | 2 |
| HIST UST | 0.250 | | 1 | 3 | NR | NR | NR | 4 |
| CERS TANKS | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| CA FID UST | 0.250 | | 1 | 1 | NR | NR | NR | 2 |
| ***Local Land Records*** | | | | | | | | |
| LIENS | 0.001 | | 0 | NR | NR | NR | NR | 0 |

# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| LIENS 2 | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| DEED | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Records of Emergency Release Reports*** | | | | | | | | |
| HMIRS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| CHMIRS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| LDS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| MCS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| SPILLS 90 | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| ***Other Ascertainable Records*** | | | | | | | | |
| RCRA NonGen / NLR | 0.250 | | 1 | 0 | NR | NR | NR | 1 |
| FUDS | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| DOD | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| SCRD DRYCLEANERS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| US FIN ASSUR | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| EPA WATCH LIST | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| 2020 COR ACTION | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| TSCA | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| TRIS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| SSTS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| ROD | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| RMP | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| RAATS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| PRP | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| PADS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| ICIS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| FTTS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| MLTS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| COAL ASH DOE | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| COAL ASH EPA | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| PCB TRANSFORMER | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| RADINFO | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| HIST FTTS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| DOT OPS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| CONSENT | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| INDIAN RESERV | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| FUSRAP | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| UMTRA | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| LEAD SMELTERS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| US AIRS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| US MINES | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ABANDONED MINES | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| FINDS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| UXO | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| DOCKET HWC | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| ECHO | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| FUELS PROGRAM | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| CA BOND EXP. PLAN | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| Cortese | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| CUPA Listings | 0.250 | | 0 | 0 | NR | NR | NR | 0 |

# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| DRYCLEANERS | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| EMI | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| ENF | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| Financial Assurance | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| HAZNET | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| ICE | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| HIST CORTESE | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| HWP | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| HWT | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| MINES | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| MWMP | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| NPDES | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| PEST LIC | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| PROC | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| Notify 65 | 1.000 | | 0 | 0 | 0 | 2 | NR | 2 |
| UIC | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| UIC GEO | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| WASTEWATER PITS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| WDS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| WIP | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| MILITARY PRIV SITES | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| PROJECT | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| WDR | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| CIWQS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| CERS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| NON-CASE INFO | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| OTHER OIL GAS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| PROD WATER PONDS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| SAMPLING POINT | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| WELL STIM PROJ | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| HWTS | TP | | NR | NR | NR | NR | NR | 0 |
| MINES MRDS | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| **EDR HIGH RISK HISTORICAL RECORDS** | | | | | | | | |
| ***EDR Exclusive Records*** | | | | | | | | |
| EDR MGP | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| EDR Hist Auto | 0.125 | | 0 | NR | NR | NR | NR | 0 |
| EDR Hist Cleaner | 0.125 | | 0 | NR | NR | NR | NR | 0 |
| **EDR RECOVERED GOVERNMENT ARCHIVES** | | | | | | | | |
| ***Exclusive Recovered Govt. Archives*** | | | | | | | | |
| RGA LF | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| RGA LUST | 0.001 | | 0 | NR | NR | NR | NR | 0 |
| - Totals -- | | 0 | 5 | 6 | 1 | 4 | 0 | 16 |

# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

**1**
**ESE**
**< 1/8**
**0.030 mi.**
**158 ft.**

**PLANT SCIENCES INC**
**9715 SEDAN AVE**
**MANTECA, CA 95337**

**RCRA NonGen / NLR**

**1024807540**
**CAL000274871**

**Relative:**
**Higher**

**Actual:**
**47 ft.**

RCRA NonGen / NLR:

| | |
|---|---|
| Date Form Received by Agency: | 2003-09-24 00:00:00.0 |
| Handler Name: | PLANT SCIENCES INC |
| Handler Address: | 9715 SEDAN AVE |
| Handler City,State,Zip: | MANTECA, CA 95337-9718 |
| EPA ID: | CAL000274871 |
| Contact Name: | LUIS MACARIO |
| Contact Address: | 342 GREEN VALLEY RD |
| Contact City,State,Zip: | WATSONVILLE, CA 95076 |
| Contact Telephone: | 831-728-7771 |
| Contact Fax: | 831-728-4967 |
| Contact Email: | LMACARIO@PLANTSCIENCES.COM |
| Contact Title: | Not reported |
| EPA Region: | 09 |
| Land Type: | Not reported |
| Federal Waste Generator Description: | Not a generator, verified |
| Non-Notifier: | Not reported |
| Biennial Report Cycle: | Not reported |
| Accessibility: | Not reported |
| Active Site Indicator: | Handler Activities |
| State District Owner: | Not reported |
| State District: | Not reported |
| Mailing Address: | 342 GREEN VALLEY RD |
| Mailing City,State,Zip: | WATSONVILLE, CA 95076-0000 |
| Owner Name: | PLANT SCIENCES INC |
| Owner Type: | Other |
| Operator Name: | LUIS MACARIO |
| Operator Type: | Other |
| Short-Term Generator Activity: | No |
| Importer Activity: | No |
| Mixed Waste Generator: | No |
| Transporter Activity: | No |
| Transfer Facility Activity: | No |
| Recycler Activity with Storage: | No |
| Small Quantity On-Site Burner Exemption: | No |
| Smelting Melting and Refining Furnace Exemption: | No |
| Underground Injection Control: | No |
| Off-Site Waste Receipt: | No |
| Universal Waste Indicator: | Yes |
| Universal Waste Destination Facility: | Yes |
| Federal Universal Waste: | No |
| Active Site Fed-Reg Treatment Storage and Disposal Facility: | Not reported |
| Active Site Converter Treatment storage and Disposal Facility: | Not reported |
| Active Site State-Reg Treatment Storage and Disposal Facility: | Not reported |
| Active Site State-Reg Handler: | --- |
| Federal Facility Indicator: | Not reported |
| Hazardous Secondary Material Indicator: | N |
| Sub-Part K Indicator: | Not reported |
| Commercial TSD Indicator: | No |
| Treatment Storage and Disposal Type: | Not reported |
| 2018 GPRA Permit Baseline: | Not on the Baseline |
| 2018 GPRA Renewals Baseline: | Not on the Baseline |
| Permit Renewals Workload Universe: | Not reported |

**PLANT SCIENCES INC (Continued)** **1024807540**

| | |
|---|---|
| Permit Workload Universe: | Not reported |
| Permit Progress Universe: | Not reported |
| Post-Closure Workload Universe: | Not reported |
| Closure Workload Universe: | Not reported |
| 202 GPRA Corrective Action Baseline: | No |
| Corrective Action Workload Universe: | No |
| Subject to Corrective Action Universe: | No |
| Non-TSDFs Where RCRA CA has Been Imposed Universe: | No |
| TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe: | No |
| TSDFs Only Subject to CA under Discretionary Auth Universe: | No |
| Corrective Action Priority Ranking: | No NCAPS ranking |
| Environmental Control Indicator: | No |
| Institutional Control Indicator: | No |
| Human Exposure Controls Indicator: | N/A |
| Groundwater Controls Indicator: | N/A |
| Operating TSDF Universe: | Not reported |
| Full Enforcement Universe: | Not reported |
| Significant Non-Complier Universe: | No |
| Unaddressed Significant Non-Complier Universe: | No |
| Addressed Significant Non-Complier Universe: | No |
| Significant Non-Complier With a Compliance Schedule Universe: | No |
| Financial Assurance Required: | Not reported |
| Handler Date of Last Change: | 2018-09-05 20:25:15.0 |
| Recognized Trader-Importer: | No |
| Recognized Trader-Exporter: | No |
| Importer of Spent Lead Acid Batteries: | No |
| Exporter of Spent Lead Acid Batteries: | No |
| Recycler Activity Without Storage: | No |
| Manifest Broker: | No |
| Sub-Part P Indicator: | No |

Handler - Owner Operator:

| | |
|---|---|
| Owner/Operator Indicator: | Owner |
| Owner/Operator Name: | PLANT SCIENCES INC |
| Legal Status: | Other |
| Date Became Current: | Not reported |
| Date Ended Current: | Not reported |
| Owner/Operator Address: | 342 GREEN VALLEY RD |
| Owner/Operator City,State,Zip: | WATSONVILLE, CA 95076-1305 |
| Owner/Operator Telephone: | 831-728-7771 |
| Owner/Operator Telephone Ext: | Not reported |
| Owner/Operator Fax: | Not reported |
| Owner/Operator Email: | Not reported |

| | |
|---|---|
| Owner/Operator Indicator: | Operator |
| Owner/Operator Name: | LUIS MACARIO |
| Legal Status: | Other |
| Date Became Current: | Not reported |
| Date Ended Current: | Not reported |
| Owner/Operator Address: | 342 GREEN VALLEY RD |
| Owner/Operator City,State,Zip: | WATSONVILLE, CA 95076 |
| Owner/Operator Telephone: | 831-728-7771 |
| Owner/Operator Telephone Ext: | Not reported |
| Owner/Operator Fax: | Not reported |
| Owner/Operator Email: | Not reported |

**PLANT SCIENCES INC (Continued)** **1024807540**

Historic Generators:

| | |
|---|---|
| Receive Date: | 2003-09-24 00:00:00.0 |
| Handler Name: | PLANT SCIENCES INC |
| Federal Waste Generator Description: | Not a generator, verified |
| State District Owner: | Not reported |
| Large Quantity Handler of Universal Waste: | No |
| Recognized Trader Importer: | No |
| Recognized Trader Exporter: | No |
| Spent Lead Acid Battery Importer: | No |
| Spent Lead Acid Battery Exporter: | No |
| Current Record: | Yes |
| Non Storage Recycler Activity: | Not reported |
| Electronic Manifest Broker: | Not reported |

List of NAICS Codes and Descriptions:

| | |
|---|---|
| NAICS Code: | 111334 |
| NAICS Description: | BERRY (EXCEPT STRAWBERRY) FARMING |

Facility Has Received Notices of Violations:

| | |
|---|---|
| Violations: | No Violations Found |

Evaluation Action Summary:

| | |
|---|---|
| Evaluations: | No Evaluations Found |

---

**A2** **JIM COIT** **UST** **U004024074**
**NNW** **21092 PILLSBURY RD** **N/A**
**< 1/8** **MANTECA, CA 95336**
**0.102 mi.**
**541 ft.** **Site 1 of 3 in cluster A**

**Relative:**
**Higher**

**Actual:**
**46 ft.**

UST SAN JOAQUIN:

| | |
|---|---|
| Name: | JIM COIT |
| Address: | 21092 PILLSBURY RD |
| City,State,Zip: | MANTECA, CA 95336 |
| Region: | SJ |
| Facility Id: | FA0005348 |
| Mail Address: | 21092 PILLSBURY RD |
| Mail Address 2: | Not reported |
| Mail Care of: | JIM COIT |
| Mail City,St,Zip: | MANTECA, CA 95336 |
| Tank Rec ID: | TA0502166 |
| Tank Number: | 1 |
| Tank Status: | 02 - Inactive, non-billable |
| Tank Capacity: | 350 |
| Product Type Desc: | 09 - OTHER PETROLEUM |
| Program Element: | 2323 |
| Decode for Program Element: | 2323 - ADDITIONAL FARM TANK #1 - obsolete |
| Chemical Form: | (none) |
| CAS#: | Not reported |
| CERS ID: | Not reported |
| Cross Ref Tank ID: | Not reported |
| LEA ID: | 9 |
| Common Name: | Not reported |
| Date Installed: | Not reported |

**JIM COIT (Continued)** **U004024074**

Date of Closure: Not reported
Latitude: Not reported
Longitude: Not reported

---

**A3** **COIT, JIM** **SWEEPS UST** **S101593374**
**NNW** **21092 PILLSBURY RD** **CA FID UST** **N/A**
**< 1/8** **MANTECA, CA 95336**
**0.102 mi.**
**541 ft.** **Site 2 of 3 in cluster A**

**Relative:**
**Higher**

**Actual:**
**46 ft.**

SWEEPS UST:

| | |
|---|---|
| Name: | COIT, JIM |
| Address: | 21092 PILLSBURY RD |
| City: | MANTECA |
| Status: | Not reported |
| Comp Number: | 4002 |
| Number: | Not reported |
| Board Of Equalization: | Not reported |
| Referral Date: | Not reported |
| Action Date: | Not reported |
| Created Date: | Not reported |
| Owner Tank Id: | Not reported |
| SWRCB Tank Id: | 39-000-004002-000001 |
| Tank Status: | Not reported |
| Capacity: | 350 |
| Active Date: | Not reported |
| Tank Use: | M.V. FUEL |
| STG: | PRODUCT |
| Content: | DIESEL |
| Number Of Tanks: | 1 |

CA FID UST:

| | |
|---|---|
| Facility ID: | 39003803 |
| Regulated By: | UTNKI |
| Regulated ID: | Not reported |
| Cortese Code: | Not reported |
| SIC Code: | Not reported |
| Facility Phone: | 2098257111 |
| Mail To: | Not reported |
| Mailing Address: | 21092 PILLSBURY RD |
| Mailing Address 2: | Not reported |
| Mailing City,St,Zip: | MANTECA 95336 |
| Contact: | Not reported |
| Contact Phone: | Not reported |
| DUNs Number: | Not reported |
| NPDES Number: | Not reported |
| EPA ID: | Not reported |
| Comments: | Not reported |
| Status: | Inactive |

**A4** **JONES/NEGLEY FARM** **HIST UST** **U001606232**
**NNW** **21092 PILLSBURY** **N/A**
**< 1/8** **MANTECA, CA 95336**
**0.102 mi.**
**541 ft.** **Site 3 of 3 in cluster A**

**Relative:** **Higher**
**Actual:** **46 ft.**

HIST UST:

| | |
|---|---|
| Name: | JONES/NEGLEY FARM |
| Address: | 21092 PILLSBURY |
| City,State,Zip: | MANTECA, CA 95336 |
| File Number: | 0002B210 |
| URL: | http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002B210.pdf |
| Region: | STATE |
| Facility ID: | 00000031360 |
| Facility Type: | Other |
| Other Type: | FARM ALMONDS |
| Contact Name: | Not reported |
| Telephone: | 2098238566 |
| Owner Name: | RICHARD W. JONES |
| Owner Address: | 21092 PILLSBURY ROAD |
| Owner City,St,Zip: | MANTECA, CA 95336 |
| Total Tanks: | 0001 |
| | |
| Tank Num: | 001 |
| Container Num: | 1 |
| Year Installed: | Not reported |
| Tank Capacity: | 00000000 |
| Tank Used for: | PRODUCT |
| Type of Fuel: | DIESEL |
| Container Construction Thickness: | Not reported |
| Leak Detection: | None |

Click here for Geo Tracker PDF:

---

**B5** **LEWIS SELAGI FARMS** **UST** **U004024193**
**South** **9011 SEDAN RD** **N/A**
**1/8-1/4** **MANTECA, CA 95366**
**0.134 mi.**
**709 ft.** **Site 1 of 3 in cluster B**

**Relative:** **Lower**
**Actual:** **42 ft.**

UST SAN JOAQUIN:

| | |
|---|---|
| Name: | LEWIS SELAGI FARMS |
| Address: | 9011 SEDAN RD |
| City,State,Zip: | MANTECA, CA 95366 |
| Region: | SJ |
| Facility Id: | FA0005689 |
| Mail Address: | 9011 SEDAN RD |
| Mail Address 2: | Not reported |
| Mail Care of: | LEWIS SELAGI FARMS |
| Mail City,St,Zip: | MANTECA, CA 95366 |
| | |
| Tank Rec ID: | TA0503114 |
| Tank Number: | 1 |
| Tank Status: | 02 - Inactive, non-billable |
| Tank Capacity: | 0 |
| Product Type Desc: | 09 - OTHER PETROLEUM |
| Program Element: | 2322 |
| Decode for Program Element: | 2322 - EXEMPT UST |
| Chemical Form: | (none) |
| CAS#: | Not reported |

**LEWIS SELAGI FARMS (Continued)** **U004024193**

| | |
|---|---|
| CERS ID: | Not reported |
| Cross Ref Tank ID: | Not reported |
| LEA ID: | 9 |
| Common Name: | Not reported |
| Date Installed: | Not reported |
| Date of Closure: | Not reported |
| Latitude: | Not reported |
| Longitude: | Not reported |

| | |
|---|---|
| Tank Rec ID: | TA0503115 |
| Tank Number: | 2 |
| Tank Status: | 02 - Inactive, non-billable |
| Tank Capacity: | 0 |
| Product Type Desc: | 09 - OTHER PETROLEUM |
| Program Element: | 2322 |
| Decode for Program Element: | 2322 - EXEMPT UST |
| Chemical Form: | (none) |
| CAS#: | Not reported |
| CERS ID: | Not reported |
| Cross Ref Tank ID: | Not reported |
| LEA ID: | 9 |
| Common Name: | Not reported |
| Date Installed: | Not reported |
| Date of Closure: | Not reported |
| Latitude: | Not reported |
| Longitude: | Not reported |

---

**B6** **LEWIS SELAGI FARMS** **SWEEPS UST** **S101593376**
**South** **9011 SEDAN RD** **HIST UST** **N/A**
**1/8-1/4** **MANTECA, CA 95336** **CA FID UST**
**0.134 mi.**
**709 ft.** **Site 2 of 3 in cluster B**

**Relative:** **Lower**

**Actual:** **42 ft.**

SWEEPS UST:

| | |
|---|---|
| Name: | LEWIS SELAGI FARMS |
| Address: | 9011 SEDAN RD |
| City: | MANTECA |
| Status: | Not reported |
| Comp Number: | 4042 |
| Number: | Not reported |
| Board Of Equalization: | Not reported |
| Referral Date: | Not reported |
| Action Date: | Not reported |
| Created Date: | Not reported |
| Owner Tank Id: | Not reported |
| SWRCB Tank Id: | 39-000-004042-000001 |
| Tank Status: | Not reported |
| Capacity: | 1100 |
| Active Date: | Not reported |
| Tank Use: | UNKNOWN |
| STG: | PRODUCT |
| Content: | Not reported |
| Number Of Tanks: | 2 |

| | |
|---|---|
| Name: | LEWIS SELAGI FARMS |
| Address: | 9011 SEDAN RD |
| City: | MANTECA |

**LEWIS SELAGI FARMS (Continued)** **S101593376**

| | |
|---|---|
| Status: | Not reported |
| Comp Number: | 4042 |
| Number: | Not reported |
| Board Of Equalization: | Not reported |
| Referral Date: | Not reported |
| Action Date: | Not reported |
| Created Date: | Not reported |
| Owner Tank Id: | Not reported |
| SWRCB Tank Id: | 39-000-004042-000002 |
| Tank Status: | Not reported |
| Capacity: | 1100 |
| Active Date: | Not reported |
| Tank Use: | UNKNOWN |
| STG: | PRODUCT |
| Content: | Not reported |
| Number Of Tanks: | Not reported |

HIST UST:

| | |
|---|---|
| Name: | FARM |
| Address: | 9011 SEDAN RD |
| City,State,Zip: | MANTECA, CA 95336 |
| File Number: | 0002FE98 |
| URL: | http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002FE98.pdf |
| Region: | Not reported |
| Facility ID: | Not reported |
| Facility Type: | Not reported |
| Other Type: | Not reported |
| Contact Name: | Not reported |
| Telephone: | Not reported |
| Owner Name: | Not reported |
| Owner Address: | Not reported |
| Owner City,St,Zip: | Not reported |
| Total Tanks: | Not reported |

| | |
|---|---|
| Tank Num: | Not reported |
| Container Num: | Not reported |
| Year Installed: | Not reported |
| Tank Capacity: | Not reported |
| Tank Used for: | Not reported |
| Type of Fuel: | Not reported |
| Container Construction Thickness: | Not reported |
| Leak Detection: | Not reported |

Click here for Geo Tracker PDF:

CA FID UST:

| | |
|---|---|
| Facility ID: | 39003835 |
| Regulated By: | UTNKI |
| Regulated ID: | Not reported |
| Cortese Code: | Not reported |
| SIC Code: | Not reported |
| Facility Phone: | Not reported |
| Mail To: | Not reported |
| Mailing Address: | 9011 SEDAN RD |
| Mailing Address 2: | Not reported |
| Mailing City,St,Zip: | MANTECA 95336 |

**LEWIS SELAGI FARMS (Continued)** **S101593376**

Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

---

**B7** **FARM** **HIST UST** **U001606191**
**South** **9011 SEDAN AVE** **N/A**
**1/8-1/4** **MANTECA, CA 95336**
**0.134 mi.**
**709 ft.** **Site 3 of 3 in cluster B**

**Relative:** HIST UST:
**Lower**
**Actual:** Name: FARM
**42 ft.** Address: 9011 SEDAN AVE
City,State,Zip: MANTECA, CA 95336
File Number: Not reported
URL: Not reported
Region: STATE
Facility ID: 00000060505
Facility Type: Other
Other Type: FARM
Contact Name: Not reported
Telephone: 2092392479
Owner Name: LEWIS SILAGI
Owner Address: 9011 SEDAN RD.
Owner City,St,Zip: MANTECA, CA 95336
Total Tanks: 0001

Tank Num: 001
Container Num: 1
Year Installed: 1982
Tank Capacity: 00001500
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Container Construction Thickness: Not reported
Leak Detection: None

---

**8** **SHERWOOD VAN VUREN** **HIST UST** **U001606295**
**SSW** **8887 SEDAN** **N/A**
**1/8-1/4** **MANTECA, CA 95336**
**0.245 mi.**
**1295 ft.**

**Relative:** HIST UST:
**Lower**
**Actual:** Name: SHERWOOD VAN VUREN
**42 ft.** Address: 8887 SEDAN
City,State,Zip: MANTECA, CA 95336
File Number: 0002B36F
URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002B36F.pdf
Region: STATE
Facility ID: 00000058042
Facility Type: Other
Other Type: FARM

**SHERWOOD VAN VUREN (Continued)** **U001606295**

| | |
|---|---|
| Contact Name: | Not reported |
| Telephone: | 2082392091 |
| Owner Name: | SHERWOOD VAN VUREN |
| Owner Address: | 8887 SEDAN |
| Owner City,St,Zip: | MANTECA, CA 95336 |
| Total Tanks: | 0001 |
| | |
| Tank Num: | 001 |
| Container Num: | 1 |
| Year Installed: | 1974 |
| Tank Capacity: | 00000300 |
| Tank Used for: | PRODUCT |
| Type of Fuel: | REGULAR |
| Container Construction Thickness: | Not reported |
| Leak Detection: | None |

Click here for Geo Tracker PDF:

---

**9** **EVANS ESTATES** **CPS-SLIC S106486385**
**SW** **SOUTH MAIN STREET** **CERS N/A**
**1/4-1/2** **MANTECA, CA**
**0.257 mi.**
**1356 ft.**

**Relative:**
**Lower**

**Actual:**
**41 ft.**

CPS-SLIC:

| | |
|---|---|
| Name: | EVANS ESTATES |
| Address: | SOUTH MAIN STREET |
| City,State,Zip: | MANTECA, CA |
| Region: | STATE |
| **Facility Status:** | **Completed - Case Closed** |
| Status Date: | 11/20/2017 |
| Global Id: | SLT5S0443085 |
| Lead Agency: | CENTRAL VALLEY RWQCB (REGION 5S) |
| Lead Agency Case Number: | Not reported |
| Latitude: | 37.76693175 |
| Longitude: | -121.20672103 |
| Case Type: | Cleanup Program Site |
| Case Worker: | AMP |
| Local Agency: | Not reported |
| RB Case Number: | SLT5S044 |
| File Location: | All Files are on GeoTracker or in the Local Agency Database |
| Potential Media Affected: | Soil, Under Investigation |
| Potential Contaminants of Concern: | Waste Oil / Motor / Hydraulic / Lubricating |
| Site History: | A letter dated 9/29/1993 from Regional Board staff to San Joaquin County summarizes an inspection. The site used to be an old poultry operation with an abandoned waste retention pond. Eleven barrels containing what appeared to be used engine oil and two oxygen cylinders were found; some of them containing leaks. Waste pond was dry on 24 September 1993. |

Click here to access the California GeoTracker records for this facility:

CERS:

| | |
|---|---|
| Name: | EVANS ESTATES |
| Address: | SOUTH MAIN STREET |
| City,State,Zip: | MANTECA, CA |
| Site ID: | 234862 |

**EVANS ESTATES (Continued)** **S106486385**

CERS ID: SLT5S0443085
CERS Description: Cleanup Program Site

Affiliation:
Affiliation Type Desc: Regional Board Caseworker
Entity Name: ANN M. PALMER - CENTRAL VALLEY RWQCB (REGION 5S)
Entity Title: Not reported
Affiliation Address: 11020 SUN CENTER DRIVE #200
Affiliation City: RANCHO CORDOVA
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: 9164644825

---

**C10** **SCHMIEDT SOIL SERVICE, INC** **ENVIROSTOR** **S101482049**
**WNW** **20696 SOUTH MANTECA ROAD** **N/A**
**1/2-1** **MANTECA, CA 95336**
**0.555 mi.**
**2931 ft.** **Site 1 of 2 in cluster C**

**Relative:** **Lower**
**Actual:** **41 ft.**

ENVIROSTOR:
Name: SCHMIEDT SOIL SERVICE, INC
Address: 20696 SOUTH MANTECA ROAD
City,State,Zip: MANTECA, CA 95336
Facility ID: 39070036
Status: Refer: Other Agency
Status Date: 03/07/1996
Site Code: Not reported
Site Type: Evaluation
Site Type Detailed: Evaluation
Acres: 1
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Referred - Not Assigned
Division Branch: Cleanup Sacramento
Assembly: 12
Senate: 05
Special Program: * CERC2
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 37.77277
Longitude: -121.2155
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: * HALOGENATED SOLVENTS * Pesticides - Rinse Waters * AQUEOUS SOLUTION WITH METALS * CONTAMINATED SOIL * EMPTY PESTICIDE CONTAINERS, 30 GALLONS OR MORE * UNSPECIFIED AQUEOUS SOLUTION * EMPTY CONTAINERS, LESS THAN 30 GALLONS * UNSPECIFIED ORGANIC LIQUID MIXTURE
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: TRI-AG SERVICE
Alias Type: Alternate Name
Alias Name: CAD982358947
Alias Type: CERCLIS ID

**SCHMIEDT SOIL SERVICE, INC (Continued)** **S101482049**

Alias Name: 110000509156
Alias Type: EPA (FRS #)
Alias Name: SLT5S4823431
Alias Type: GeoTracker Global ID
Alias Name: CAD981968902
Alias Type: HWTS Identification Code
Alias Name: 39070036
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Discovery
Completed Date: 06/18/1982
Comments: FACILITY IDENTIFIED DMI LIST.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment Report
Completed Date: 03/24/1988
Comments: PRELIMINARY ASSESSMENT DONE. SITE INSPECTION (SI) MEDIUM PRIORITY RECOMMENDED.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 02/09/1987
Comments: SITE SCREENING DONE. NO CLEANUP DOCUMENTED, HEAVY METAL CONTAMINATION DOCUMENTED.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

---

**C11** **TRI-AG SERVICE, INC.** **HIST UST** **U001606241**
**WNW** **20696 S. MANTECA ROAD** **Notify 65** **N/A**
**1/2-1** **MANTECA, CA 95337**
**0.555 mi.**
**2931 ft.** **Site 2 of 2 in cluster C**

**Relative:**
**Lower**

**Actual:**
**41 ft.**

HIST UST:
Name: LESTER SCHMIEDT
Address: 20696 S MANTECA RD
City,State,Zip: MANTECA, CA 95336
File Number: 0002FE95
URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002FE95.pdf
Region: STATE
Facility ID: 00000041019
Facility Type: Other
Other Type: FARM
Contact Name: Not reported
Telephone: 2098235315

**TRI-AG SERVICE, INC. (Continued)** **U001606241**

Owner Name: LESTER SCHMIEDT
Owner Address: 20696 S MANTECA RD
Owner City,St,Zip: MANTECA, CA 95336
Total Tanks: 0003

Tank Num: 001
Container Num: 1
Year Installed: Not reported
Tank Capacity: 00000500
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

Tank Num: 002
Container Num: 2
Year Installed: Not reported
Tank Capacity: 00000500
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor, None

Tank Num: 003
Container Num: 1
Year Installed: Not reported
Tank Capacity: 00000500
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor, None

Click here for Geo Tracker PDF:

NOTIFY 65:
Name: TRI-AG SERVICE, INC.
Address: 20696 S. MANTECA ROAD
City,State,Zip: MANTECA, CA 95337
Date Reported: Not reported
Staff Initials: Not reported
Board File Number: Not reported
Facility Type: Not reported
Discharge Date: Not reported
Issue Date: Not reported
Incident Description: Not reported

---

**12**
**WNW**
**1/2-1**
**0.664 mi.**
**3506 ft.**

**KIM MARTIN**
**2112 S MAIN ST**
**MANTECA, CA 95337**

**CPS-SLIC** **S112971515**
**HAZNET** **N/A**
**Notify 65**
**CERS**
**HWTS**

**Relative:**
**Lower**

**Actual:**
**41 ft.**

CPS-SLIC:
Name: TRI-AG SERVICE, INC.
Address: 2112 SOUTH MAIN STREET
City,State,Zip: MANTECA, CA 95337
Region: STATE

**KIM MARTIN (Continued)** **S112971515**

| | |
|---|---|
| **Facility Status:** | **Open - Site Assessment** |
| Status Date: | 04/25/2017 |
| Global Id: | SLT5S4823431 |
| Lead Agency: | CENTRAL VALLEY RWQCB (REGION 5S) |
| Lead Agency Case Number: | Not reported |
| Latitude: | 37.771765332 |
| Longitude: | -121.21545822 |
| Case Type: | Cleanup Program Site |
| Case Worker: | JTM |
| Local Agency: | SAN JOAQUIN COUNTY |
| RB Case Number: | SLT5S482 |
| File Location: | All Files are on GeoTracker or in the Local Agency Database |
| Potential Media Affected: | Other Groundwater (uses other than drinking water), Soil, Well used for drinking water supply |
| Potential Contaminants of Concern: | Nitrate, Other Insecticides / Pesticide / Fumigants / Herbicides |
| Site History: | Fertilizer/Pesticide File Summary 1986 - Washpad, sump, large evaporation tank; drains to field. Site also referred to as 20696 South Main Street, Manteca. Schmiedt Soil Service operated a soil fumigant agricultural service at the 5-acre property from 1946 to 1982. The primary products used were DBCP, EDB, and Telone II. Other pesticides and fertilizers were also handled. In 1982, the business was sold to Tri-Ag Service, who operated on 1.5 acres until 2001. Tri-Ag predominately provided fertilizer services, and some pesticide and fumigant services. This ag chem property is within a larger block of ag land being converted to residential housing in 2002. |

Click here to access the California GeoTracker records for this facility:

HAZNET:

| | |
|---|---|
| Name: | KIM MARTIN |
| Address: | 2112 S MAIN ST |
| Address 2: | Not reported |
| City,State,Zip: | MANTECA, CA 953379500 |
| Contact: | RAY RICKETT |
| Telephone: | 2094702936 |
| Mailing Name: | Not reported |
| Mailing Address: | 2112 S MAIN ST |
| Year: | 2008 |
| Gepaid: | CAC002632337 |
| TSD EPA ID: | CAD982446874 |
| CA Waste Code: | 223 - Unspecified oil-containing waste |
| Disposal Method: | H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135) |
| Tons: | 11.7177 |

Additional Info:

| | |
|---|---|
| Year: | 2008 |
| Gen EPA ID: | CAC002632337 |
| Shipment Date: | 20080709 |
| Creation Date: | 8/20/2008 18:30:46 |
| Receipt Date: | 20080709 |
| Manifest ID: | 004533464JJK |
| Trans EPA ID: | CAR000171017 |

**KIM MARTIN (Continued)** **S112971515**

| | |
|---|---|
| Trans Name: | FREMOUW ENVIRONMENTAL SERVICES INC |
| Trans 2 EPA ID: | Not reported |
| Trans 2 Name: | Not reported |
| TSDF EPA ID: | CAD982446874 |
| Trans Name: | EVERGREEN ENVIRONMENTAL SERVICES DAVIS |
| TSDF Alt EPA ID: | Not reported |
| TSDF Alt Name: | Not reported |
| Waste Code Description: | 223 - Unspecified oil-containing waste |
| RCRA Code: | Not reported |
| Meth Code: | H141 - Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135) |
| Quantity Tons: | 11.7177 |
| Waste Quantity: | 2810 |
| Quantity Unit: | G |
| Additional Code 1: | Not reported |
| Additional Code 2: | Not reported |
| Additional Code 3: | Not reported |
| Additional Code 4: | Not reported |
| Additional Code 5: | Not reported |

NOTIFY 65:

| | |
|---|---|
| Name: | TRI-AG SERVICE, INC. |
| Address: | 2112 SOUTH MAIN STREET |
| City,State,Zip: | MANTECA, CA 95337 |
| Date Reported: | Not reported |
| Staff Initials: | Not reported |
| Board File Number: | Not reported |
| Facility Type: | Not reported |
| Discharge Date: | Not reported |
| Issue Date: | 10/13/2017 |
| Incident Description: | Not reported |

CERS:

| | |
|---|---|
| Name: | TRI-AG SERVICE, INC. |
| Address: | 2112 SOUTH MAIN STREET |
| City,State,Zip: | MANTECA, CA 95337 |
| Site ID: | 218111 |
| CERS ID: | SLT5S4823431 |
| CERS Description: | Cleanup Program Site |

Affiliation:

| | |
|---|---|
| Affiliation Type Desc: | Regional Board Caseworker |
| Entity Name: | MARK PAUL BARE - CENTRAL VALLEY RWQCB (REGION 5S) |
| Entity Title: | Not reported |
| Affiliation Address: | 11020 SUN CENTER DRIVE #200 |
| Affiliation City: | RANCHO CORDOVA |
| Affiliation State: | CA |
| Affiliation Country: | Not reported |
| Affiliation Zip: | Not reported |
| Affiliation Phone: | Not reported |

HWTS:

| | |
|---|---|
| Name: | KIM MARTIN |
| Address: | 2112 S MAIN ST |
| Address 2: | Not reported |

**KIM MARTIN (Continued)** **S112971515**

| | |
|---|---|
| City,State,Zip: | MANTECA, CA 953379500 |
| EPA ID: | CAC002632337 |
| Inactive Date: | 01/05/2009 |
| Create Date: | 07/08/2008 |
| Last Act Date: | 02/04/2009 |
| Mailing Name: | Not reported |
| Mailing Address: | 2112 S MAIN ST |
| Mailing Address 2: | Not reported |
| Mailing City,State,Zip: | MANTECA, CA 953379500 |
| Owner Name: | KIM MARTIN |
| Owner Address: | 2112 S MAIN ST |
| Owner Address 2: | Not reported |
| Owner City,State,Zip: | MANTECA, CA 953379500 |
| Contact Name: | RAY RICKETT |
| Contact Address: | 2112 S MAIN ST |
| Contact Address 2: | Not reported |
| City,State,Zip: | MANTECA, CA 953379500 |

---

**13** **WOODWARD ANNEX SITE** **ENVIROSTOR** **S107737646**
**NNW** **WOODWARD AVENUE/SPRECKELS ROAD** **SCH** **N/A**
**1/2-1** **MANTECA, CA 95337** **CERS**
**0.702 mi.**
**3707 ft.**

**Relative:** **Lower**

**Actual:** **44 ft.**

ENVIROSTOR:

| | |
|---|---|
| Name: | WOODWARD ANNEX SITE |
| Address: | WOODWARD AVENUE/SPRECKELS ROAD |
| City,State,Zip: | MANTECA, CA 95337 |
| Facility ID: | 39010046 |
| Status: | No Further Action |
| Status Date: | 10/15/2004 |
| Site Code: | 104440 |
| Site Type: | School Investigation |
| Site Type Detailed: | School |
| Acres: | 8 |
| NPL: | NO |
| Regulatory Agencies: | SMBRP |
| Lead Agency: | SMBRP |
| Program Manager: | Kamili Siglowide |
| Supervisor: | Mark Malinowski |
| Division Branch: | Northern California Schools & Santa Susana |
| Assembly: | 12 |
| Senate: | 05 |
| Special Program: | Not reported |
| Restricted Use: | NO |
| Site Mgmt Req: | NONE SPECIFIED |
| Funding: | School District |
| Latitude: | 37.7841 |
| Longitude: | -121.2 |
| APN: | NONE SPECIFIED |
| Past Use: | AGRICULTURAL - ROW CROPS |
| Potential COC: | NONE SPECIFIED No Contaminants found |
| Confirmed COC: | No Contaminants found |
| Potential Description: | SOIL |
| Alias Name: | MANTECA USD-PROPOSED WOODWARD ANNEX |
| Alias Type: | Alternate Name |
| Alias Name: | 104440 |
| Alias Type: | Project Code (Site Code) |

**WOODWARD ANNEX SITE (Continued)** **S107737646**

Alias Name: 39010046
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 07/06/2005
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 06/14/2005
Comments: DTSC approved the PEA report with a no further action required determination.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Workplan
Completed Date: 02/18/2005
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 03/07/2005
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 10/15/2004
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

SCH:

Name: WOODWARD ANNEX SITE
Address: WOODWARD AVENUE/SPRECKELS ROAD
City,State,Zip: MANTECA, CA 95337
Facility ID: 39010046
Site Type: School Investigation
Site Type Detail: School
Site Mgmt. Req.: NONE SPECIFIED
Acres: 8
National Priorities List: NO
Cleanup Oversight Agencies: SMBRP

**WOODWARD ANNEX SITE (Continued)** **S107737646**

| | |
|---|---|
| Lead Agency: | SMBRP |
| Lead Agency Description: | DTSC - Site Cleanup Program |
| Project Manager: | Kamili Siglowide |
| Supervisor: | Mark Malinowski |
| Division Branch: | Northern California Schools & Santa Susana |
| Site Code: | 104440 |
| Assembly: | 12 |
| Senate: | 05 |
| Special Program Status: | Not reported |
| Status: | No Further Action |
| Status Date: | 10/15/2004 |
| Restricted Use: | NO |
| Funding: | School District |
| Latitude: | 37.7841 |
| Longitude: | -121.2 |
| APN: | NONE SPECIFIED |
| Past Use: | AGRICULTURAL - ROW CROPS |
| Potential COC: | NONE SPECIFIED, No Contaminants found |
| Confirmed COC: | No Contaminants found |
| Potential Description: | SOIL |
| Alias Name: | MANTECA USD-PROPOSED WOODWARD ANNEX |
| Alias Type: | Alternate Name |
| Alias Name: | 104440 |
| Alias Type: | Project Code (Site Code) |
| Alias Name: | 39010046 |
| Alias Type: | Envirostor ID Number |

Completed Info:

| | |
|---|---|
| Completed Area Name: | PROJECT WIDE |
| Completed Sub Area Name: | Not reported |
| Completed Document Type: | Cost Recovery Closeout Memo |
| Completed Date: | 07/06/2005 |
| Comments: | Not reported |
| Completed Area Name: | PROJECT WIDE |
| Completed Sub Area Name: | Not reported |
| Completed Document Type: | Preliminary Endangerment Assessment Report |
| Completed Date: | 06/14/2005 |
| Comments: | DTSC approved the PEA report with a no further action required determination. |
| Completed Area Name: | PROJECT WIDE |
| Completed Sub Area Name: | Not reported |
| Completed Document Type: | Preliminary Endangerment Assessment Workplan |
| Completed Date: | 02/18/2005 |
| Comments: | Not reported |
| Completed Area Name: | PROJECT WIDE |
| Completed Sub Area Name: | Not reported |
| Completed Document Type: | Site Inspections/Visit (Non LUR) |
| Completed Date: | 03/07/2005 |
| Comments: | Not reported |
| Completed Area Name: | PROJECT WIDE |
| Completed Sub Area Name: | Not reported |
| Completed Document Type: | Environmental Oversight Agreement |
| Completed Date: | 10/15/2004 |
| Comments: | Not reported |

**WOODWARD ANNEX SITE (Continued)** **S107737646**

| | |
|---|---|
| Future Area Name: | Not reported |
| Future Sub Area Name: | Not reported |
| Future Document Type: | Not reported |
| Future Due Date: | Not reported |
| Schedule Area Name: | Not reported |
| Schedule Sub Area Name: | Not reported |
| Schedule Document Type: | Not reported |
| Schedule Due Date: | Not reported |
| Schedule Revised Date: | Not reported |

CERS:

| | |
|---|---|
| Name: | WOODWARD ANNEX SITE |
| Address: | WOODWARD AVENUE/SPRECKELS ROAD |
| City,State,Zip: | MANTECA, CA 95337 |
| Site ID: | 344968 |
| CERS ID: | 39010046 |
| CERS Description: | School Investigation |

Affiliation:

| | |
|---|---|
| Affiliation Type Desc: | Supervisor |
| Entity Name: | MARK MALINOWSKI |
| Entity Title: | Not reported |
| Affiliation Address: | Not reported |
| Affiliation City: | Not reported |
| Affiliation State: | Not reported |
| Affiliation Country: | Not reported |
| Affiliation Zip: | Not reported |
| Affiliation Phone: | Not reported |

| | |
|---|---|
| Affiliation Type Desc: | Lead Project Manager |
| Entity Name: | KAMILI SIGLOWIDE |
| Entity Title: | Not reported |
| Affiliation Address: | Not reported |
| Affiliation City: | SACRAMENTO |
| Affiliation State: | CA |
| Affiliation Country: | Not reported |
| Affiliation Zip: | Not reported |
| Affiliation Phone: | Not reported |

Count: 2 records. ORPHAN SUMMARY

| City | EDR ID | Site Name | Site Address | Zip | Database(s) |
|---|---|---|---|---|---|
| MANTECA | S106230469 | BALMAT & CO.** | SEDAN AVE NEAR MANTECA | | CPS-SLIC |
| MANTECA | S106230468 | SEDAN AVE PROPERTY (WASTE RETENTIO | SEDAN AVE (1/2 MILE NORTH OF) | | CPS-SLIC |

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Number of Days to Update:** Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

**STANDARD ENVIRONMENTAL RECORDS**

***Federal NPL site list***

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 07/29/2020
Date Data Arrived at EDR: 08/03/2020
Date Made Active in Reports: 08/25/2020
Number of Days to Update: 22

Source: EPA
Telephone: N/A
Last EDR Contact: 11/05/2020
Next Scheduled EDR Contact: 01/11/2021
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 07/29/2020
Date Data Arrived at EDR: 08/03/2020
Date Made Active in Reports: 08/25/2020
Number of Days to Update: 22

Source: EPA
Telephone: N/A
Last EDR Contact: 11/05/2020
Next Scheduled EDR Contact: 01/11/2021
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

***Federal Delisted NPL site list***

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 07/29/2020
Date Data Arrived at EDR: 08/03/2020
Date Made Active in Reports: 08/25/2020
Number of Days to Update: 22

Source: EPA
Telephone: N/A
Last EDR Contact: 11/05/2020
Next Scheduled EDR Contact: 01/11/2021
Data Release Frequency: Quarterly

***Federal CERCLIS list***

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 04/03/2019
Date Data Arrived at EDR: 04/05/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 10/02/2020
Next Scheduled EDR Contact: 01/11/2021
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 07/29/2020
Date Data Arrived at EDR: 08/03/2020
Date Made Active in Reports: 08/25/2020
Number of Days to Update: 22

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 11/05/2020
Next Scheduled EDR Contact: 01/25/2021
Data Release Frequency: Quarterly

***Federal CERCLIS NFRAP site list***

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 07/29/2020
Date Data Arrived at EDR: 08/03/2020
Date Made Active in Reports: 08/25/2020
Number of Days to Update: 22

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 11/05/2020
Next Scheduled EDR Contact: 01/25/2021
Data Release Frequency: Quarterly

***Federal RCRA CORRACTS facilities list***

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/15/2020
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 09/17/2020
Number of Days to Update: 87

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/22/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 06/15/2020
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 09/18/2020
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/22/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

***Federal RCRA generators list***

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/15/2020
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 09/18/2020
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/22/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 06/15/2020
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 09/18/2020
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/22/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/15/2020
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 09/18/2020
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/22/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

***Federal institutional controls / engineering controls registries***

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/15/2020
Date Data Arrived at EDR: 05/19/2020
Date Made Active in Reports: 06/18/2020
Number of Days to Update: 30

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 11/05/2020
Next Scheduled EDR Contact: 02/22/2021
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 02/13/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 11/05/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 02/13/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 05/15/2020
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 11/05/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: Varies

***Federal ERNS list***

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 06/15/2020
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 09/17/2020
Number of Days to Update: 87

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 09/22/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

***State- and tribal - equivalent NPL***

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 07/27/2020
Date Data Arrived at EDR: 07/27/2020
Date Made Active in Reports: 10/08/2020
Number of Days to Update: 73

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/26/2020
Next Scheduled EDR Contact: 02/08/2021
Data Release Frequency: Quarterly

***State- and tribal - equivalent CERCLIS***

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 07/27/2020
Date Data Arrived at EDR: 07/27/2020
Date Made Active in Reports: 10/08/2020
Number of Days to Update: 73

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/26/2020
Next Scheduled EDR Contact: 02/08/2021
Data Release Frequency: Quarterly

***State and tribal landfill and/or solid waste disposal site lists***

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 05/11/2020
Date Data Arrived at EDR: 05/12/2020
Date Made Active in Reports: 07/27/2020
Number of Days to Update: 76

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 11/10/2020
Next Scheduled EDR Contact: 02/22/2021
Data Release Frequency: Quarterly

***State and tribal leaking storage tank lists***

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List
Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)

Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Quarterly

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/14/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/23/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land

A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/29/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 10/23/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/14/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 10/23/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 04/14/2020
Date Data Arrived at EDR: 05/26/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 78
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 10/23/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 04/08/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 10/23/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 04/14/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 10/23/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 04/15/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/23/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 04/08/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 10/23/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: No Update Planned

***State and tribal registered storage tank lists***

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 02/01/2020
Date Data Arrived at EDR: 03/19/2020
Date Made Active in Reports: 06/09/2020
Number of Days to Update: 82
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 10/01/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Varies

MILITARY UST SITES: Military UST Sites (GEOTRACKER)
Military ust sites

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/20/2020
Number of Days to Update: 72
Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Semi-Annually

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases
UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 05/26/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/20/2020
Number of Days to Update: 72
Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69
Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 09/15/2020
Next Scheduled EDR Contact: 12/28/2020
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 04/14/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/13/2020
Number of Days to Update: 85
Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 10/23/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/29/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84
Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 10/23/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 04/08/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84
Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 10/23/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 04/03/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/23/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 04/14/2020
Date Data Arrived at EDR: 05/26/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 78

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 10/23/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 04/08/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 10/23/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/14/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 10/23/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/14/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/23/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

***State and tribal voluntary cleanup sites***

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 09/16/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 07/27/2020
Date Data Arrived at EDR: 07/27/2020
Date Made Active in Reports: 10/08/2020
Number of Days to Update: 73

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/26/2020
Next Scheduled EDR Contact: 02/08/2021
Data Release Frequency: Quarterly

***State and tribal Brownfields sites***

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 06/22/2020
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 09/04/2020
Number of Days to Update: 74

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 09/22/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

**ADDITIONAL ENVIRONMENTAL RECORDS**

***Local Brownfield lists***

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/01/2020
Date Data Arrived at EDR: 06/02/2020
Date Made Active in Reports: 06/09/2020
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/15/2020
Next Scheduled EDR Contact: 12/28/2020
Data Release Frequency: Semi-Annually

***Local Lists of Landfill / Solid Waste Disposal Sites***

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 10/20/2020
Next Scheduled EDR Contact: 02/08/2021
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 05/28/2020
Date Data Arrived at EDR: 05/29/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 75

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 11/05/2020
Next Scheduled EDR Contact: 02/22/2021
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 10/20/2020
Next Scheduled EDR Contact: 02/08/2021
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 10/13/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 10/30/2020
Next Scheduled EDR Contact: 02/08/2021
Data Release Frequency: Varies

***Local Lists of Hazardous waste / Contaminated Sites***

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 03/18/2020
Date Data Arrived at EDR: 03/19/2020
Date Made Active in Reports: 06/09/2020
Number of Days to Update: 82

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/19/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 07/27/2020
Date Data Arrived at EDR: 07/27/2020
Date Made Active in Reports: 10/08/2020
Number of Days to Update: 73

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/26/2020
Next Scheduled EDR Contact: 02/08/2021
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 06/30/2019
Date Data Arrived at EDR: 05/28/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 11/03/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 07/20/2020
Date Data Arrived at EDR: 07/21/2020
Date Made Active in Reports: 10/07/2020
Number of Days to Update: 78

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 10/19/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Quarterly

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 03/18/2020
Date Data Arrived at EDR: 03/19/2020
Date Made Active in Reports: 06/09/2020
Number of Days to Update: 82

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/19/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: Quarterly

PFAS: PFAS Contamination Site Location Listing

A listing of PFAS contaminated sites included in the GeoTracker database.

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

***Local Lists of Registered Storage Tanks***

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 05/20/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/06/2020
Number of Days to Update: 78

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 08/17/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing
Aboveground storage tank sites

Date of Government Version: 08/03/2020
Date Data Arrived at EDR: 08/05/2020
Date Made Active in Reports: 10/22/2020
Number of Days to Update: 78

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 10/28/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Varies

CERS TANKS: California Environmental Reporting System (CERS) Tanks
List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 07/20/2020
Date Data Arrived at EDR: 07/21/2020
Date Made Active in Reports: 10/07/2020
Number of Days to Update: 78

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 10/19/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Quarterly

CA FID UST: Facility Inventory Database
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

***Local Land Records***

LIENS: Environmental Liens Listing
A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 05/28/2020
Date Data Arrived at EDR: 05/29/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 75

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/25/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 07/29/2020
Date Data Arrived at EDR: 08/03/2020
Date Made Active in Reports: 08/25/2020
Number of Days to Update: 22

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 11/05/2020
Next Scheduled EDR Contact: 01/11/2021
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 06/01/2020
Date Data Arrived at EDR: 06/02/2020
Date Made Active in Reports: 08/14/2020
Number of Days to Update: 73

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 08/31/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Semi-Annually

***Records of Emergency Release Reports***

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 06/22/2020
Date Data Arrived at EDR: 06/23/2020
Date Made Active in Reports: 09/17/2020
Number of Days to Update: 86

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 09/22/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 06/30/2020
Date Data Arrived at EDR: 07/21/2020
Date Made Active in Reports: 10/07/2020
Number of Days to Update: 78

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 10/19/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

***Other Ascertainable Records***

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 06/15/2020
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 09/18/2020
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/22/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 08/05/2020
Date Data Arrived at EDR: 08/13/2020
Date Made Active in Reports: 10/21/2020
Number of Days to Update: 69

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 08/13/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 10/13/2020
Next Scheduled EDR Contact: 01/25/2021
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 574

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 10/08/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 11/09/2020
Next Scheduled EDR Contact: 02/22/2021
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 06/15/2020
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 09/10/2020
Number of Days to Update: 80

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 09/22/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 11/02/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 11/06/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/17/2020
Date Made Active in Reports: 09/10/2020
Number of Days to Update: 85

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 09/18/2020
Next Scheduled EDR Contact: 12/28/2020
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 08/14/2020
Date Made Active in Reports: 11/04/2020
Number of Days to Update: 82
Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 08/14/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 07/20/2020
Date Data Arrived at EDR: 07/21/2020
Date Made Active in Reports: 10/08/2020
Number of Days to Update: 79
Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 10/19/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 07/29/2020
Date Data Arrived at EDR: 08/03/2020
Date Made Active in Reports: 08/25/2020
Number of Days to Update: 22
Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 11/05/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 07/24/2020
Date Data Arrived at EDR: 08/03/2020
Date Made Active in Reports: 10/21/2020
Number of Days to Update: 79
Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 10/14/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35
Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 06/09/2020
Number of Days to Update: 34

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 11/05/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Quarterly

PADS: PCB Activity Database System
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 10/09/2019
Date Data Arrived at EDR: 10/11/2019
Date Made Active in Reports: 12/20/2019
Number of Days to Update: 70

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 10/02/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System
The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 10/01/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/05/2020
Date Data Arrived at EDR: 08/10/2020
Date Made Active in Reports: 10/08/2020
Number of Days to Update: 59

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 10/13/2020
Next Scheduled EDR Contact: 01/31/2021
Data Release Frequency: Quarterly

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 01/15/2020
Number of Days to Update: 42
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 09/04/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 01/12/2017
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 251
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 08/31/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019
Date Data Arrived at EDR: 11/06/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 96
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 11/06/2021
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/01/2019
Date Data Arrived at EDR: 07/01/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 84
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 09/24/2020
Next Scheduled EDR Contact: 01/11/2021
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/02/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/17/2020
Number of Days to Update: 80

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 10/27/2020
Next Scheduled EDR Contact: 02/08/2021
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 06/30/2020
Date Data Arrived at EDR: 07/15/2020
Date Made Active in Reports: 07/21/2020
Number of Days to Update: 6

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 10/01/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 09/22/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 10/06/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 08/08/2017
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 11/06/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 08/30/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 74

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 08/21/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 07/29/2020
Date Data Arrived at EDR: 08/03/2020
Date Made Active in Reports: 08/25/2020
Number of Days to Update: 22

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 11/05/2020
Next Scheduled EDR Contact: 01/11/2021
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 05/01/2020
Date Data Arrived at EDR: 05/21/2020
Date Made Active in Reports: 08/13/2020
Number of Days to Update: 84

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 08/25/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: Semi-Annually

MINES VIOLATIONS: MSHA Violation Assessment Data

Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 05/28/2020
Date Data Arrived at EDR: 05/28/2020
Date Made Active in Reports: 08/13/2020
Number of Days to Update: 77

Source: DOL, Mine Safety & Health Admi
Telephone: 202-693-9424
Last EDR Contact: 09/10/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Quarterly

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 05/06/2020
Date Data Arrived at EDR: 05/27/2020
Date Made Active in Reports: 08/13/2020
Number of Days to Update: 78

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 08/28/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 08/28/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 06/22/2020
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 09/10/2020
Number of Days to Update: 80

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 09/16/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 02/03/2020
Date Data Arrived at EDR: 03/03/2020
Date Made Active in Reports: 05/28/2020
Number of Days to Update: 86

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 09/15/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 06/27/2020
Date Data Arrived at EDR: 07/02/2020
Date Made Active in Reports: 09/28/2020
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 10/06/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites
A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 07/02/2020
Date Made Active in Reports: 09/17/2020
Number of Days to Update: 77
Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 10/08/2020
Next Scheduled EDR Contact: 01/25/2021
Data Release Frequency: Varies

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 07/26/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 71
Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 08/19/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 08/17/2020
Date Data Arrived at EDR: 08/17/2020
Date Made Active in Reports: 10/21/2020
Number of Days to Update: 65
Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 08/17/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6
Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 06/22/2020
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 09/04/2020
Number of Days to Update: 74
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 09/23/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing
list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 05/01/2019
Date Data Arrived at EDR: 05/14/2019
Date Made Active in Reports: 07/17/2019
Number of Days to Update: 64
Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 08/14/2020
Next Scheduled EDR Contact: 11/23/2020
Data Release Frequency: Varies

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 05/28/2020
Date Data Arrived at EDR: 05/29/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 75

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 08/25/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 06/04/2020
Date Data Arrived at EDR: 06/05/2020
Date Made Active in Reports: 08/17/2020
Number of Days to Update: 73

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 08/24/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Annually

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing

A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 08/19/2020
Date Data Arrived at EDR: 08/21/2020
Date Made Active in Reports: 09/04/2020
Number of Days to Update: 14

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 08/17/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: Varies

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 06/16/2020
Date Made Active in Reports: 08/28/2020
Number of Days to Update: 73

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 09/18/2020
Next Scheduled EDR Contact: 12/28/2020
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 07/20/2020
Date Data Arrived at EDR: 07/21/2020
Date Made Active in Reports: 10/07/2020
Number of Days to Update: 78

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 10/19/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 07/13/2020
Date Data Arrived at EDR: 07/16/2020
Date Made Active in Reports: 09/29/2020
Number of Days to Update: 75

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 10/13/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 08/05/2020
Date Data Arrived at EDR: 08/05/2020
Date Made Active in Reports: 10/23/2020
Number of Days to Update: 79

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 11/04/2020
Next Scheduled EDR Contact: 02/22/2021
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 04/15/2020
Date Made Active in Reports: 07/02/2020
Number of Days to Update: 78

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 10/05/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 08/17/2020
Date Data Arrived at EDR: 08/17/2020
Date Made Active in Reports: 11/05/2020
Number of Days to Update: 80

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 08/17/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 08/17/2020
Date Data Arrived at EDR: 08/17/2020
Date Made Active in Reports: 11/05/2020
Number of Days to Update: 80

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/17/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 07/06/2020
Date Data Arrived at EDR: 07/07/2020
Date Made Active in Reports: 09/17/2020
Number of Days to Update: 72

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 10/06/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71
Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 05/28/2020
Date Data Arrived at EDR: 06/02/2020
Date Made Active in Reports: 08/14/2020
Number of Days to Update: 73
Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 08/31/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 08/10/2020
Date Data Arrived at EDR: 08/10/2020
Date Made Active in Reports: 10/29/2020
Number of Days to Update: 80
Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 11/09/2020
Next Scheduled EDR Contact: 02/22/2021
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 06/01/2020
Date Data Arrived at EDR: 06/02/2020
Date Made Active in Reports: 08/14/2020
Number of Days to Update: 73
Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 08/31/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 08/21/2020
Date Data Arrived at EDR: 08/21/2020
Date Made Active in Reports: 08/27/2020
Number of Days to Update: 6
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 08/20/2020
Next Scheduled EDR Contact: 12/28/2020
Data Release Frequency: No Update Planned

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 06/06/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/20/2020
Number of Days to Update: 72
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71
Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 11/19/2019
Date Data Arrived at EDR: 01/07/2020
Date Made Active in Reports: 03/09/2020
Number of Days to Update: 62
Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 10/09/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9
Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 08/11/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: No Update Planned

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 09/16/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: No Update Planned

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)
Projects sites

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

WDR: Waste Discharge Requirements Listing

In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/20/2020
Number of Days to Update: 72

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Quarterly

CIWQS: California Integrated Water Quality System

The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 06/01/2020
Date Data Arrived at EDR: 06/02/2020
Date Made Active in Reports: 08/14/2020
Number of Days to Update: 73

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 08/31/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data

The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 07/20/2020
Date Data Arrived at EDR: 07/21/2020
Date Made Active in Reports: 10/07/2020
Number of Days to Update: 78

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 10/19/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)
Produced water ponds sites

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)
Sampling point - public sites

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)
Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/19/2020
Number of Days to Update: 71

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Varies

PCS: Permit Compliance System
PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 07/14/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 55

Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 10/02/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Semi-Annually

HWTS: Hazardous Waste Tracking System
DTSC maintains the Hazardous Waste Tracking System that stores ID number information since the early 1980s and manifest data since 1993. The system collects both manifest copies from the generator and destination facility.

Date of Government Version: 10/13/2020
Date Data Arrived at EDR: 10/14/2020
Date Made Active in Reports: 11/03/2020
Number of Days to Update: 20

Source: Department of Toxic Substances Control
Telephone: 916-324-2444
Last EDR Contact: 10/01/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Varies

MINES MRDS: Mineral Resources Data System
Mineral Resources Data System

Date of Government Version: 04/06/2018
Date Data Arrived at EDR: 10/21/2019
Date Made Active in Reports: 10/24/2019
Number of Days to Update: 3

Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 08/28/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: Varies

PCS INACTIVE: Listing of Inactive PCS Permits
An inactive permit is a facility that has shut down or is no longer discharging.

Date of Government Version: 11/05/2014
Date Data Arrived at EDR: 01/06/2015
Date Made Active in Reports: 05/06/2015
Number of Days to Update: 120
Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 10/02/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Semi-Annually

PCS ENF: Enforcement data
No description is available for this data

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/06/2015
Number of Days to Update: 29
Source: EPA
Telephone: 202-564-2497
Last EDR Contact: 10/02/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Varies

**EDR HIGH RISK HISTORICAL RECORDS**

***EDR Exclusive Records***

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A
Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A
Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners
EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

**EDR RECOVERED GOVERNMENT ARCHIVES**

***Exclusive Recovered Govt. Archives***

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

**COUNTY RECORDS**

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/09/2019
Date Data Arrived at EDR: 01/11/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 53

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 10/01/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 06/30/2020
Date Data Arrived at EDR: 07/01/2020
Date Made Active in Reports: 07/17/2020
Number of Days to Update: 16

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 10/01/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List
Cupa Facility List

Date of Government Version: 05/18/2020
Date Data Arrived at EDR: 05/19/2020
Date Made Active in Reports: 06/01/2020
Number of Days to Update: 13

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 10/19/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA BUTTE: CUPA Facility Listing
Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 10/01/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 06/17/2020
Date Data Arrived at EDR: 06/18/2020
Date Made Active in Reports: 09/02/2020
Number of Days to Update: 76

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 10/01/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/06/2020
Date Data Arrived at EDR: 04/23/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 78

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 10/28/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 07/16/2020
Date Data Arrived at EDR: 07/22/2020
Date Made Active in Reports: 10/08/2020
Number of Days to Update: 78

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 10/20/2020
Next Scheduled EDR Contact: 02/08/2021
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 08/13/2020
Date Made Active in Reports: 10/22/2020
Number of Days to Update: 70

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 10/20/2020
Next Scheduled EDR Contact: 02/08/2021
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 08/13/2020
Date Data Arrived at EDR: 08/13/2020
Date Made Active in Reports: 10/22/2020
Number of Days to Update: 70

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 10/20/2020
Next Scheduled EDR Contact: 02/08/2021
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 06/30/2020
Date Data Arrived at EDR: 07/01/2020
Date Made Active in Reports: 09/17/2020
Number of Days to Update: 78

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 10/02/2020
Next Scheduled EDR Contact: 01/11/2021
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 10/13/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: No Update Planned

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 08/13/2020
Date Data Arrived at EDR: 08/17/2020
Date Made Active in Reports: 11/05/2020
Number of Days to Update: 80

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 08/11/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 07/14/2020
Date Data Arrived at EDR: 07/16/2020
Date Made Active in Reports: 09/29/2020
Number of Days to Update: 75

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 10/13/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INYO COUNTY:

CUPA INYO: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 08/11/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Varies

KERN COUNTY:

CUPA KERN: CUPA Facility List
A listing of sites included in the Kern County Hazardous Material Business Plan.

Date of Government Version: 07/28/2020
Date Data Arrived at EDR: 07/30/2020
Date Made Active in Reports: 10/13/2020
Number of Days to Update: 75

Source: Kern County Public Health
Telephone: 661-321-3000
Last EDR Contact: 10/28/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Varies

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 07/28/2020
Date Data Arrived at EDR: 07/30/2020
Date Made Active in Reports: 10/14/2020
Number of Days to Update: 76

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 10/28/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 05/11/2020
Date Data Arrived at EDR: 05/12/2020
Date Made Active in Reports: 07/27/2020
Number of Days to Update: 76

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 08/21/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 08/13/2020
Date Data Arrived at EDR: 08/13/2020
Date Made Active in Reports: 10/23/2020
Number of Days to Update: 71

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 10/07/2020
Next Scheduled EDR Contact: 01/25/2021
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 07/31/2020
Date Data Arrived at EDR: 08/21/2020
Date Made Active in Reports: 11/09/2020
Number of Days to Update: 80

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 10/13/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: Key Areas of Concerns in Los Angeles County
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office. Date of Government Version: 3/30/2009 Exide Site area is a cleanup plan of lead-impacted soil surrounding the former Exide Facility as designated by the DTSC. Date of Government Version: 7/17/2017

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: N/A
Telephone: N/A
Last EDR Contact: 09/10/2020
Next Scheduled EDR Contact: 12/28/2020
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 07/06/2020
Date Data Arrived at EDR: 07/10/2020
Date Made Active in Reports: 09/28/2020
Number of Days to Update: 80

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 10/01/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 07/13/2020
Date Data Arrived at EDR: 07/13/2020
Date Made Active in Reports: 09/29/2020
Number of Days to Update: 78

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 10/09/2020
Next Scheduled EDR Contact: 01/25/2021
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 08/17/2020
Date Made Active in Reports: 11/05/2020
Number of Days to Update: 80

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 10/07/2020
Next Scheduled EDR Contact: 01/25/2021
Data Release Frequency: Varies

LOS ANGELES AST: Active & Inactive AST Inventory
A listing of active & inactive above ground petroleum storage tank site locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58
Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 09/25/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Varies

LOS ANGELES CO LF METHANE: Methane Producing Landfills
This data was created on April 30, 2012 to represent known disposal sites in Los Angeles County that may produce and emanate methane gas. The shapefile contains disposal sites within Los Angeles County that once accepted degradable refuse material. Information used to create this data was extracted from a landfill survey performed by County Engineers (Major Waste System Map, 1973) as well as historical records from CalRecycle, Regional Water Quality Control Board, and Los Angeles County Department of Public Health

Date of Government Version: 04/30/2012
Date Data Arrived at EDR: 04/17/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 42
Source: Los Angeles County Department of Public Works
Telephone: 626-458-6973
Last EDR Contact: 10/12/2020
Next Scheduled EDR Contact: 01/25/2021
Data Release Frequency: No Update Planned

LOS ANGELES HM: Active & Inactive Hazardous Materials Inventory
A listing of active & inactive hazardous materials facility locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58
Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 09/25/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Varies

LOS ANGELES UST: Active & Inactive UST Inventory
A listing of active & inactive underground storage tank site locations and underground storage tank historical sites, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58
Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 09/25/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 03/25/2020
Date Data Arrived at EDR: 04/14/2020
Date Made Active in Reports: 07/01/2020
Number of Days to Update: 78
Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 10/09/2020
Next Scheduled EDR Contact: 01/25/2021
Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21
Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 10/07/2020
Next Scheduled EDR Contact: 01/25/2021
Data Release Frequency: No Update Planned

UST LONG BEACH: City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 04/22/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 65

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 10/13/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 06/27/2019
Date Data Arrived at EDR: 07/30/2019
Date Made Active in Reports: 10/02/2019
Number of Days to Update: 64

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 10/05/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/10/2020
Date Data Arrived at EDR: 08/12/2020
Date Made Active in Reports: 10/23/2020
Number of Days to Update: 72

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 08/04/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 09/23/2020
Next Scheduled EDR Contact: 01/11/2021
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 07/28/2020
Date Data Arrived at EDR: 07/30/2020
Date Made Active in Reports: 07/31/2020
Number of Days to Update: 1

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 07/24/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 08/20/2020
Date Data Arrived at EDR: 08/24/2020
Date Made Active in Reports: 11/09/2020
Number of Days to Update: 77

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 08/19/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 07/13/2020
Date Data Arrived at EDR: 07/15/2020
Date Made Active in Reports: 07/31/2020
Number of Days to Update: 16

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 09/23/2020
Next Scheduled EDR Contact: 01/11/2021
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/19/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 09/05/2019
Date Data Arrived at EDR: 09/09/2019
Date Made Active in Reports: 10/31/2019
Number of Days to Update: 52

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/19/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 07/29/2020
Date Data Arrived at EDR: 07/30/2020
Date Made Active in Reports: 10/13/2020
Number of Days to Update: 75

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 10/20/2020
Next Scheduled EDR Contact: 02/08/2021
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 06/10/2020
Date Data Arrived at EDR: 08/03/2020
Date Made Active in Reports: 10/19/2020
Number of Days to Update: 77

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/02/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 07/02/2020
Date Data Arrived at EDR: 08/05/2020
Date Made Active in Reports: 10/23/2020
Number of Days to Update: 79

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/02/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 07/01/2020
Date Data Arrived at EDR: 08/03/2020
Date Made Active in Reports: 10/19/2020
Number of Days to Update: 77

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/03/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 06/08/2020
Date Data Arrived at EDR: 06/10/2020
Date Made Active in Reports: 08/24/2020
Number of Days to Update: 75

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 08/25/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 03/31/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/26/2019
Number of Days to Update: 64

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 10/13/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

RIVERSIDE COUNTY:

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 10/06/2020
Date Data Arrived at EDR: 10/07/2020
Date Made Active in Reports: 11/03/2020
Number of Days to Update: 27

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/15/2020
Next Scheduled EDR Contact: 12/28/2020
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 10/06/2020
Date Data Arrived at EDR: 10/07/2020
Date Made Active in Reports: 11/03/2020
Number of Days to Update: 27
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/10/2020
Next Scheduled EDR Contact: 12/28/2020
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 02/18/2020
Date Data Arrived at EDR: 03/31/2020
Date Made Active in Reports: 06/15/2020
Number of Days to Update: 76
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/02/2020
Next Scheduled EDR Contact: 01/11/2021
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 02/24/2020
Date Data Arrived at EDR: 03/31/2020
Date Made Active in Reports: 06/17/2020
Number of Days to Update: 78
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/02/2020
Next Scheduled EDR Contact: 01/11/2021
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List
Cupa facility list

Date of Government Version: 08/04/2020
Date Data Arrived at EDR: 08/05/2020
Date Made Active in Reports: 10/22/2020
Number of Days to Update: 78
Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 10/28/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 08/04/2020
Date Data Arrived at EDR: 08/05/2020
Date Made Active in Reports: 10/26/2020
Number of Days to Update: 82
Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 10/28/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

HMMD SAN DIEGO: Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 06/01/2020
Date Data Arrived at EDR: 06/02/2020
Date Made Active in Reports: 08/14/2020
Number of Days to Update: 73

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 08/31/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 04/18/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 56

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 11/05/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing

A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 07/14/2020
Date Data Arrived at EDR: 07/16/2020
Date Made Active in Reports: 09/29/2020
Number of Days to Update: 75

Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 10/13/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

SAN DIEGO CO SAM: Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 08/25/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

CUPA SAN FRANCISCO CO: CUPA Facility Listing

Cupa facilities

Date of Government Version: 08/03/2020
Date Data Arrived at EDR: 08/05/2020
Date Made Active in Reports: 10/22/2020
Number of Days to Update: 78

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 10/28/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Varies

LUST SAN FRANCISCO: Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 10/28/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: No Update Planned

UST SAN FRANCISCO: Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 08/03/2020
Date Data Arrived at EDR: 08/05/2020
Date Made Active in Reports: 10/26/2020
Number of Days to Update: 82

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 10/28/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 09/10/2020
Next Scheduled EDR Contact: 12/28/2020
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 07/27/2020
Date Data Arrived at EDR: 08/12/2020
Date Made Active in Reports: 10/26/2020
Number of Days to Update: 75

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 08/11/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Varies

SAN MATEO COUNTY:

BI SAN MATEO: Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 02/20/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 64

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/11/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/29/2019
Date Data Arrived at EDR: 03/29/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 61

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/01/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA SANTA BARBARA: CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 08/11/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: No Update Planned

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 08/20/2020
Date Data Arrived at EDR: 08/20/2020
Date Made Active in Reports: 11/09/2020
Number of Days to Update: 81

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 08/11/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 08/19/2020
Next Scheduled EDR Contact: 12/07/2020
Data Release Frequency: No Update Planned

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 07/30/2020
Date Data Arrived at EDR: 07/31/2020
Date Made Active in Reports: 10/16/2020
Number of Days to Update: 77

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 10/28/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 08/11/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 08/11/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 08/13/2019
Number of Days to Update: 68

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 08/25/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 08/25/2020
Date Data Arrived at EDR: 08/26/2020
Date Made Active in Reports: 09/16/2020
Number of Days to Update: 21

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 08/25/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 07/07/2020
Date Data Arrived at EDR: 07/08/2020
Date Made Active in Reports: 09/25/2020
Number of Days to Update: 79

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 09/16/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 07/01/2020
Date Data Arrived at EDR: 07/02/2020
Date Made Active in Reports: 09/17/2020
Number of Days to Update: 77

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 09/16/2020
Next Scheduled EDR Contact: 01/04/2021
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 02/04/2020
Date Data Arrived at EDR: 02/05/2020
Date Made Active in Reports: 04/15/2020
Number of Days to Update: 70

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 10/02/2020
Next Scheduled EDR Contact: 01/25/2021
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 05/26/2020
Date Data Arrived at EDR: 05/28/2020
Date Made Active in Reports: 08/13/2020
Number of Days to Update: 77

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 08/25/2020
Next Scheduled EDR Contact: 12/14/2020
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 08/11/2020
Date Data Arrived at EDR: 08/12/2020
Date Made Active in Reports: 10/26/2020
Number of Days to Update: 75

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 10/28/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 07/14/2020
Date Data Arrived at EDR: 07/16/2020
Date Made Active in Reports: 09/29/2020
Number of Days to Update: 75

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 10/13/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 08/06/2020
Date Data Arrived at EDR: 08/06/2020
Date Made Active in Reports: 10/26/2020
Number of Days to Update: 81

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 10/28/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 10/13/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

VENTURA COUNTY:

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 07/10/2020
Date Data Arrived at EDR: 07/22/2020
Date Made Active in Reports: 10/08/2020
Number of Days to Update: 78

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 10/19/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/23/2020
Next Scheduled EDR Contact: 01/11/2021
Data Release Frequency: No Update Planned

LUST VENTURA: Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 11/05/2020
Next Scheduled EDR Contact: 02/22/2021
Data Release Frequency: No Update Planned

MED WASTE VENTURA: Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 07/10/2020
Date Data Arrived at EDR: 07/22/2020
Date Made Active in Reports: 10/07/2020
Number of Days to Update: 77

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 10/19/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 05/26/2020
Date Data Arrived at EDR: 06/09/2020
Date Made Active in Reports: 08/20/2020
Number of Days to Update: 72

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/08/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 06/23/2020
Date Data Arrived at EDR: 06/29/2020
Date Made Active in Reports: 09/15/2020
Number of Days to Update: 78

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 10/07/2020
Next Scheduled EDR Contact: 01/11/2021
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 08/06/2020
Date Data Arrived at EDR: 08/07/2020
Date Made Active in Reports: 10/26/2020
Number of Days to Update: 80

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 11/03/2020
Next Scheduled EDR Contact: 02/08/2021
Data Release Frequency: Varies

**OTHER DATABASE(S)**

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 08/10/2020
Date Data Arrived at EDR: 10/20/2020
Date Made Active in Reports: 11/02/2020
Number of Days to Update: 13

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 11/09/2020
Next Scheduled EDR Contact: 02/22/2021
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 10/09/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 04/29/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 72

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 10/30/2020
Next Scheduled EDR Contact: 02/08/2021
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 10/07/2020
Next Scheduled EDR Contact: 01/25/2021
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 10/02/2019
Date Made Active in Reports: 12/10/2019
Number of Days to Update: 69

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 08/11/2020
Next Scheduled EDR Contact: 11/30/2020
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/02/2020
Next Scheduled EDR Contact: 12/21/2020
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: Endeavor Business Media
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data
Source: Endeavor Business Media
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

**STREET AND ADDRESS INFORMATION**

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# GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

**TARGET PROPERTY ADDRESS**

HAT RANCH
9701 SEDAN AVENUE
MANTECA, CA 95337

**TARGET PROPERTY COORDINATES**

| | |
|---|---|
| Latitude (North): | 37.764518 - 37° 45' 52.26'' |
| Longitude (West): | 121.194904 - 121° 11' 41.65'' |
| Universal Tranverse Mercator: | Zone 10 |
| UTM X (Meters): | 658998.6 |
| UTM Y (Meters): | 4181017.5 |
| Elevation: | 46 ft. above sea level |

**USGS TOPOGRAPHIC MAP**

| | |
|---|---|
| Target Property Map: | 5640398 MANTECA, CA |
| Version Date: | 2012 |
| | |
| South Map: | 5640090 RIPON, CA |
| Version Date: | 2012 |

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**GROUNDWATER FLOW DIRECTION INFORMATION**

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

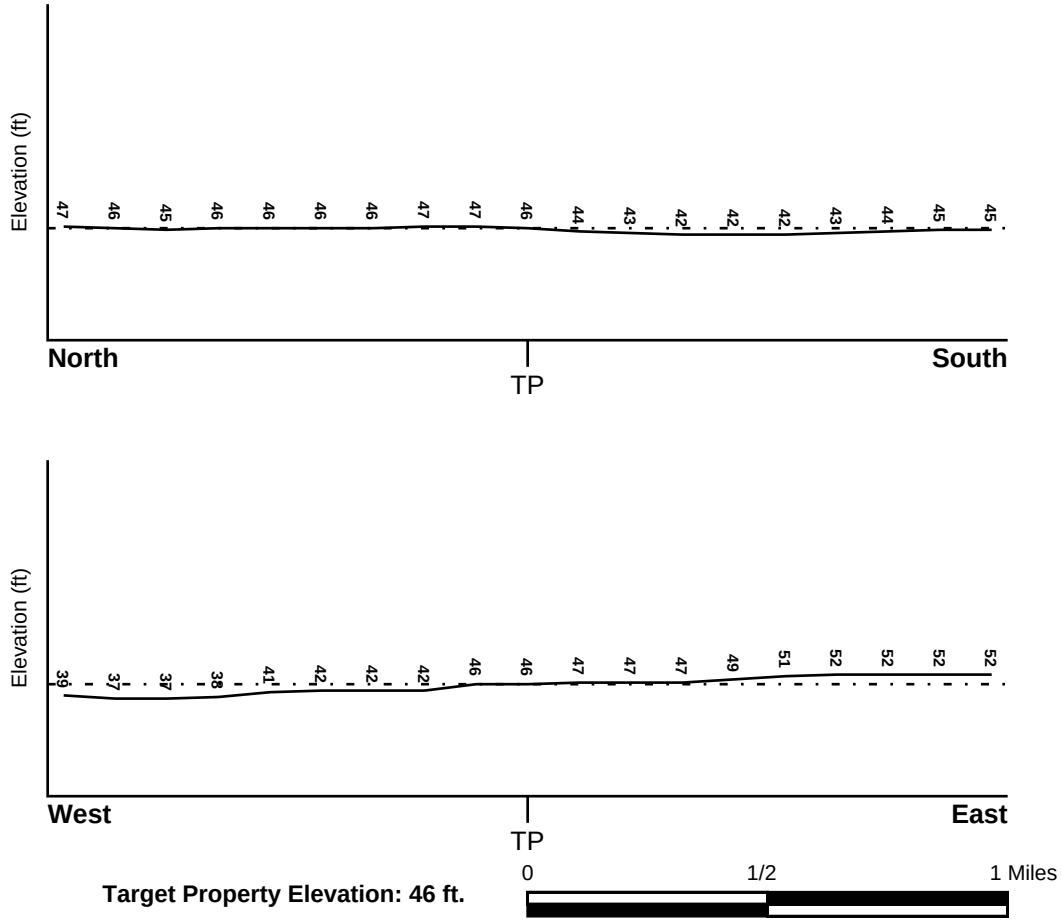
**TOPOGRAPHIC INFORMATION**

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

**TARGET PROPERTY TOPOGRAPHY**

General Topographic Gradient: General SW

**SURROUNDING TOPOGRAPHY: ELEVATION PROFILES**




**Target Property Elevation: 46 ft.**

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

### FEMA FLOOD ZONE

| Flood Plain Panel at Target Property | FEMA Source Type |
|---|---|
| 06077C0640F | FEMA FIRM Flood data |

| Additional Panels in search area: | FEMA Source Type |
|---|---|
| 0602990620A | FEMA Q3 Flood data |
| 06077C0780F | FEMA FIRM Flood data |

### NATIONAL WETLAND INVENTORY

| NWI Quad at Target Property | NWI Electronic Data Coverage |
|---|---|
| MANTECA | YES - refer to the Overview Map and Detail Map |

## HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

***Site-Specific Hydrogeological Data*:***

| | |
|---|---|
| Search Radius: | 1.25 miles |
| Status: | Not found |

## AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

| MAP ID | LOCATION FROM TP | GENERAL DIRECTION GROUNDWATER FLOW |
|---|---|---|
| Not Reported | | |

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**GROUNDWATER FLOW VELOCITY INFORMATION**

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

**GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY**

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

**ROCK STRATIGRAPHIC UNIT**

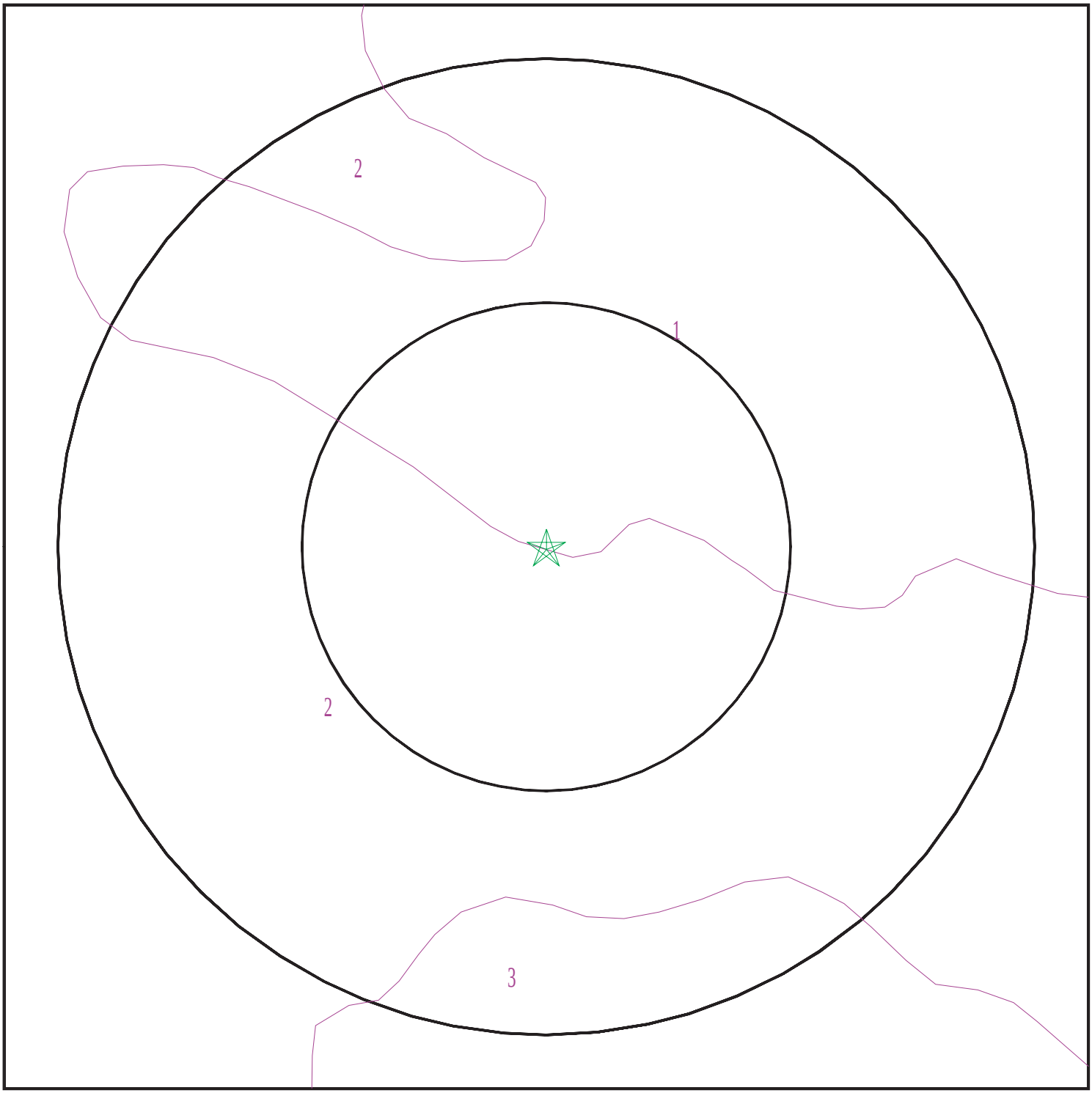
| | |
|---|---|
| Era: | Cenozoic |
| System: | Quaternary |
| Series: | Quaternary |
| Code: | Q *(decoded above as Era, System & Series)* |

**GEOLOGIC AGE IDENTIFICATION**

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

# SSURGO SOIL MAP - 6262441.2s




Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

| | | | |
|---|---|---|---|
| SITE NAME: | Hat Ranch | CLIENT: | Engeo |
| ADDRESS: | 9701 Sedan Avenue<br>Manteca CA 95337 | CONTACT: | Cody Johnson |
| | | INQUIRY #: | 6262441.2s |
| LAT/LONG: | 37.764518 / 121.194904 | DATE: | November 11, 2020 1:16 pm |

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# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY**

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

---

**Soil Map ID: 1**

Soil Component Name: DELHI

Soil Surface Texture: fine sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

| Soil Layer Information | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | Soil Reaction (pH) |
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | |
| 1 | 0 inches | 9 inches | fine sand | Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand. | COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand. | Max: 141<br>Min: 42 | Max: 7.8<br>Min: 6.1 |
| 2 | 9 inches | 59 inches | fine sand | Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand. | COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand. | Max: 141<br>Min: 42 | Max: 7.8<br>Min: 6.1 |

**Soil Map ID: 2**

Soil Component Name: DELHI

Soil Surface Texture: loamy sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

| Soil Layer Information | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | Soil Reaction (pH) |
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | |
| 1 | 0 inches | 16 inches | loamy sand | Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand. | COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand. | Max: 141<br>Min: 42 | Max: 7.8<br>Min: 6.1 |
| 2 | 16 inches | 25 inches | loamy sand | Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand. | COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand. | Max: 141<br>Min: 42 | Max: 7.8<br>Min: 6.1 |
| 3 | 25 inches | 59 inches | sand | Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand. | COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand. | Max: 141<br>Min: 42 | Max: 7.8<br>Min: 6.1 |

**Soil Map ID: 3**

Soil Component Name: TINNIN

Soil Surface Texture: loamy coarse sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Well drained

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

| Soil Layer Information | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | Soil Reaction (pH) |
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | |
| 1 | 0 inches | 27 inches | loamy coarse sand | Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand. | COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand. | Max: 141<br>Min: 42 | Max: 8.4<br>Min: 6.6 |
| 2 | 27 inches | 53 inches | loamy coarse sand | Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand. | COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand. | Max: 141<br>Min: 42 | Max: 8.4<br>Min: 6.6 |
| 3 | 53 inches | 74 inches | loamy coarse sand | Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand. | COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand. | Max: 141<br>Min: 42 | Max: 8.4<br>Min: 6.6 |

## LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

## WELL SEARCH DISTANCE INFORMATION

| DATABASE | SEARCH DISTANCE (miles) |
|---|---|
| Federal USGS | 1.000 |
| Federal FRDS PWS | Nearest PWS within 1 mile |
| State Database | 1.000 |

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**FEDERAL USGS WELL INFORMATION**

| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|
| A5 | USGS40000185406 | 1/2 - 1 Mile SE |
| 11 | USGS40000185532 | 1/2 - 1 Mile North |
| 16 | USGS40000185423 | 1/2 - 1 Mile ESE |

**FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION**

| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|

No PWS System Found

Note: PWS System location is not always the same as well location.

**STATE DATABASE WELL INFORMATION**

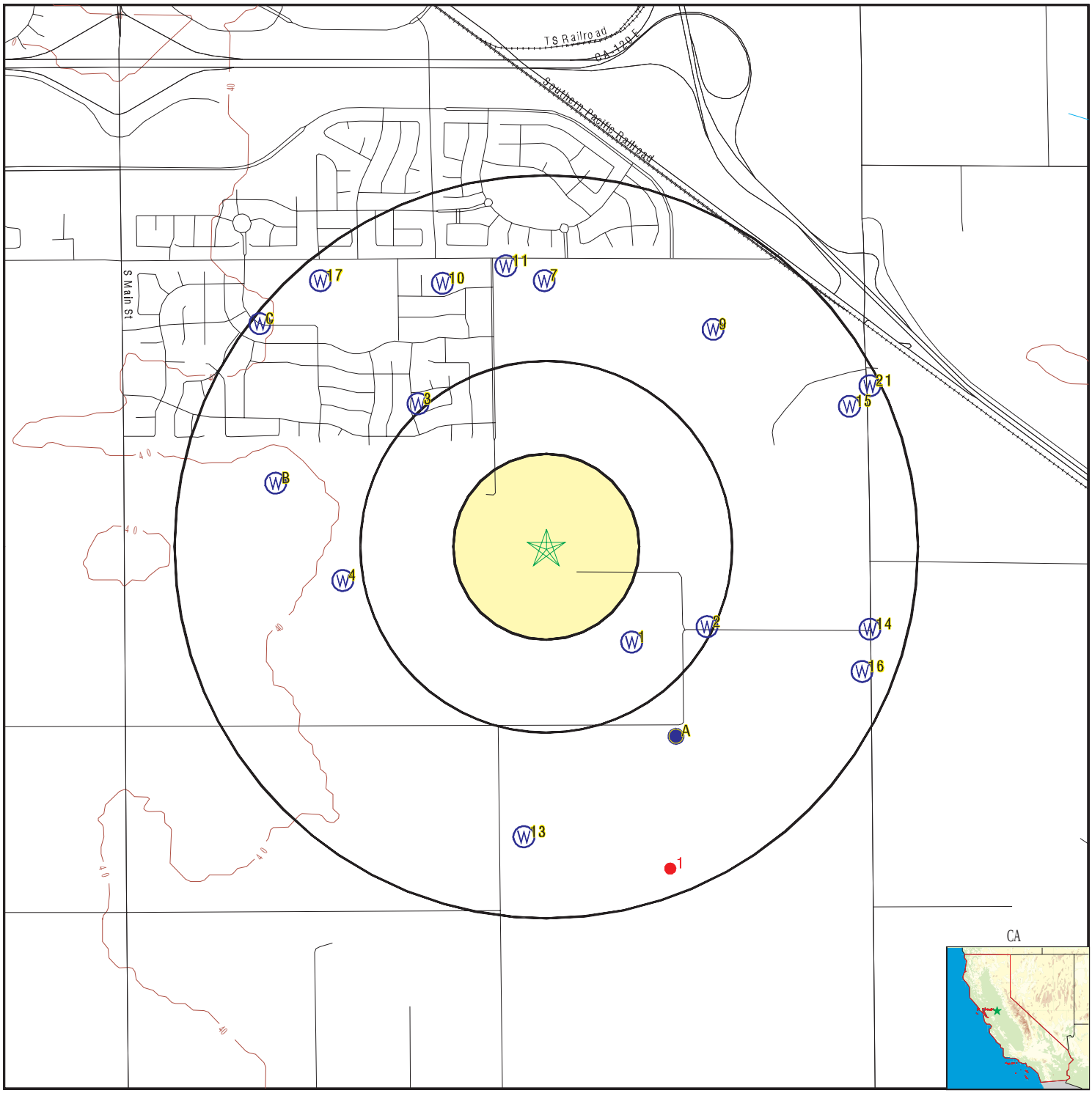
| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|
| 1 | CADPR0000001754 | 1/4 - 1/2 Mile SE |
| 2 | CADPR0000000928 | 1/4 - 1/2 Mile ESE |
| 3 | CADPR0000003125 | 1/2 - 1 Mile NW |
| 4 | CADPR0000003108 | 1/2 - 1 Mile West |
| A6 | CAUSGSN00014027 | 1/2 - 1 Mile SE |
| 7 | CADWR8000036332 | 1/2 - 1 Mile North |
| B8 | CADPR0000003149 | 1/2 - 1 Mile WNW |
| 9 | CADPR0000002437 | 1/2 - 1 Mile NE |
| 10 | CADWR0000004651 | 1/2 - 1 Mile NNW |
| B12 | CADPR0000000568 | 1/2 - 1 Mile WNW |
| 13 | CADWR0000001089 | 1/2 - 1 Mile South |
| 14 | CADWR8000036292 | 1/2 - 1 Mile ESE |
| 15 | CADDW0000021338 | 1/2 - 1 Mile ENE |
| 17 | CADPR0000003751 | 1/2 - 1 Mile NW |
| C18 | CADDW0000005290 | 1/2 - 1 Mile NW |
| C19 | CAUSGSN00002369 | 1/2 - 1 Mile NW |
| C20 | CAUSGS000001130 | 1/2 - 1 Mile NW |
| 21 | CADWR8000036315 | 1/2 - 1 Mile ENE |
| C22 | CAEDF0000026993 | 1/2 - 1 Mile NW |

**OTHER STATE DATABASE INFORMATION**

**STATE OIL/GAS WELL INFORMATION**

| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|
| 1 | CAOG13000008407 | 1/2 - 1 Mile SSE |

# PHYSICAL SETTING SOURCE MAP - 6262441.2s




- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

| | | | |
|---|---|---|---|
| SITE NAME: | Hat Ranch | CLIENT: | Engeo |
| ADDRESS: | 9701 Sedan Avenue<br>Manteca CA 95337 | CONTACT: | Cody Johnson |
| | | INQUIRY #: | 6262441.2s |
| LAT/LONG: | 37.764518 / 121.194904 | DATE: | November 11, 2020 1:16 pm |

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# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

**1**
**SE**
**1/4 - 1/2 Mile**
**Lower**

**CA WELLS** **CADPR0000001754**

| | | | |
|---|---|---|---|
| Well ID: | 97530 | Well Type: | UNK |
| Source: | Department of Pesticide Regulation | | |
| Other Name: | 97530 | PFAS Found: | No |
| Groundwater Quality Data: | https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DPR&samp_date=&global_id=&assigned_name=97530&store_num= | | |
| GeoTracker Data: | Not Reported | | |

---

**2**
**ESE**
**1/4 - 1/2 Mile**
**Higher**

**CA WELLS** **CADPR0000000928**

| | | | |
|---|---|---|---|
| Well ID: | 81613 | Well Type: | UNK |
| Source: | Department of Pesticide Regulation | | |
| Other Name: | 81613 | PFAS Found: | No |
| Groundwater Quality Data: | https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DPR&samp_date=&global_id=&assigned_name=81613&store_num= | | |
| GeoTracker Data: | Not Reported | | |

---

**3**
**NW**
**1/2 - 1 Mile**
**Lower**

**CA WELLS** **CADPR0000003125**

| | | | |
|---|---|---|---|
| Well ID: | 81607 | Well Type: | UNK |
| Source: | Department of Pesticide Regulation | | |
| Other Name: | 81607 | PFAS Found: | No |
| Groundwater Quality Data: | https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DPR&samp_date=&global_id=&assigned_name=81607&store_num= | | |
| GeoTracker Data: | Not Reported | | |

---

**4**
**West**
**1/2 - 1 Mile**
**Lower**

**CA WELLS** **CADPR0000003108**

| | | | |
|---|---|---|---|
| Well ID: | 81614 | Well Type: | UNK |
| Source: | Department of Pesticide Regulation | | |
| Other Name: | 81614 | PFAS Found: | No |
| Groundwater Quality Data: | https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DPR&samp_date=&global_id=&assigned_name=81614&store_num= | | |
| GeoTracker Data: | Not Reported | | |

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

**A5**
**SE**
**1/2 - 1 Mile**
**Lower**

**FED USGS** **USGS40000185406**

| | | | |
|---|---|---|---|
| Organization ID: | USGS-CA | | |
| Organization Name: | USGS California Water Science Center | | |
| Monitor Location: | 002S007E15P001M | Type: | Well |
| Description: | Not Reported | HUC: | 18040005 |
| Drainage Area: | Not Reported | Drainage Area Units: | Not Reported |
| Contrib Drainage Area: | Not Reported | Contrib Drainage Area Unts: | Not Reported |
| Aquifer: | Central Valley aquifer system | | |
| Formation Type: | Alluvial Fan Deposits | Aquifer Type: | Not Reported |
| Construction Date: | 19760218 | Well Depth: | 100 |
| Well Depth Units: | ft | Well Hole Depth: | 120 |
| Well Hole Depth Units: | ft | | |

| | | | |
|---|---|---|---|
| Ground water levels,Number of Measurements: | 1 | Level reading date: | 1976-02-18 |
| Feet below surface: | 10.00 | Feet to sea level: | Not Reported |
| Note: | Not Reported | | |

---

**A6**
**SE**
**1/2 - 1 Mile**
**Lower**

**CA WELLS** **CAUSGSN00014027**

| | | | |
|---|---|---|---|
| Well ID: | USGS-374526121111501 | Well Type: | UNK |
| Source: | United States Geological Survey | | |
| Other Name: | USGS-374526121111501 | PFAS Found: | No |
| Groundwater Quality Data: | https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=USGSNEW&samp_date=&global_id=&assigned_name=USGS-374526121111501&store_num= | | |
| GeoTracker Data: | Not Reported | | |

---

**7**
**North**
**1/2 - 1 Mile**
**Higher**

**CA WELLS** **CADWR8000036332**

| | | | |
|---|---|---|---|
| State Well #: | 02S07E10M001M | Station ID: | 6908 |
| Well Name: | Not Reported | Well Use: | Unknown |
| Well Type: | Unknown | Well Depth: | 0 |
| Basin Name: | Eastern San Joaquin | Well Completion Rpt #: | Not Reported |

---

**B8**
**WNW**
**1/2 - 1 Mile**
**Lower**

**CA WELLS** **CADPR0000003149**

| | | | |
|---|---|---|---|
| Well ID: | 97531 | Well Type: | UNK |
| Source: | Department of Pesticide Regulation | | |
| Other Name: | 97531 | PFAS Found: | No |
| Groundwater Quality Data: | https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DPR&samp_date=&global_id=&assigned_name=97531&store_num= | | |
| GeoTracker Data: | Not Reported | | |

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

**9**
**NE**
**1/2 - 1 Mile**
**Lower**

**CA WELLS** **CADPR0000002437**

| | | | |
|---|---|---|---|
| Well ID: | 81609 | Well Type: | UNK |
| Source: | Department of Pesticide Regulation | | |
| Other Name: | 81609 | PFAS Found: | No |
| Groundwater Quality Data: | https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DPR&samp_date=&global_id=&assigned_name=81609&store_num= | | |
| GeoTracker Data: | Not Reported | | |

---

**10**
**NNW**
**1/2 - 1 Mile**
**Lower**

**CA WELLS** **CADWR0000004651**

| | | | |
|---|---|---|---|
| Well ID: | 02S07E10E080M | Well Type: | UNK |
| Source: | Department of Water Resources | | |
| Other Name: | 02S07E10E080M | PFAS Found: | No |
| Groundwater Quality Data: | https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=02S07E10E080M&store_num= | | |
| GeoTracker Data: | Not Reported | | |

---

**11**
**North**
**1/2 - 1 Mile**
**Lower**

**FED USGS** **USGS40000185532**

| | | | |
|---|---|---|---|
| Organization ID: | USGS-CA | | |
| Organization Name: | USGS California Water Science Center | | |
| Monitor Location: | 002S007E10M002M | Type: | Well |
| Description: | Not Reported | HUC: | 18040005 |
| Drainage Area: | Not Reported | Drainage Area Units: | Not Reported |
| Contrib Drainage Area: | Not Reported | Contrib Drainage Area Unts: | Not Reported |
| Aquifer: | Central Valley aquifer system | | |
| Formation Type: | Not Reported | Aquifer Type: | Not Reported |
| Construction Date: | 19750513 | Well Depth: | 108 |
| Well Depth Units: | ft | Well Hole Depth: | 110 |
| Well Hole Depth Units: | ft | | |

| | | | |
|---|---|---|---|
| Ground water levels,Number of Measurements: | 1 | Level reading date: | 1975-05-13 |
| Feet below surface: | 13.00 | Feet to sea level: | Not Reported |
| Note: | Not Reported | | |

---

**B12**
**WNW**
**1/2 - 1 Mile**
**Lower**

**CA WELLS** **CADPR0000000568**

| | | | |
|---|---|---|---|
| Well ID: | 97532 | Well Type: | UNK |
| Source: | Department of Pesticide Regulation | | |
| Other Name: | 97532 | PFAS Found: | No |
| Groundwater Quality Data: | https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DPR&samp_date=&global_id=&assigned_name=97532&store_num= | | |

GeoTracker Data: Not Reported

---

**13**
**South**
**1/2 - 1 Mile**
**Lower**

**CA WELLS** **CADWR0000001089**

| | | | |
|---|---|---|---|
| Well ID: | 02S07E15P001M | Well Type: | UNK |
| Source: | Department of Water Resources | | |
| Other Name: | 02S07E15P001M | PFAS Found: | No |
| Groundwater Quality Data: | https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=02S07E15P001M&store_num= | | |
| GeoTracker Data: | Not Reported | | |

---

**14**
**ESE**
**1/2 - 1 Mile**
**Higher**

**CA WELLS** **CADWR8000036292**

| | | | |
|---|---|---|---|
| State Well #: | 02S07E14E001M | Station ID: | 38001 |
| Well Name: | Not Reported | Well Use: | Unknown |
| Well Type: | Unknown | Well Depth: | 0 |
| Basin Name: | Eastern San Joaquin | Well Completion Rpt #: | Not Reported |

---

**15**
**ENE**
**1/2 - 1 Mile**
**Higher**

**CA WELLS** **CADDW0000021338**

| | | | |
|---|---|---|---|
| Well ID: | 3901050-001 | Well Type: | MUNICIPAL |
| Source: | Department of Health Services | | |
| Other Name: | WELL 01 - INACTIVE | PFAS Found: | No |
| Groundwater Quality Data: | https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=3901050-001&store_num= | | |
| GeoTracker Data: | Not Reported | | |

---

**16**
**ESE**
**1/2 - 1 Mile**
**Higher**

**FED USGS** **USGS40000185423**

| | | | |
|---|---|---|---|
| Organization ID: | USGS-CA | | |
| Organization Name: | USGS California Water Science Center | | |
| Monitor Location: | 002S007E15J001M | Type: | Well |
| Description: | Not Reported | HUC: | 18040005 |
| Drainage Area: | Not Reported | Drainage Area Units: | Not Reported |
| Contrib Drainage Area: | Not Reported | Contrib Drainage Area Unts: | Not Reported |
| Aquifer: | Central Valley aquifer system | | |
| Formation Type: | Not Reported | Aquifer Type: | Not Reported |
| Construction Date: | 19740426 | Well Depth: | 164 |
| Well Depth Units: | ft | Well Hole Depth: | 164 |
| Well Hole Depth Units: | ft | | |

| | | | |
|---|---|---|---|
| Ground water levels,Number of Measurements: | 1 | Level reading date: | 1974-04-26 |
| Feet below surface: | 12.00 | Feet to sea level: | Not Reported |
| Note: | Not Reported | | |

---

**17**
**NW**
**1/2 - 1 Mile**
**Lower**

**CA WELLS** **CADPR0000003751**

| | | | |
|---|---|---|---|
| Well ID: | 81608 | Well Type: | UNK |
| Source: | Department of Pesticide Regulation | | |
| Other Name: | 81608 | PFAS Found: | No |
| Groundwater Quality Data: | https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DPR&samp_date=&global_id=&assigned_name=81608&store_num= | | |
| GeoTracker Data: | Not Reported | | |

---

**C18**
**NW**
**1/2 - 1 Mile**
**Lower**

**CA WELLS** **CADDW0000005290**

| | | | |
|---|---|---|---|
| Well ID: | 3910005-034 | Well Type: | MUNICIPAL |
| Source: | Department of Health Services | | |
| Other Name: | WELL NO. 20 - RAW STANDBY | PFAS Found: | No |
| Groundwater Quality Data: | https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DHS&samp_date=&global_id=&assigned_name=3910005-034&store_num= | | |
| GeoTracker Data: | Not Reported | | |

---

**C19**
**NW**
**1/2 - 1 Mile**
**Lower**

**CA WELLS** **CAUSGSN00002369**

| | | | |
|---|---|---|---|
| Well ID: | USGS-374600121120001 | Well Type: | UNK |
| Source: | United States Geological Survey | | |
| Other Name: | USGS-374600121120001 | PFAS Found: | No |
| Groundwater Quality Data: | https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=USGSNEW&samp_date=&global_id=&assigned_name=USGS-374600121120001&store_num= | | |
| GeoTracker Data: | Not Reported | | |

---

**C20**
**NW**
**1/2 - 1 Mile**
**Lower**

**CA WELLS** **CAUSGS000001130**

| | | | |
|---|---|---|---|
| Well ID: | ESJ-02 | Well Type: | MUNICIPAL |
| Source: | United States Geological Survey | | |
| Other Name: | ESJ-02 | PFAS Found: | No |
| Groundwater Quality Data: | https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=USGS&samp_date=&global_id=&assigned_name=ESJ-02&store_num= | | |
| GeoTracker Data: | Not Reported | | |

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

**21**
**ENE**
**1/2 - 1 Mile**
**Higher**

**CA WELLS** **CADWR8000036315**

| | | | |
|---|---|---|---|
| State Well #: | 02S07E11N002M | Station ID: | 27636 |
| Well Name: | 02S07E11N002 | Well Use: | Irrigation |
| Well Type: | Single Well | Well Depth: | 79 |
| Basin Name: | Eastern San Joaquin | Well Completion Rpt #: | Not Reported |

---

**C22**
**NW**
**1/2 - 1 Mile**
**Lower**

**CA WELLS** **CAEDF0000026993**

| | | | |
|---|---|---|---|
| Well ID: | AGC100012333-SJCDW00024 | Well Type: | MONITORING |
| Source: | Agricultural Lands | Other Name: | SJCDW00024 |
| PFAS Found: | No | | |
| Groundwater Quality Data: | https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=AGLAND&samp_date=&global_id=AGC100012333&assigned_name=SJCDW00024&store_num= | | |
| GeoTracker Data: | Not Reported | | |

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance

Database EDR ID Number

**1**
**SSE** **OIL_GAS** **CAOG13000008407**
**1/2 - 1 Mile**

| | | | |
|---|---|---|---|
| API #: | 0407720057 | Well #: | 1 |
| Well Status: | Plugged | Well Type: | DH |
| Operator Name: | R. Bruce Grey | Lease Name: | Lease by R. Bruce Grey |
| Field Name: | Any Field | Area Name: | Any Area |
| GIS Source: | hud | Confidential Well: | N |
| Directionally Drilled: | N | SPUD Date: | 08/15/1968 |

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
# RADON

**AREA RADON INFORMATION**

State Database: CA Radon

Radon Test Results

| Zipcode | Num Tests | > 4 pCi/L |
|---|---|---|
| 95337 | 5 | 1 |

Federal EPA Radon Zone for SAN JOAQUIN County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

---

Federal Area Radon Information for SAN JOAQUIN COUNTY, CA

Number of sites tested: 20

| Area | Average Activity | % <4 pCi/L | % 4-20 pCi/L | % >20 pCi/L |
|---|---|---|---|---|
| Living Area - 1st Floor | 2.530 pCi/L | 90% | 10% | 0% |
| Living Area - 2nd Floor | Not Reported | Not Reported | Not Reported | Not Reported |
| Basement | 2.050 pCi/L | 100% | 0% | 0% |

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

## HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

## HYDROGEOLOGIC INFORMATION

AQUIFLOW$^{R}$ Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

## GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

## OTHER STATE DATABASE INFORMATION

Groundwater Ambient Monitoring & Assessment Program
State Water Resources Control Board
Telephone: 916-341-5577
The GAMA Program is Californias comprehensive groundwater quality monitoring program. GAMA collects data by testing the untreated, raw water in different types of wells for naturally-occurring and man-made chemicals. The GAMA data includes Domestic, Monitoring and Municipal well types from the following sources, Department of Water Resources, Department of Heath Services, EDF, Agricultural Lands, Lawrence Livermore National Laboratory, Department of Pesticide Regulation, United States Geological Survey, Groundwater Ambient Monitoring and Assessment Program and Local Groundwater Projects.

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

California Oil and Gas Well Locations
Source: Dept of Conservation, Geologic Energy Management Division
Telephone: 916-323-1779
Oil and Gas well locations in the state.

California Earthquake Fault Lines
Source: California Division of Mines and Geology
The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

RADON

State Database: CA Radon
Source: Department of Public Health
Telephone: 916-210-8558
Radon Database for California

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

**STREET AND ADDRESS INFORMATION**

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# APPENDIX B

## FIRST AMERICAN TITLE COMPANY

## Preliminary Title Report

**UPDATED**



First American Title

# First American Title Company

**1001 Galaxy Way, Suite 101**
**Concord, CA 94520**
California Department of Insurance License No. 151

| | |
|---|---|
| Order Number: | 0192-5373639 (me) |
| Title Officer: | Machelle Evans |
| Phone: | (209)929-4800 |
| Fax No.: | (866)493-5440 |
| E-Mail: | macevans@firstam.com |
| Buyer: | Richland Communities |
| Property: | Hat Ranch proposed map<br>Manteca, CA |

## PRELIMINARY REPORT

In response to the above referenced application for a policy of title insurance, this company hereby reports that it is prepared to issue, or cause to be issued, as of the date hereof, a Policy or Policies of Title Insurance describing the land and the estate or interest therein hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as an Exception below or not excluded from coverage pursuant to the printed Schedules, Conditions and Stipulations of said Policy forms.

The printed Exceptions and Exclusions from the coverage and Limitations on Covered Risks of said policy or policies are set forth in Exhibit A attached. *The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than that set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties.* Limitations on Covered Risks applicable to the CLTA and ALTA Homeowner's Policies of Title Insurance which establish a Deductible Amount and a Maximum Dollar Limit of Liability for certain coverages are also set forth in Exhibit A. Copies of the policy forms should be read. They are available from the office which issued this report.

**Please read the exceptions shown or referred to below and the exceptions and exclusions set forth in Exhibit A of this report carefully. The exceptions and exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy and should be carefully considered.**

**It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects, and encumbrances affecting title to the land.**

This report (and any supplements or amendments hereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby. If it is desired that liability be assumed prior to the issuance of a policy of title insurance, a Binder or Commitment should be requested.

Dated as of August 21, 2019 at 7:30 A.M.

The form of Policy of title insurance contemplated by this report is:

To Be Determined

A specific request should be made if another form or additional coverage is desired.

Title to said estate or interest at the date hereof is vested in:

RIVERSIDE LHC, LTD

The estate or interest in the land hereinafter described or referred to covered by this Report is:

A fee.

The Land referred to herein is described as follows:

(See attached Legal Description)

At the date hereof exceptions to coverage in addition to the printed Exceptions and Exclusions in said policy form would be as follows:

1. General and special taxes and assessments for the fiscal year 2019-2020, a lien not yet due or payable.

2. The lien of defaulted taxes for the fiscal year 2015-2016, and any subsequent delinquencies.

| | |
|---|---|
| Tax Rate Area: | 113004 |
| A. P. No.: | 226-140-040-000 |
| Amount to redeem: | $293,123.42 |
| Valid through: | August 2019 |

**Please contact the tax office to verify the payoff amount.**

Affects: Parcels One and Two

3. The lien of defaulted taxes for the fiscal year 2015-2016, and any subsequent delinquencies.

| | |
|---|---|
| Tax Rate Area: | 113007 |
| A. P. No.: | 226-120-100-000 |
| Amount to redeem: | $45,524.24 |
| Valid through: | August 2019 |

**Please contact the tax office to verify the payoff amount.**

Affects: Parcel Three

4. The lien of defaulted taxes for the fiscal year 2015-2016, and any subsequent delinquencies.

| | |
|---|---|
| Tax Rate Area: | 113007 |
| A. P. No.: | 226-120-110-000 |
| Amount to redeem: | $45,524.24 |
| Valid through: | August 2019 |

**Please contact the tax office to verify the payoff amount.**

Affects: Parcel Four

5. Taxes and assessments, if any, of the South San Joaquin Irrigation District.

6. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

7. An easement for canal right of way and incidental purposes, recorded December 14, 1920 in Book A of Volume 470 of Deeds, Page 163.

In Favor of: H.D. Pillsbury (a married man)
Affects: Parcel Three

8. An easement for right of way and incidental purposes, recorded November 26, 1965 in Book 3002, Page 150 of Official Records.

In Favor of: South San Joaquin Irrigation District
Affects: Parcels One, Two and Four

9. Terms, provisions, covenants, restrictions and conditions contained in a document executed pursuant to the California Land Conservation Act of 1965 (Williamson Act) and recorded January 22, 1976 in Book 4075, Page 139 of Official Records.

The effect of a document entitled "Notice of Nonrenewal", recorded November 3, 2004 as Instrument No. 2004-251111 of Official Records.

10. The effect of a map purporting to show the land and other property, filed August 16, 1994 in Book 33, Page 13 of Record of Surveys.

Affects: Parcels Three and Four

11. The terms and provisions contained in the document entitled "Notice of Second Unit Dwelling SD-95-10" recorded March 31, 1995 as Instrument No. 95029397 of Official Records.

Affects: Parcels One and Two

12. Any claim that the Title is subject to a trust or lien created under The Perishable Agricultural Commodities Act, 1930 (7 U.S.C. §§499a, et seq.) or the Packers and Stockyards Act (7 U.S.C. §§181 et seq.) or under similar state laws.

13. Rights of the public in and to that portion of the land lying within any Road, Street, Alley or Highway.

14. Water rights, claims or title to water, whether or not shown by the public records.

15. Rights of parties in possession.

**Prior to the issuance of any policy of title insurance, the Company will require:**

16. With respect to Riverside LHC, Ltd, a limited partnership:
a. That a certified copy of the application for registration, foreign limited partnership (form LP-5) and any amendments thereto (form LP-6) be recorded in the public records;
b. A full copy of the partnership agreement and any amendments;
c. Satisfactory evidence of the consent of a majority in interest of the limited partners to the contemplated transaction;
d. Other requirements which the Company may impose following its review of the material required herein and other information which the Company may require.

## INFORMATIONAL NOTES

Note: The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than the certain dollar amount set forth in any applicable arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. If you desire to review the terms of the policy, including any arbitration clause that may be included, contact the office that issued this Commitment or Report to obtain a sample of the policy jacket for the policy that is to be issued in connection with your transaction.

1. General and special taxes and assessments for the fiscal year 2018-2019.

| | |
|---|---|
| First Installment: | $34,349.83, PAID |
| Penalty: | $0.00 |
| Second Installment: | $34,349.83, PAID |
| Penalty: | $0.00 |
| Tax Rate Area: | 113004 |
| A. P. No.: | 226-140-040-000 |

Affects: Parcels One and Two

2. General and special taxes and assessments for the fiscal year 2018-2019.

| | |
|---|---|
| First Installment: | $5,781.15, PAID |
| Penalty: | $0.00 |
| Second Installment: | $5,781.15, PAID |
| Penalty: | $0.00 |
| Tax Rate Area: | 113007 |
| A. P. No.: | 226-120-100-000 |

Affects: Parcel Three

3. General and special taxes and assessments for the fiscal year 2018-2019.

| | |
|---|---|
| First Installment: | $5,781.15, PAID |
| Penalty: | $0.00 |
| Second Installment: | $5,781.15, PAID |
| Penalty: | $0.00 |
| Tax Rate Area: | 113007 |
| A. P. No.: | 226-120-110-000 |

Affects: Parcel Four

4. According to the latest available equalized assessment roll in the office of the county tax assessor, there is located on the land a(n) Commercial Structure known as 21706 and 21712 South Manteca Road and 9701 Sedan Avenue, California.

5. According to the public records, there has been no conveyance of the land within a period of twenty-four months prior to the date of this report, except as follows:

   None

6. We find no open deeds of trust. Escrow please confirm before closing.

The map attached, if any, may or may not be a survey of the land depicted hereon. First American expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

## LEGAL DESCRIPTION

Real property in the unincorporated area of the County of San Joaquin, State of California, described as follows:

PARCEL ONE:

BEING A TRACT OF LAND IN THE NORTHWEST ¼ SECTION OF 15, TOWNSHIP 2 SOUTH, RANGE 7 EAST, MOUNT DIABLO BASE AND MERIDIAN (KNOWN AS A PORTION OF THE PILLSBURY TRACT), MORE FULLY DESCRIBED AS FOLLOWS:
COMMENCING AT THE NORTHWEST QUARTER CORNER OF SAID SECTION 15; THENCE RUNNING SOUTH 1°17' EAST 936 FEET ALONG THE WEST LINE OF SAID SECTION 15 TO THE NORTHWEST CORNER AND THE TRUE POINT OF BEGINNING OF THE HEREIN TRACT OF LAND; THENCE ALONG THE WEST LINE OF THE SAID SECTION 15, SOUTH 1°17' EAST 1710 FEET TO THE SOUTHWEST CORNER OF THE NORTHWEST ¼ OF SAID SECTION 15; THENCE ALONG THE SOUTH LINE OF THE SAID NORTHWEST ¼ OF SECTION 15, NORTH 89°19' EAST 1019.00 FEET; THENCE NORTH 01°17' WEST 1710.00 FEET ALONG A LINE PARALLEL WITH THE WEST LINE OF SAID SECTION 15; THENCE NORTH 89°19' WEST ALONG A LINE OF PARALLEL WITH THE SOUTH LINE OF SAID NORTHWEST ¼ OF SAID SECTION 15, A DISTANCE OF 1019.00 FEET TO THE TRUE POINT OF BEGINNING.

EXCEPT THEREFROM ALL OIL, GAS, MINERALS AND OTHER HYDROCARBONS AS CONTAINED IN DEED FROM BANK OF AMERICA NATIONAL TRUST & SAVINGS ASSOCIATION, A NATIONAL BANKING ASSOCIATION RECORDED JANUARY 23, 1940 IN BOOK OF OFFICIAL RECORDS, BOOK 681, PAGE 82, SAN JOAQUIN COUNTY RECORDS. AFFECTS THAT PORTION LYING NORTHERLY OF THE FORMER CENTER LINE OF IRRIGATION DITCH LATERAL X OF SOUTH SAN JOAQUIN IRRIGATION DISTRICT.

PARCEL TWO:

BEING A TRACT OF LAND IN THE NORTHWEST ¼ OF SECTION 15, TOWNSHIP 2 SOUTH, RANGE 7 EAST, MOUNT DIABLO BASE AND MERIDIAN (KNOWN AS A PORTION OF THE PILLSBURY TRACT), MORE FULLY DESCRIBED AS FOLLOWS:
COMMENCING AT THE NORTHWEST QUARTER CORNER OF SAID SECTION 15; THENCE RUNNING SOUTH 1°17' EAST 936.0 FEET ALONG THE WEST LINE OF SAID SECTION 15 TO THE NORTHWEST CORNER AND THE TRUE POINT OF BEGINNING OF THE HEREIN DESCRIBED TRACT OF LAND; THENCE ALONG THE WEST LINE OF THE SAID SECTION 15, SOUTH 1°17' EAST 1710 FEET TO THE SOUTHWEST CORNER OF THE NORTHWEST ¼ OF SAID SECTION 15; THENCE ALONG THE SOUTH LINE OF THE SAID NORTHWEST ¼ OF SECTION 15, NORTH 89°19' EAST 2652.0 FEET TO THE NORTHEAST CORNER OF THE SAID NORTHWEST ¼ OF SECTION 15; THENCE NORTH 01°18' WEST 1710.0 FEET ALONG THE EAST LINE OF THE NORTHWEST ¼ OF SECTION 25; THENCE SOUTH 89°19' WEST 2651.5 FEET TO THE POINT OF BEGINNING.

EXCEPT THEREFROM THE WEST 40 ACRES OF THAT PARCEL WHICH WAS DEEDED TO PATRICIA JEANETTE POTTER IN A DEED DATED OCTOBER 4, 1983 AND RECORDED OCTOBER 11, 1983 RECORDER'S INSTRUMENT NO. 83074093, SAN JOAQUIN COUNTY RECORDS.

EXCEPT THEREFROM ALL OIL, GAS, MINERALS AND OTHER HYDROCARBONS AS CONTAINED IN DEED FROM BANK OF AMERICA NATIONAL TRUST & SAVINGS ASSOCIATION, A NATIONAL BANKING ASSOCIATION RECORDED JANUARY 23, 1940 IN BOOK OF OFFICIAL RECORDS, BOOK 681, PAGE 82, SAN JOAQUIN COUNTY RECORDS. AFFECTS THAT PORTION LYING NORTHERLY OF THE FORMER CENTER LINE OF IRRIGATION DITCH LATERAL X OF SOUTH SAN JOAQUIN

IRRIGATION DISTRICT.

PARCEL THREE:

THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 16, TOWNSHIP2 SOUTH, RANGE 7 EAST, MOUNT DIABLO BASE AND MERIDIAN.

EXCEPTING THEREFROM THE SOUTH 40 FEET AS RESERVED FOR ALL THE PURPOSES OF THE PUBLIC ROAD IN THE DEED DATED DECEMBER 10, 1920, EXECUTED BY H.D. PILLSBURY AND RECORDED DECEMBER 11, 1920, IN BOOK A OF DEEDS, VOL. 470, PAGE 163, IN THE OFFICE OF THE COUNTY OF SAN JOAQUIN.

PARCEL FOUR:

THE SOUTHEAST ¼ OF THE NORTHEAST ¼ OF SECTION 16, TOWNSHIP 2 SOUTH, RANGE 7 EAST, MOUNT DIABLO BASE AND MERIDIAN.

EXCEPTING THEREFROM ½ OF ALL MINERAL RIGHTS RESERVED IN DEED BY BANK OF AMERICA NATIONAL TRUST AND SAVINGS ASSOCIATION RECORDED DECEMBER 21, 1936 IN BOOK OF OFFICIAL RECORDS, BOOK 562, PAGE 262, SAN JOAQUIN COUNTY RECORDS.

APN: 226-140-040-000 (Affects Parcels One and Two), 226-120-100-000 (Affects Parcel Three) and 226-120-110-000 (Affects Parcel Four)

## *NOTICE*

Section 12413.1 of the California Insurance Code, effective January 1, 1990, requires that any title insurance company, underwritten title company, or controlled escrow company handling funds in an escrow or sub-escrow capacity, wait a specified number of days after depositing funds, before recording any documents in connection with the transaction or disbursing funds. This statute allows for funds deposited by wire transfer to be disbursed the same day as deposit. In the case of cashier's checks or certified checks, funds may be disbursed the next day after deposit. In order to avoid unnecessary delays of three to seven days, or more, please use wire transfer, cashier's checks, or certified checks whenever possible.

**EXHIBIT A**
**LIST OF PRINTED EXCEPTIONS AND EXCLUSIONS (BY POLICY TYPE)**

**CLTA STANDARD COVERAGE POLICY – 1990**

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building or zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien, or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable doing business laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate of interest insured by this policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

EXCEPTIONS FROM COVERAGE - SCHEDULE B, PART I

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
   Proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public, records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b) or (c) are shown by the public records.
6. Any lien or right to a lien for services, labor or material not shown by the public records.

**CLTA/ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE (12-02-13)**

EXCLUSIONS

In addition to the Exceptions in Schedule B, You are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of those portions of any law or government regulation concerning:
   a. building;
   b. zoning;
   c. land use;
   d. improvements on the Land;
   e. land division; and
   f. environmental protection.

   This Exclusion does not limit the coverage described in Covered Risk 8.a., 14, 15, 16, 18, 19, 20, 23 or 27.
2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not limit the coverage described in Covered Risk 14 or 15.
3. The right to take the Land by condemning it. This Exclusion does not limit the coverage described in Covered Risk 17.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they are recorded in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they are recorded in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.e., 25, 26, 27 or 28.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.

   This Exclusion does not limit the coverage described in Covered Risk 11 or 21.
7. The transfer of the Title to You is invalid as a preferential transfer or as a fraudulent transfer or conveyance under federal bankruptcy, state insolvency, or similar creditors' rights laws.
8. Contamination, explosion, fire, flooding, vibration, fracturing, earthquake, or subsidence.
9. Negligence by a person or an Entity exercising a right to extract or develop minerals, water, or any other substances.

**LIMITATIONS ON COVERED RISKS**

Your insurance for the following Covered Risks is limited on the Owner's Coverage Statement as follows:
For Covered Risk 16, 18, 19, and 21 Your Deductible Amount and Our Maximum Dollar Limit of Liability shown in Schedule A.
The deductible amounts and maximum dollar limits shown on Schedule A are as follows:

| | Your Deductible Amount | Our Maximum Dollar Limit of Liability |
|---|---|---|
| Covered Risk 16: | 1% of Policy Amount Shown in Schedule A or $2,500 (whichever is less) | $10,000 |
| Covered Risk 18: | 1% of Policy Amount Shown in Schedule A or $5,000 (whichever is less) | $25,000 |
| Covered Risk 19: | 1% of Policy Amount Shown in Schedule A or $5,000 (whichever is less) | $25,000 |
| Covered Risk 21: | 1% of Policy Amount Shown in Schedule A or $2,500 (whichever is less) | $5,000 |

**2006 ALTA LOAN POLICY (06-17-06)**

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
   (i) the occupancy, use, or enjoyment of the Land;

(ii) the character, dimensions, or location of any improvement erected on the Land;

(iii) the subdivision of land; or

(iv) environmental protection;

or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.
6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

(a) a fraudulent conveyance or fraudulent transfer, or

(b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

EXCEPTIONS FROM COVERAGE

[Except as provided in Schedule B - Part II,[ t[or T]his policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees or expenses, that arise by reason of:

**[PART I**

[The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
6. Any lien or right to a lien for services, labor or material not shown by the public records.]

**PART II**

In addition to the matters set forth in Part I of this Schedule, the Title is subject to the following matters, and the Company insures against loss or damage sustained in the event that they are not subordinate to the lien of the Insured Mortgage:]

**2006 ALTA OWNER'S POLICY (06-17-06)**

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

(i) the occupancy, use, or enjoyment of the Land;

(ii) the character, dimensions, or location of any improvement erected on the Land;

(iii) the subdivision of land; or

(iv) environmental protection;

or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed, or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 9 or 10); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction vesting the Title as shown in Schedule A, is

(a) a fraudulent conveyance or fraudulent transfer, or

(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.

5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees or expenses, that arise by reason of:

[The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
6. Any lien or right to a lien for services, labor or material not shown by the Public Records.
7. [Variable exceptions such as taxes, easements, CC&R's, etc. shown here.]

**ALTA EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (12-02-13)**

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

(i) the occupancy, use, or enjoyment of the Land;

(ii) the character, dimensions, or location of any improvement erected on the Land;

(iii) the subdivision of land; or

(iv) environmental protection;

or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters

   (a) created, suffered, assumed, or agreed to by the Insured Claimant;

   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

   (c) resulting in no loss or damage to the Insured Claimant;

   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or

   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.
9. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

   (a) a fraudulent conveyance or fraudulent transfer, or

   (b) a preferential transfer for any reason not stated in Covered Risk 27(b) of this policy.
10. Contamination, explosion, fire, flooding, vibration, fracturing, earthquake, or subsidence.
11. Negligence by a person or an Entity exercising a right to extract or develop minerals, water, or any other substances.



First American Title

**Privacy Information**
**We Are Committed to Safeguarding Customer Information**
In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

**Applicability**
This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

**Types of Information**
Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

**Use of Information**
We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

**Former Customers**
Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

**Confidentiality and Security**
We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

**Information Obtained Through Our Web Site**
First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.
In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.
There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

**Business Relationships**
First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

**Cookies**
Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.
FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

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**Fair Information Values**
**Fairness** We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.
**Public Record** We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.
**Use** We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.
**Accuracy** We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.
**Education** We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.
**Security** We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.



# APPENDIX C

## ENVIRONMENTAL DATA RESOURCES, INC.

## Historical Topographic Map Report

Hat Ranch

9701 Sedan Avenue

Manteca, CA 95337

Inquiry Number: 6262441.4

November 11, 2020

# EDR Historical Topo Map Report

## with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

# EDR Historical Topo Map Report

11/11/20

**Site Name:**

Hat Ranch
9701 Sedan Avenue
Manteca, CA 95337
EDR Inquiry # 6262441.4

**Client Name:**

Engeo
6399 San Ignacio Avenue
San Jose, CA 95119
Contact: Cody Johnson

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Engeo were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

***Search Results:***

**P.O.#** 10175.000.001
**Project:** Hat Ranch

***Coordinates:***

| | |
|---|---|
| **Latitude:** | 37.764518 37° 45' 52" North |
| **Longitude:** | -121.194904 -121° 11' 42" West |
| **UTM Zone:** | Zone 10 North |
| **UTM X Meters:** | 658994.67 |
| **UTM Y Meters:** | 4181222.45 |
| **Elevation:** | 46.00' above sea level |

**Maps Provided:**

2012
1994
1991
1987
1976, 1980
1968, 1969
1952
1914, 1915

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## *Topo Sheet Key*

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

### 2012 Source Sheets

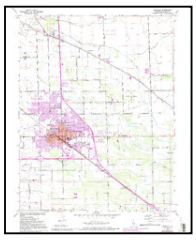


Ripon
2012
7.5-minute, 24000



Manteca
2012
7.5-minute, 24000

### 1994 Source Sheets



Manteca
1994
7.5-minute, 24000
Aerial Photo Revised 1982

### 1991 Source Sheets



Manteca
1991
7.5-minute, 24000
Aerial Photo Revised 1982



Ripon
1991
7.5-minute, 24000
Aerial Photo Revised 1978

### 1987 Source Sheets



Manteca
1987
7.5-minute, 24000
Aerial Photo Revised 1982

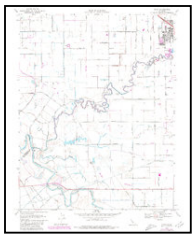
## *Topo Sheet Key*

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

### 1976, 1980 Source Sheets

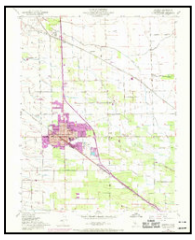


Manteca
1976
7.5-minute, 24000
Aerial Photo Revised 1976



Ripon
1980
7.5-minute, 24000
Aerial Photo Revised 1978

### 1968, 1969 Source Sheets



Manteca
1968
7.5-minute, 24000
Aerial Photo Revised 1968



Ripon
1969
7.5-minute, 24000
Aerial Photo Revised 1968

### 1952 Source Sheets



Manteca
1952
7.5-minute, 24000
Aerial Photo Revised 1949



Ripon
1952
7.5-minute, 24000
Aerial Photo Revised 1949

### 1914, 1915 Source Sheets



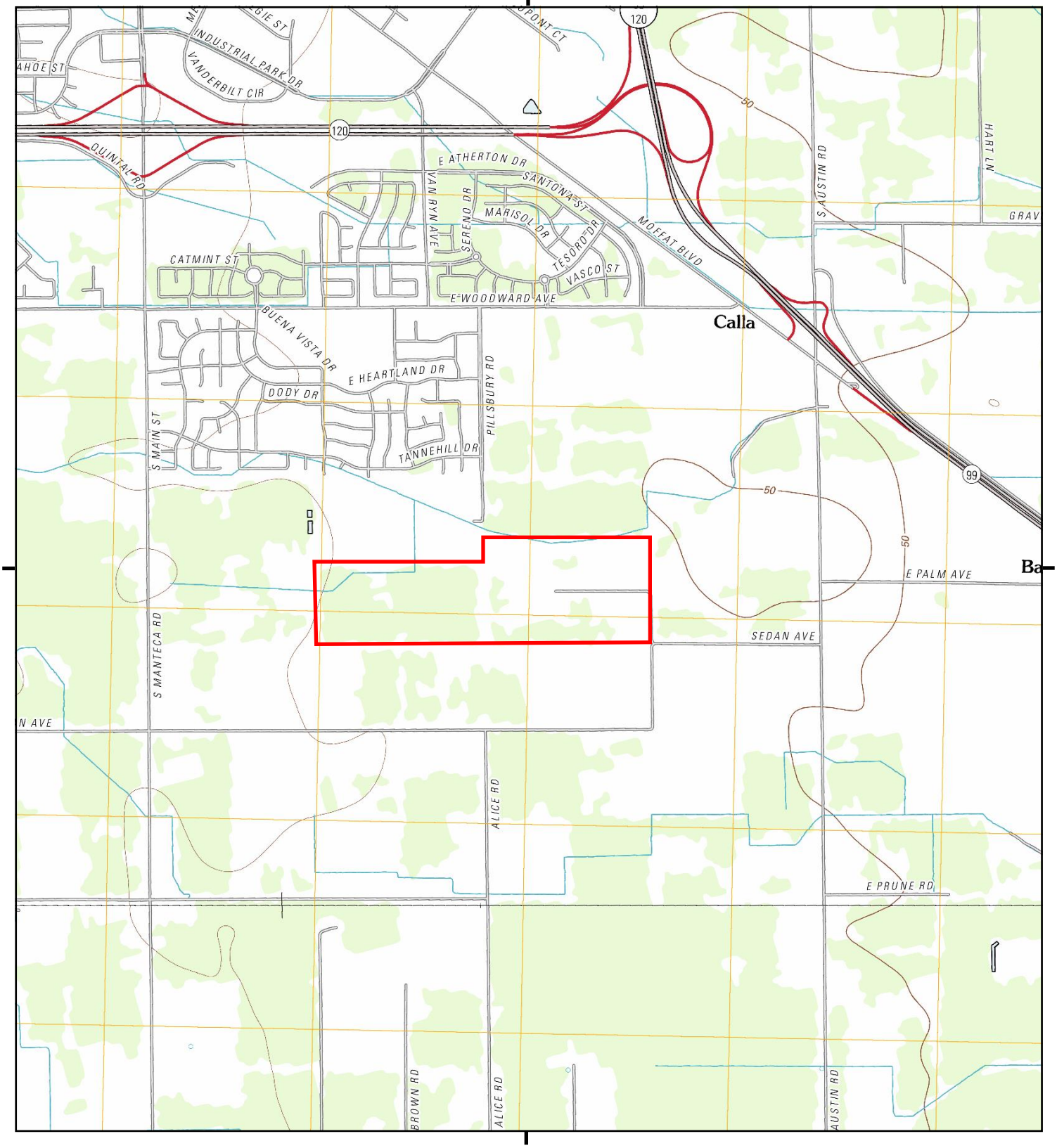
Manteca
1914
7.5-minute, 31680



Ripon
1915
7.5-minute, 31680

# Historical Topo Map

2012




This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

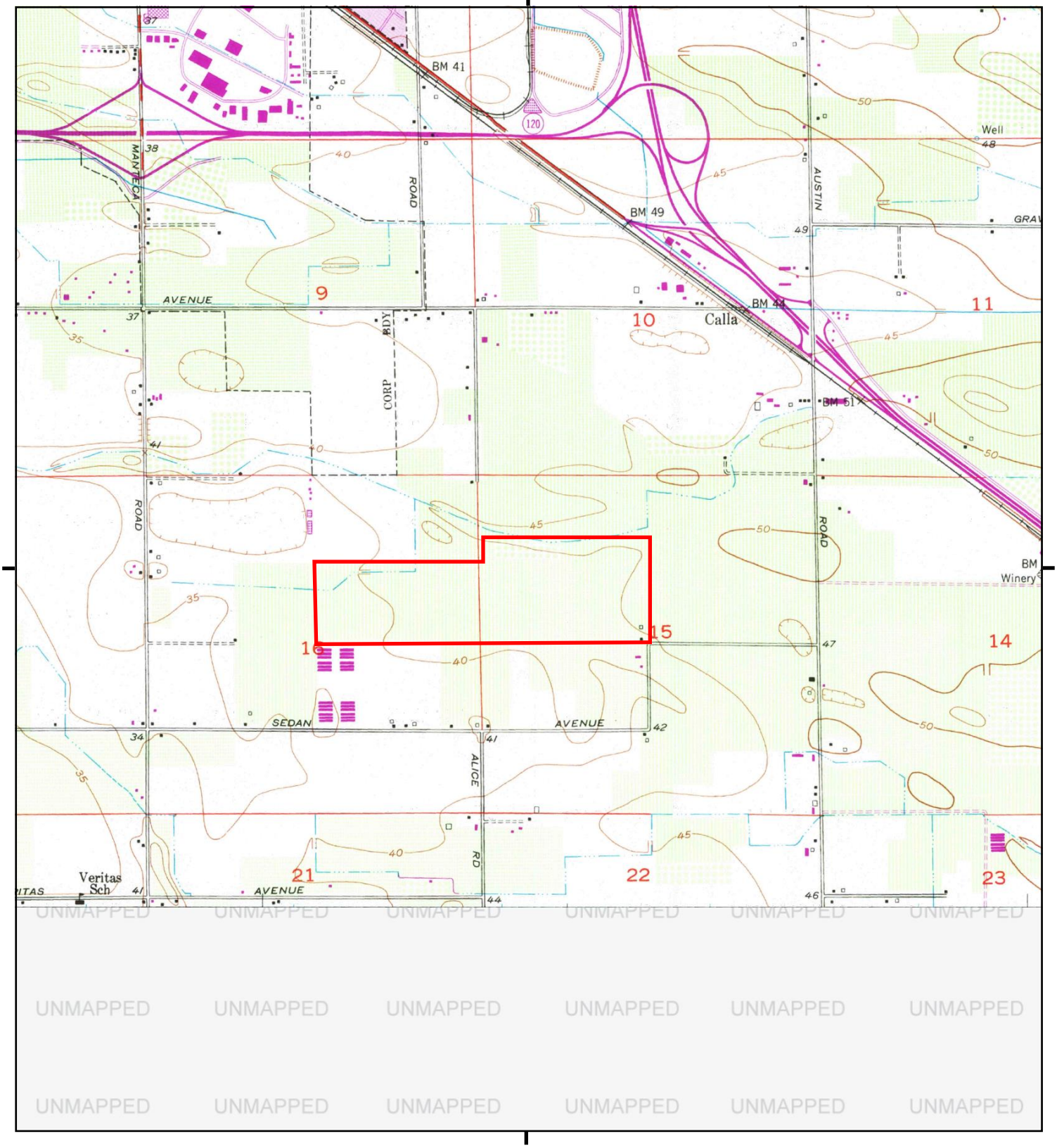
TP, Manteca, 2012, 7.5-minute
S, Ripon, 2012, 7.5-minute

SITE NAME: Hat Ranch
ADDRESS: 9701 Sedan Avenue
Manteca, CA 95337
CLIENT: Engeo

N

# Historical Topo Map

1994




This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

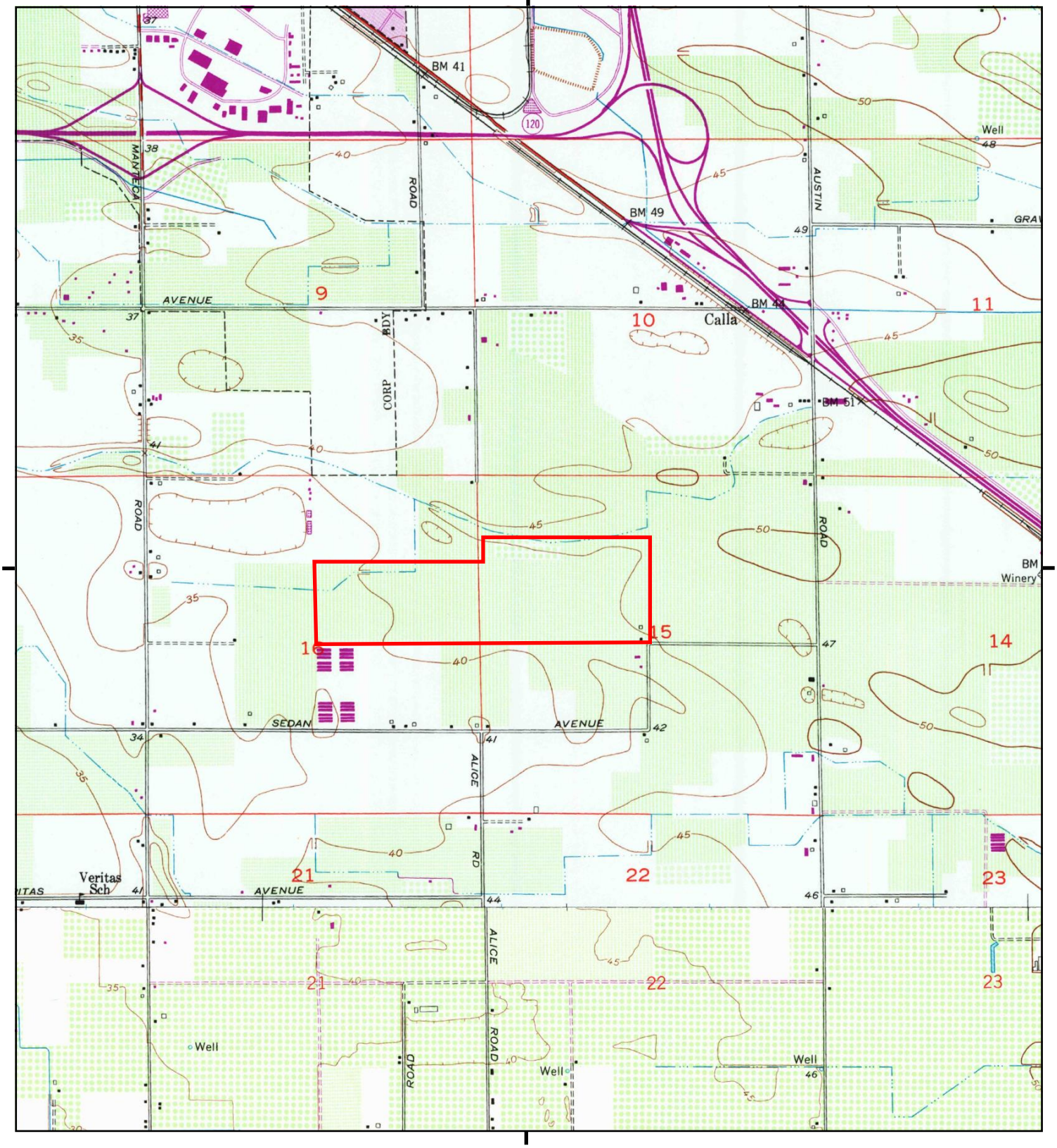
TP, Manteca, 1994, 7.5-minute

SITE NAME: Hat Ranch
ADDRESS: 9701 Sedan Avenue
Manteca, CA 95337
CLIENT: Engeo

N

# Historical Topo Map

1991




This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

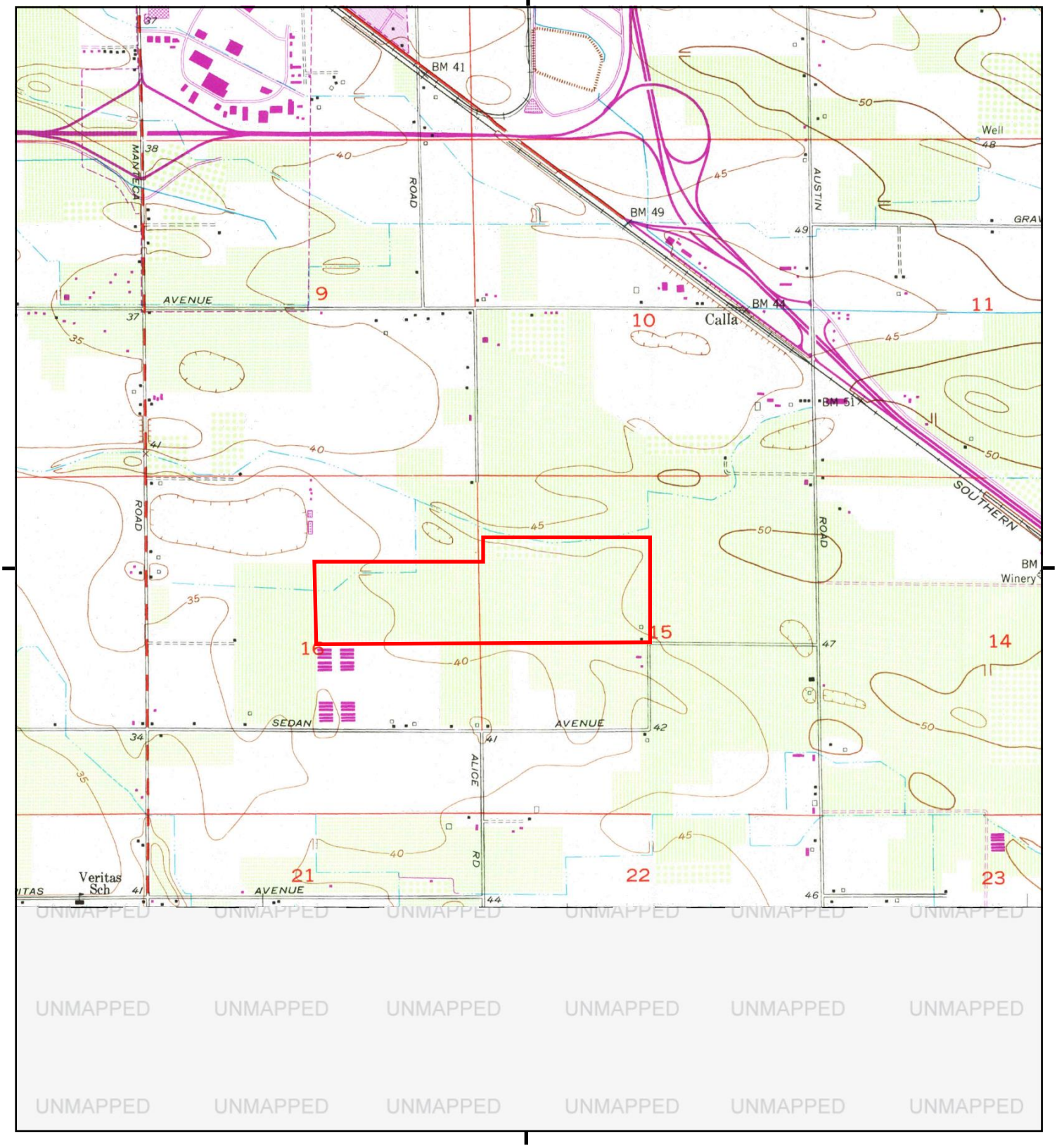
TP, Manteca, 1991, 7.5-minute
S, Ripon, 1991, 7.5-minute

SITE NAME: Hat Ranch
ADDRESS: 9701 Sedan Avenue
Manteca, CA 95337
CLIENT: Engeo

N

# Historical Topo Map

1987




This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

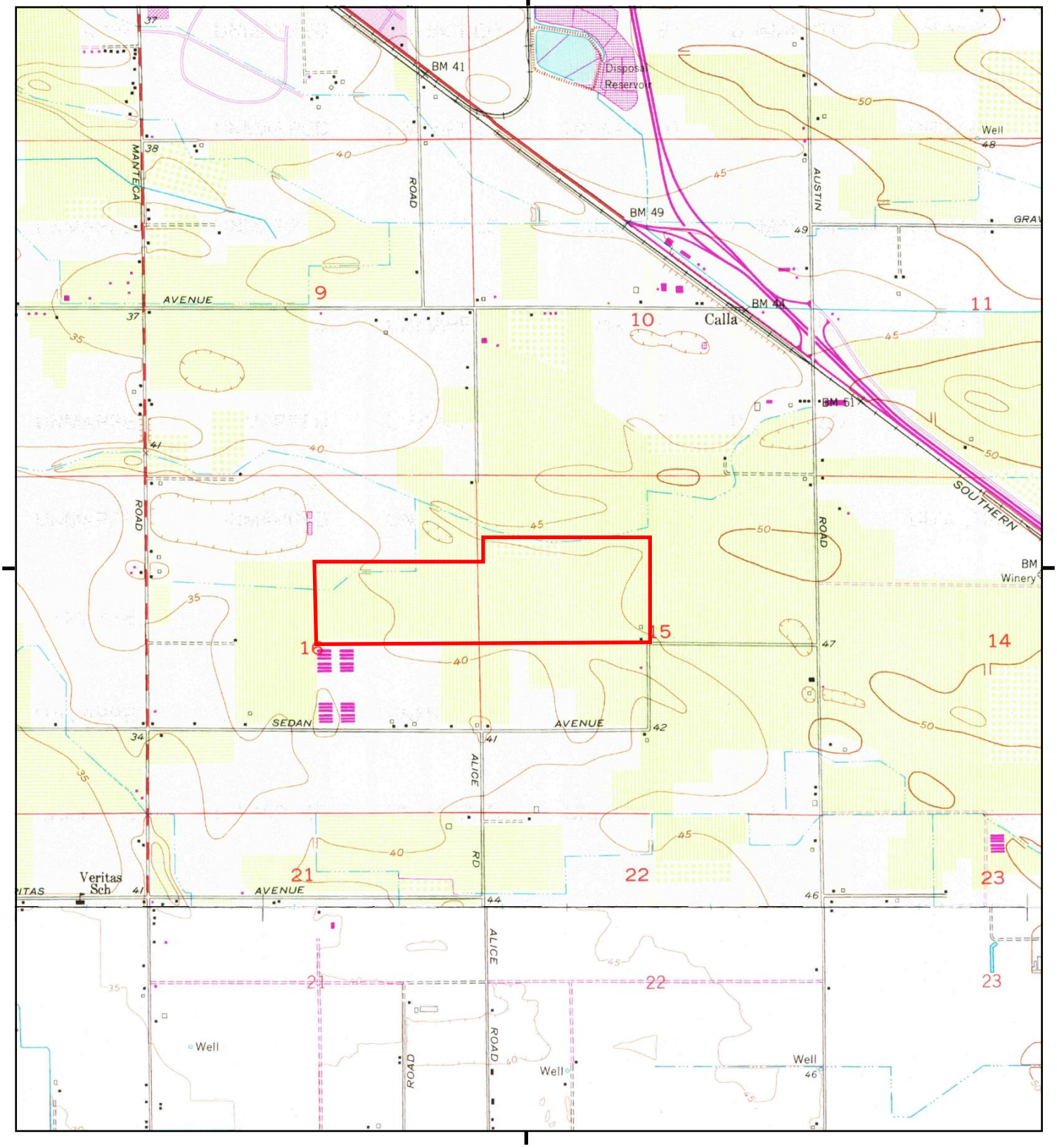
TP, Manteca, 1987, 7.5-minute

SITE NAME: Hat Ranch
ADDRESS: 9701 Sedan Avenue
Manteca, CA 95337
CLIENT: Engeo

N

# Historical Topo Map

1976, 1980




This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

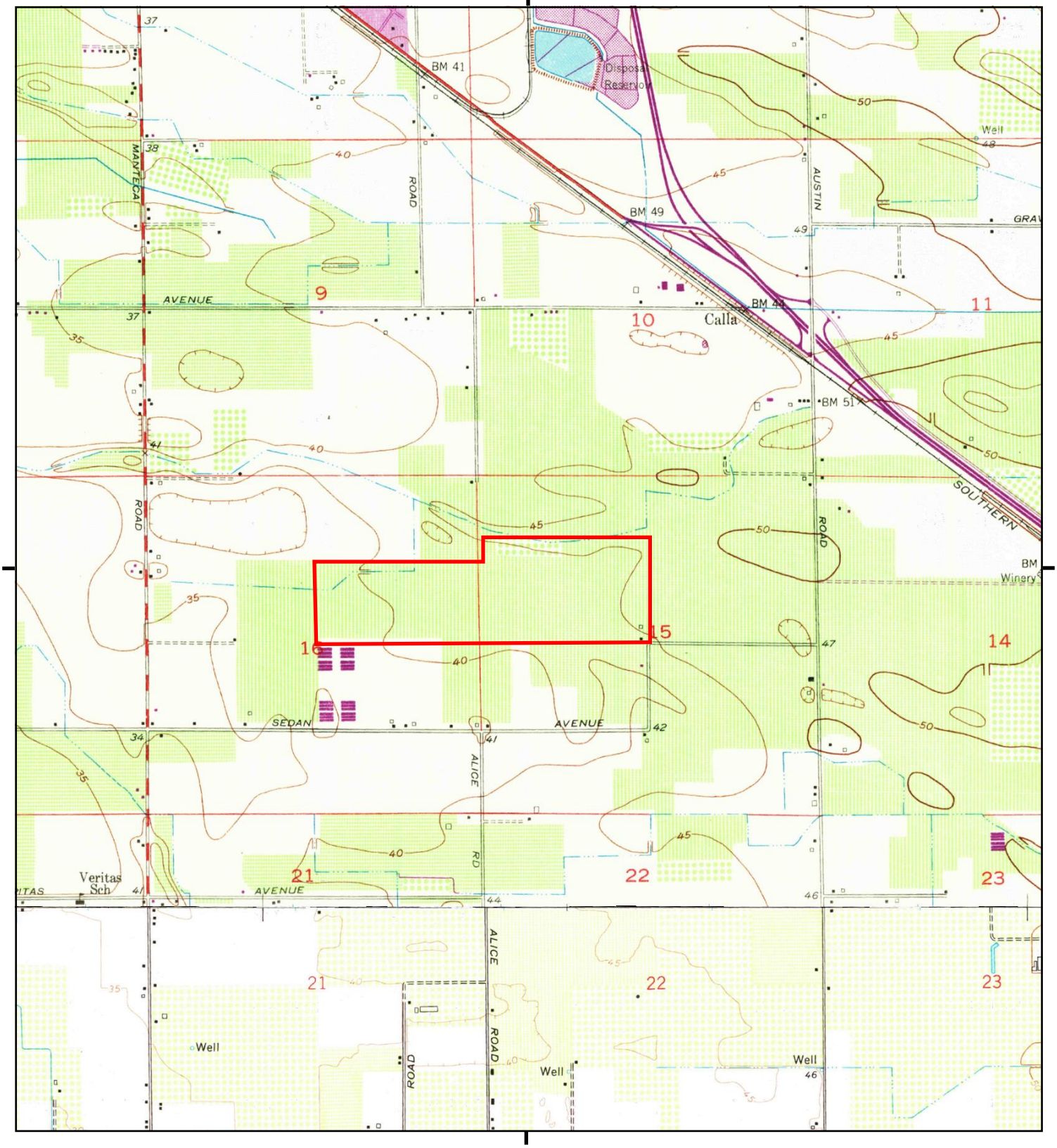
TP, Manteca, 1976, 7.5-minute
S, Ripon, 1980, 7.5-minute

SITE NAME: Hat Ranch
ADDRESS: 9701 Sedan Avenue
Manteca, CA 95337
CLIENT: Engeo

N

# Historical Topo Map

1968, 1969




This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

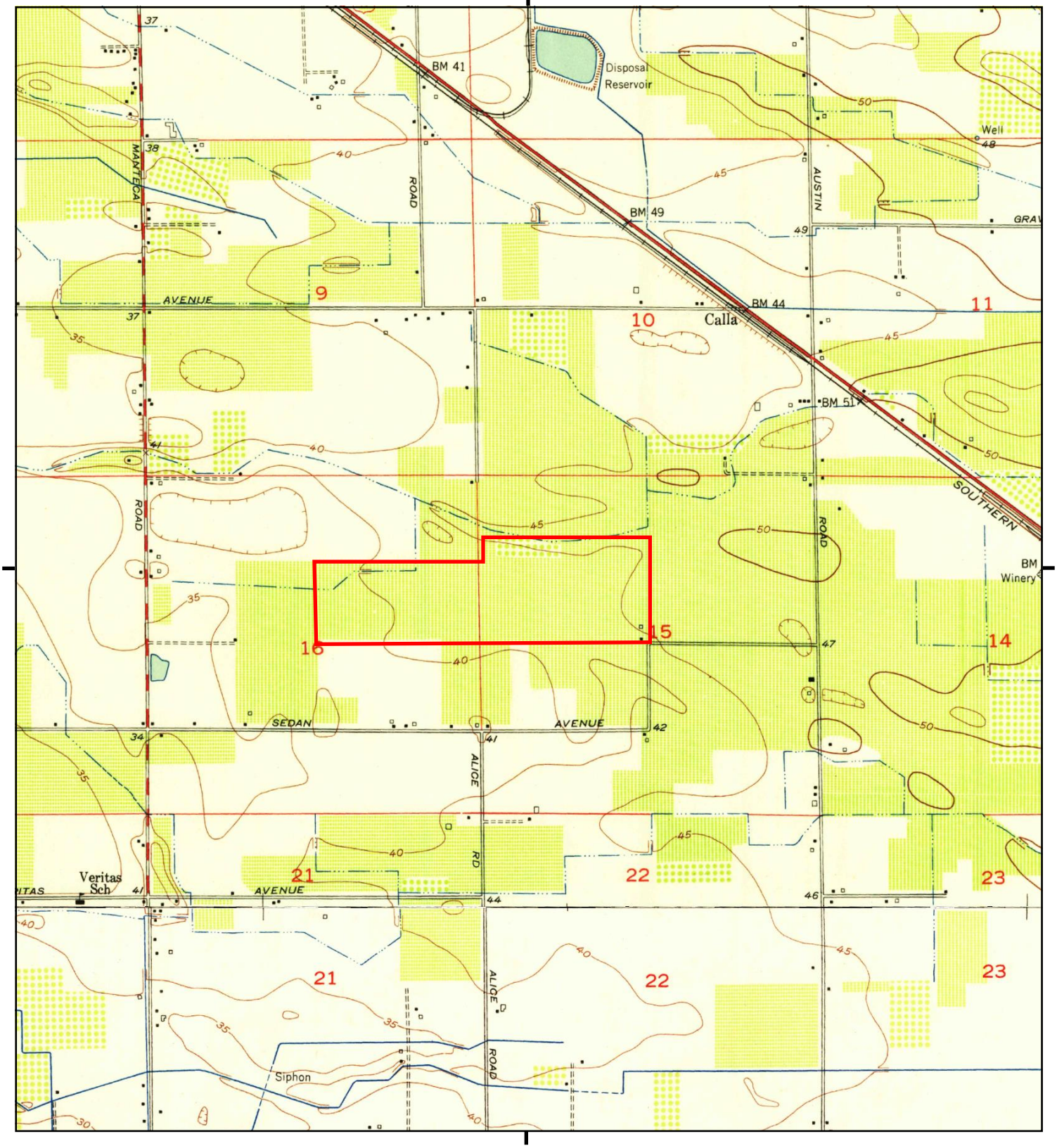
TP, Manteca, 1968, 7.5-minute
S, Ripon, 1969, 7.5-minute

SITE NAME: Hat Ranch
ADDRESS: 9701 Sedan Avenue
Manteca, CA 95337
CLIENT: Engeo

N

# Historical Topo Map

1952




This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

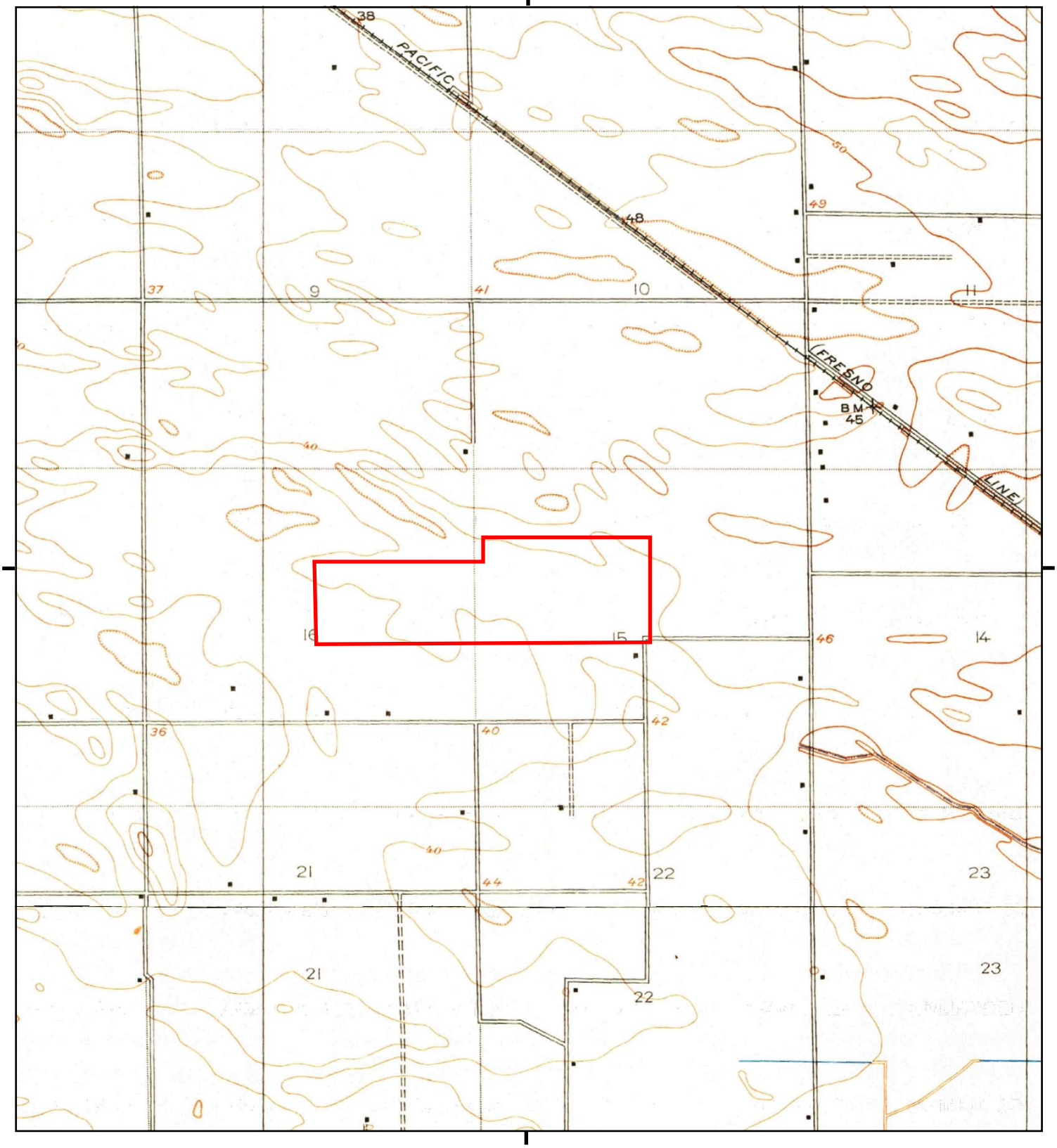
TP, Manteca, 1952, 7.5-minute
S, Ripon, 1952, 7.5-minute

SITE NAME: Hat Ranch
ADDRESS: 9701 Sedan Avenue
Manteca, CA 95337
CLIENT: Engeo

N

# Historical Topo Map

1914, 1915




This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Manteca, 1914, 7.5-minute
S, Ripon, 1915, 7.5-minute

SITE NAME: Hat Ranch
ADDRESS: 9701 Sedan Avenue
Manteca, CA 95337
CLIENT: Engeo

N



# APPENDIX D

## ENVIRONMENTAL DATA RESOURCES, INC.

## Aerial Photo Decade Package

**Hat Ranch**

9701 Sedan Avenue

Manteca, CA 95337

Inquiry Number: 6262441.8

November 11, 2020

# The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

# EDR Aerial Photo Decade Package

11/11/20

**Site Name:**

Hat Ranch
9701 Sedan Avenue
Manteca, CA 95337
EDR Inquiry # 6262441.8

**Client Name:**

Engeo
6399 San Ignacio Avenue
San Jose, CA 95119
Contact: Cody Johnson

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

***Search Results:***

| Year | Scale | Details | Source |
|---|---|---|---|
| 2016 | 1"=750' | Flight Year: 2016 | USDA/NAIP |
| 2012 | 1"=750' | Flight Year: 2012 | USDA/NAIP |
| 2009 | 1"=750' | Flight Year: 2009 | USDA/NAIP |
| 2006 | 1"=750' | Flight Year: 2006 | USDA/NAIP |
| 1993 | 1"=750' | Acquisition Date: January 01, 1993 | USGS/DOQQ |
| 1982 | 1"=750' | Flight Date: June 26, 1982 | USDA |
| 1975 | 1"=750' | Flight Date: November 08, 1975 | Cartwright |
| 1968 | 1"=750' | Flight Date: May 01, 1968 | USGS |
| 1963 | 1"=750' | Flight Date: June 03, 1963 | USDA |
| 1957 | 1"=750' | Flight Date: July 11, 1957 | USDA |
| 1950 | 1"=750' | Flight Date: March 03, 1950 | USDA |
| 1937 | 1"=750' | Flight Date: August 14, 1937 | USDA |

**When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.**

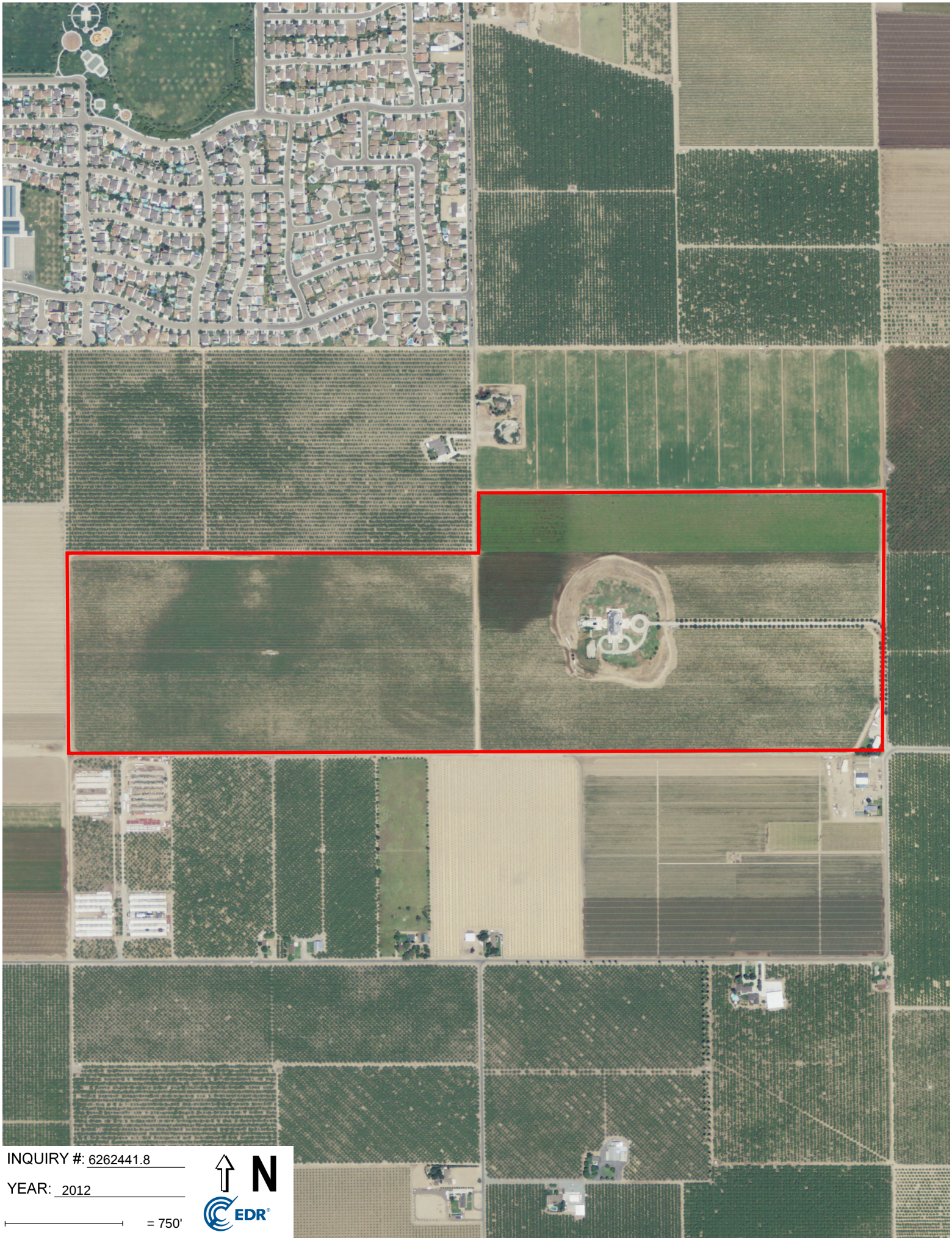
**Disclaimer - Copyright and Trademark Notice**

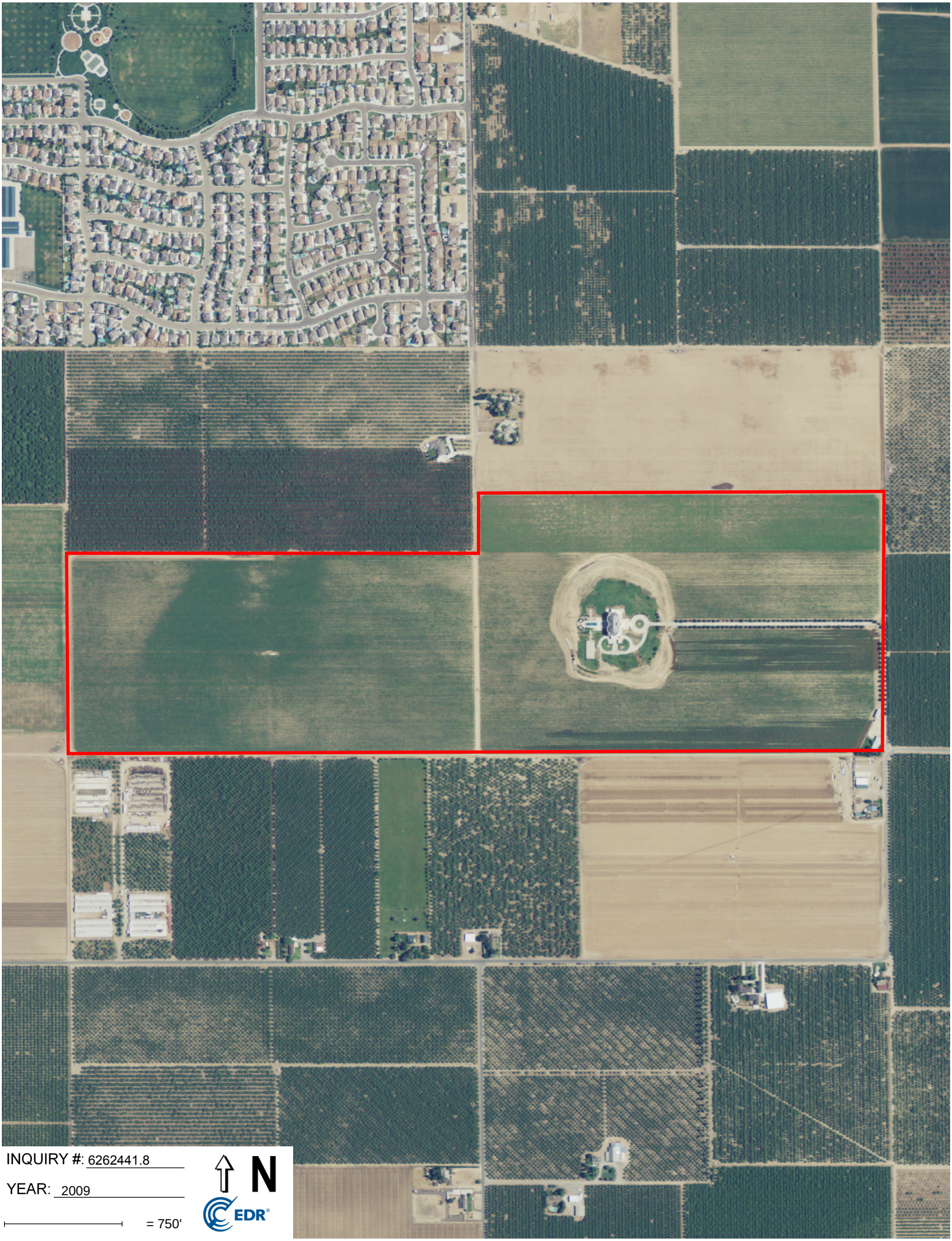
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INQUIRY #: 6262441.8
YEAR: 2016
= 750'
N
EDR


INQUIRY #: 6262441.8
YEAR: 2012
= 750'
N
EDR



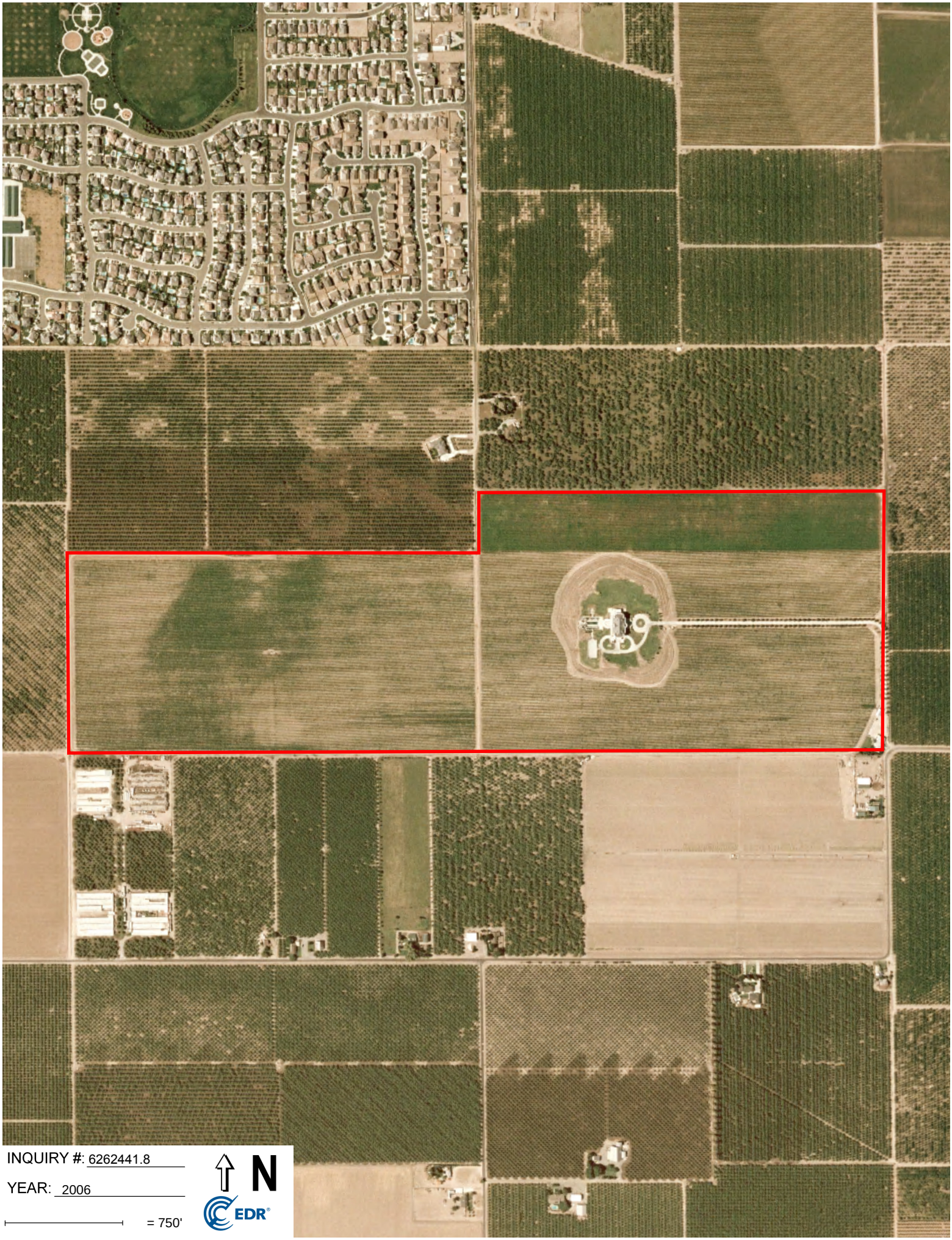
INQUIRY #: 6262441.8

YEAR: 2009

= 750'

N

EDR


INQUIRY #: 6262441.8
YEAR: 2006
= 750'
N
EDR



INQUIRY #: 6262441.8

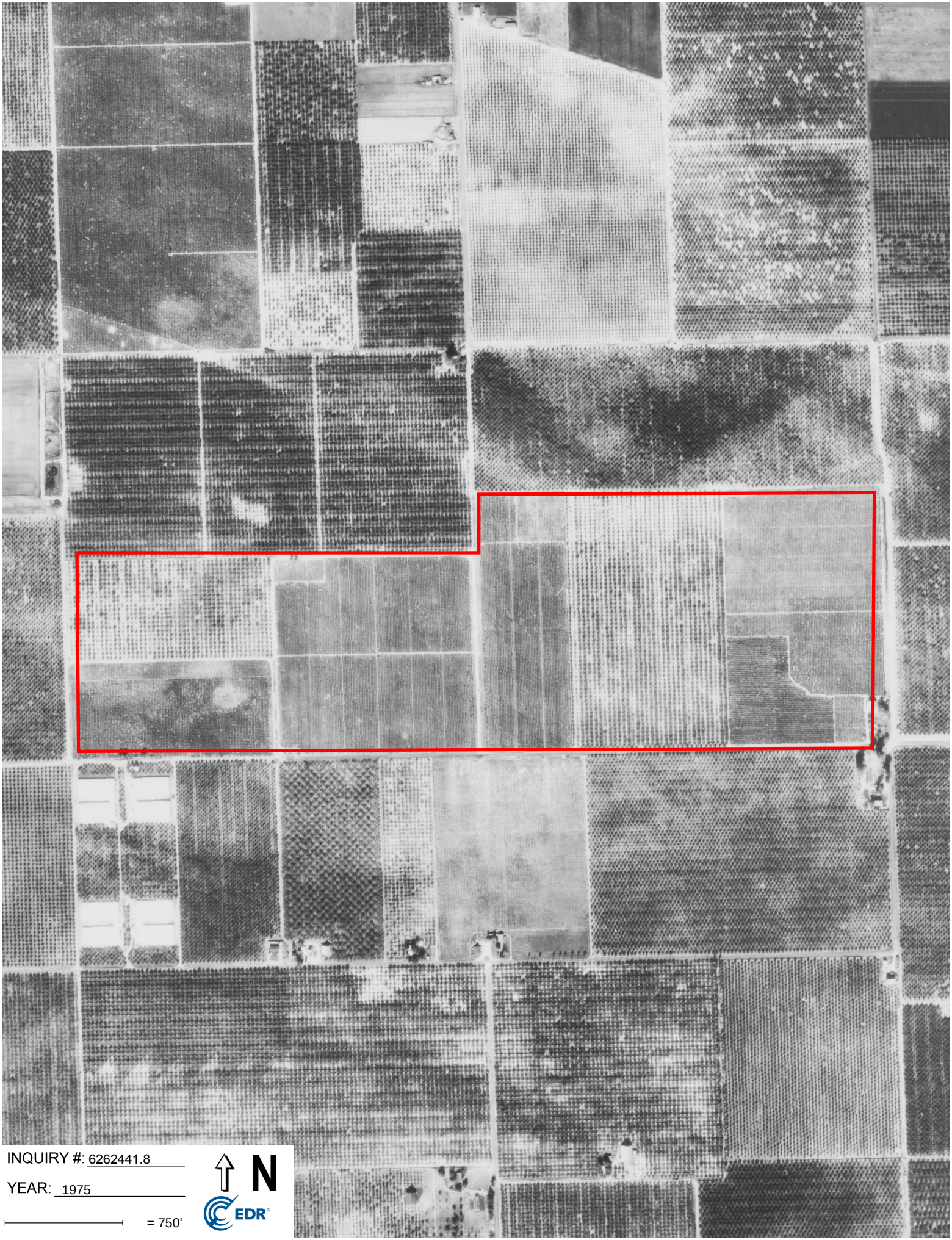
YEAR: 1993

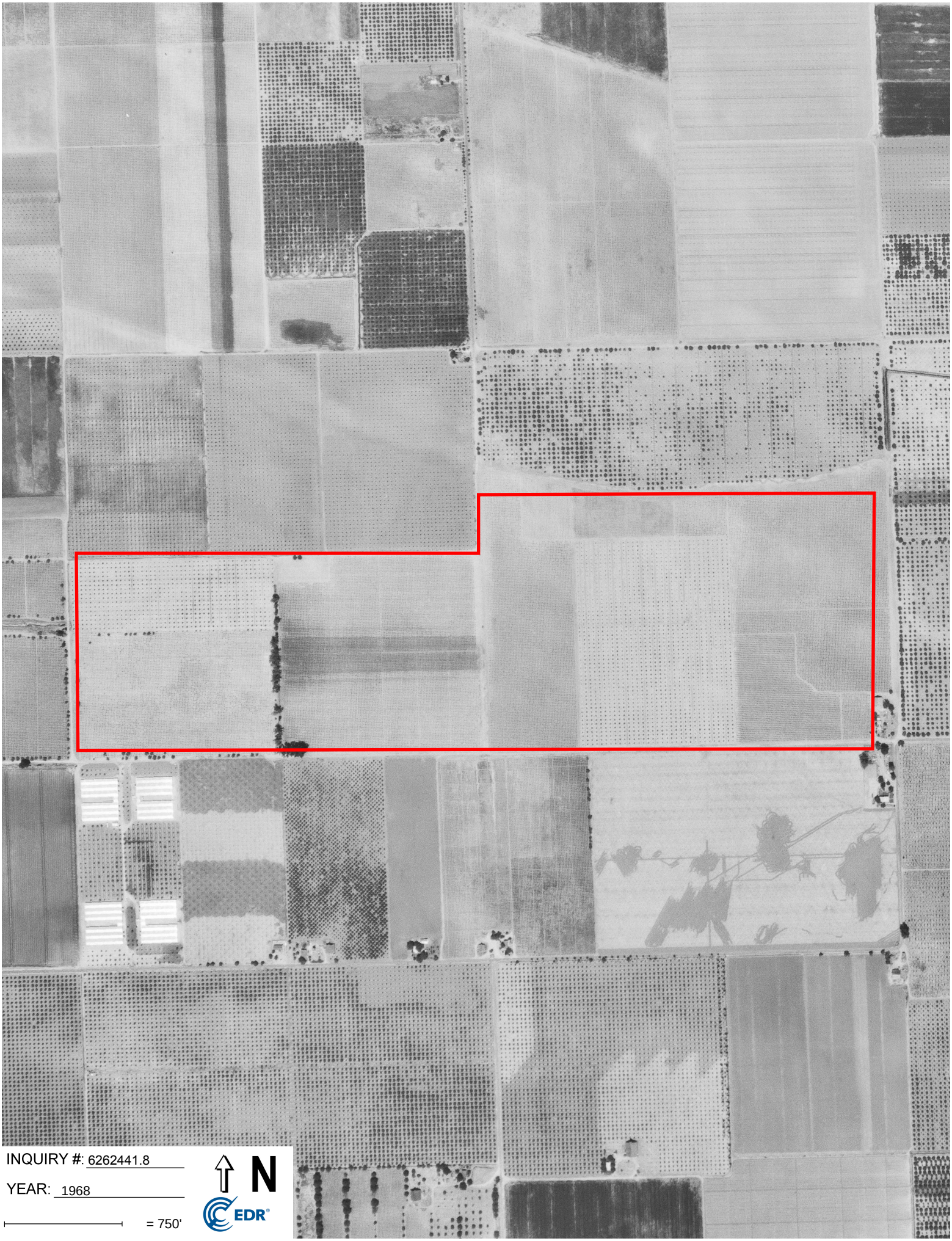
= 750'

N

EDR


INQUIRY #: 6262441.8
YEAR: 1982
= 750'
N
EDR


INQUIRY #: 6262441.8
YEAR: 1975
= 750'
N
EDR



INQUIRY #: 6262441.8

YEAR: 1968

= 750'

N

EDR



INQUIRY #: 6262441.8

YEAR: 1963

= 750'

N

EDR



INQUIRY #: 6262441.8

YEAR: 1957

= 750'

N

EDR



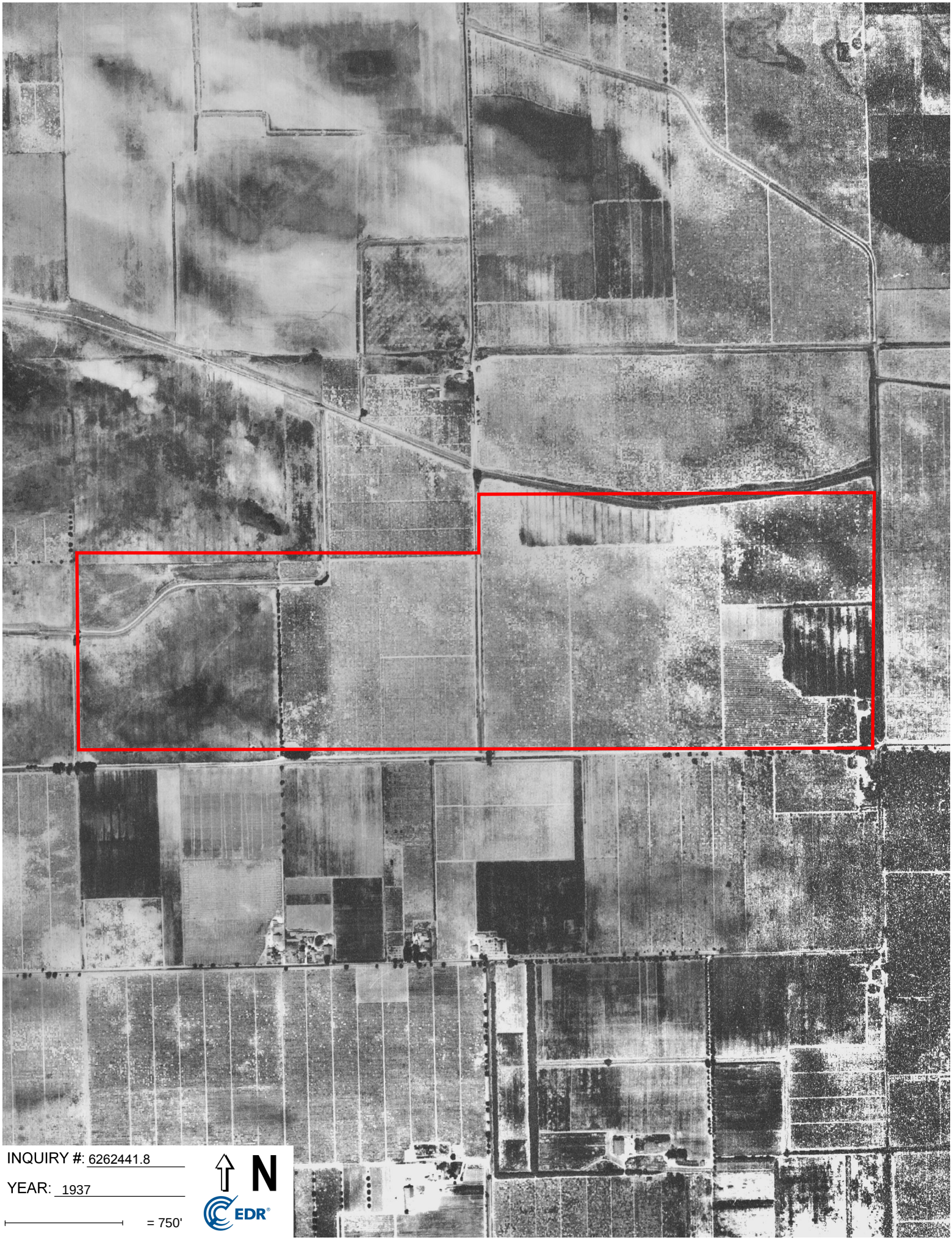

INQUIRY #: 6262441.8

YEAR: 1950

= 750'

N

EDR



INQUIRY #: 6262441.8

YEAR: 1937

= 750'

N

EDR



# APPENDIX E

## ENVIRONMENTAL DATA RESOURCES, INC.

## Sanborn Map Report

Hat Ranch

9701 Sedan Avenue

Manteca, CA 95337

Inquiry Number: 6262441.3

November 11, 2020

# Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

# Certified Sanborn® Map Report

11/11/20

**Site Name:**

Hat Ranch
9701 Sedan Avenue
Manteca, CA 95337
EDR Inquiry # 6262441.3

**Client Name:**

Engeo
6399 San Ignacio Avenue
San Jose, CA 95119
Contact: Cody Johnson

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Engeo were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

## *Certified Sanborn Results:*

**Certification #** DE3F-4783-ADE3

**PO #** 10175.000.001

**Project** Hat Ranch

### UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: DE3F-4783-ADE3

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

*The Sanborn Library LLC Since 1866™*

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# APPENDIX F

## ENVIRONMENTAL DATA RESOURCES, INC.

## City Directory

**Hat Ranch**
9701 Sedan Avenue
Manteca, CA 95337

Inquiry Number: 6262441.5
November 13, 2020

# The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

# TABLE OF CONTENTS

## SECTION

**Executive Summary**

**Findings**

**City Directory Images**

***Thank you for your business.***
Please contact EDR at 1-800-352-0050
with any questions or comments.

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# EXECUTIVE SUMMARY

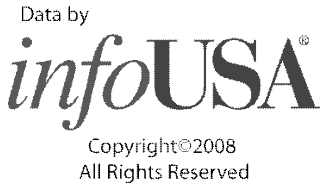
## DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

## RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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## RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

| Year | Target Street | Cross Street | Source |
|---|---|---|---|
| 2017 | ☑ | ☐ | EDR Digital Archive |
| 2014 | ☑ | ☐ | EDR Digital Archive |
| 2010 | ☑ | ☐ | EDR Digital Archive |
| 2005 | ☑ | ☐ | EDR Digital Archive |
| 2000 | ☑ | ☐ | EDR Digital Archive |
| 1995 | ☑ | ☐ | EDR Digital Archive |
| 1992 | ☑ | ☐ | EDR Digital Archive |
| 1985 | ☑ | ☐ | Haines Criss-Cross Directory |
| 1981 | ☑ | ☐ | Haines Criss-Cross Directory |
| 1977 | ☑ | ☐ | Haines Criss-Cross Directory |
| 1973 | ☑ | ☐ | POLK DIRECTORY CO |
| 1968 | ☑ | ☐ | POLK DIRECTORY CO |

# FINDINGS

## TARGET PROPERTY STREET

9701 Sedan Avenue
Manteca, CA 95337

| *Year* | *CD Image* | *Source* | |
|---|---|---|---|
| **S MANTECA RD** | | | |
| 2017 | pg A1 | EDR Digital Archive | |
| 2014 | pg A3 | EDR Digital Archive | |
| 2010 | pg A6 | EDR Digital Archive | |
| 2005 | pg A9 | EDR Digital Archive | |
| 2000 | pg A12 | EDR Digital Archive | |
| 1995 | pg A15 | EDR Digital Archive | |
| 1992 | pg A17 | EDR Digital Archive | |
| 1985 | pg A19 | Haines Criss-Cross Directory | |
| 1981 | pg A21 | Haines Criss-Cross Directory | |
| 1977 | pg A23 | Haines Criss-Cross Directory | |
| 1973 | pg A25 | POLK DIRECTORY CO | |
| 1968 | pg A26 | POLK DIRECTORY CO | |
| 1968 | pg A27 | POLK DIRECTORY CO | |
| **SEDAN AVE** | | | |
| 2017 | pg A2 | EDR Digital Archive | |
| 2014 | pg A5 | EDR Digital Archive | |
| 2010 | pg A8 | EDR Digital Archive | |
| 2005 | pg A11 | EDR Digital Archive | |
| 2000 | pg A14 | EDR Digital Archive | |
| 1995 | pg A16 | EDR Digital Archive | |
| 1992 | pg A18 | EDR Digital Archive | |
| 1985 | pg A20 | Haines Criss-Cross Directory | |
| 1981 | pg A22 | Haines Criss-Cross Directory | |
| 1977 | pg A24 | Haines Criss-Cross Directory | |
| 1973 | - | POLK DIRECTORY CO | Street not listed in Source |
| 1968 | - | POLK DIRECTORY CO | Street not listed in Source |

# FINDINGS

## CROSS STREETS

No Cross Streets Identified

# City Directory Images

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

# S MANTECA RD 2017

20445 CAIN, PATRICK W
20599 SMITH, JERRY
20675 JOBE, KEVIN
20955 KIZLIN, JOSEPH J
21447 HAAN, CELAINE
21908 BURGDORF, NORM J
22101 ANDRE, JOSE
22445 GAINOUS, JASON T
22621 VANUNEN, SAMUEL B
22886 MCKENZIE, FRED E
22942 STLOUIS, SUE S
22974 TAGLIABUE, EDWARD E
23064 KELLUM, DAVID
23079 FREITAS, ASHLEY M
23165 ROILAND, JUSTIN
23177 IRWIN, ANTOINETTE J
23258 LUCAS, JENNIFER
23261 OLTMER, AUGUSTINA
23563 NEW BUDS NURSERY INC
23585 RODDAN, DONNA P
23601 RODDAN, TODD J
23703 ORTA, RAYMOND
23777 SIQUIG, ELISE S
23861 LEONARDO, LARRY L
23901 JEHOVAHS WITNESSES MANTECA
24310 DUNAWAY, ROBERT D
24344 MARCHINI, MARCO V
24858 COSTA, ADALDERTO D
24916 JOHN A MACHADO DAIRY FARMS
MACHADO, JOSEPH J
24918 RAYA, YOLANDA
24920 GARCIA, MARTIN
25172 ONTIVEROS, ALMA
26326 CORSO, ANDREA L
26700 MONEGAN, LINDA M
27101 AVILA, JIM K
27133 MAYS, CATHRINE
27145 FITCH, KIONA L
28019 ALDACO, MARIA
28021 LOPEZ, JOSE
28031 BRASIL, JAMES
28225 HICKEN, GRANT K
28325 HICKEN, GRANT S
28358 MACHADO, ROBERT A
28573 WALTER, JANET A

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

## SEDAN AVE 2017

| | |
|---|---|
| 6875 | COLLINS, SHIRLEY J |
| 7563 | ACOSTA, STEPHANIE |
| 7707 | RANGEL, MANUEL M |
| 7777 | DICKMAN, GREG |
| 8118 | SHANKS, KEITH S |
| 8291 | BURGESS RANCH |
| 8669 | VANLAAR, DURK H |
| 8887 | VANVUREN, SHERWOOD A |
| 9011 | WATSONS REPAIR SERVICE |
| | WILLIAMS, KEITH W |
| 9500 | FREDRIKS, STEVE G |

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

# S MANTECA RD 2014

20445 SILVA, JOHN M
20599 SMITH, JERRY
20675 OCCUPANT UNKNOWN,
20687 OCCUPANT UNKNOWN,
20955 KIZLIN, JAN J
21447 KOETSIER, IAN J
21908 BURGDORF, NORM J
22101 ANDRE, JOSE
22445 GAINOUS, JASON T
22492 STLOUIS, SUE S
22621 VANUNEN, SAMUEL B
22886 MCKENZIE, FRED E
22918 GILLIT, DANIEL R
22942 CHAPMAN, LEE A
22974 TAGLIABUE, EDWARD E
23064 BLEWETT, NATHAN D
23079 FREITAS, ASHLEY M
23165 ROILAND, JUSTIN
23177 RINCON, LISA
23258 OCCUPANT UNKNOWN,
23261 BRUNNER, WALTER M
23412 ANDERSON, JAMES C
23563 NEW BUDS NURSERY INC
23585 RODDAN, TODD J
23601 RODDAN, TODD J
23703 ORTA, RAYMOND
23777 SIQUIG, ELISE S
23861 OCCUPANT UNKNOWN,
23901 JEHOVAHS WITNESSES MANTECA
OCCUPANT UNKNOWN,
24310 DUNAWAY, ROBERT D
24320 OCCUPANT UNKNOWN,
24344 MARCHINI, MARCO
24858 COSTA, ADALDERTO D
24916 JOHN A MACHADO DAIRY FARMS
MACHADO, JOSEPH J
24918 PANTOJA, YOLANDA
25172 PISANO, DE A
26326 ROMO, CECELIA
26338 OCCUPANT UNKNOWN,
26700 LANGENHORST, TOM E
27101 AVILA, JIM K
27133 OCCUPANT UNKNOWN,
27145 FITCH, KIONA L
27151 DESOTO, FRANK P
27464 DETATORRE, SOLEDAD
28019 OCCUPANT UNKNOWN,
28028 MACHADO, ROBERT A
28031 BRASIL, ANTONIO P
28225 HICKEN, GRANT K

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

## S MANTECA RD 2014 (Cont'd)

28325 HICKEN, SCOTT
28358 MACHADO, ROBERT A
28573 WALTER, JANET A

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

## SEDAN AVE 2014

| | |
|---|---|
| 6875 | OCCUPANT UNKNOWN, |
| 6895 | COLLINS, MARYLOU |
| 7125 | THORNTON, MICHAEL T |
| 7189 | QUARESMA, RICHARD J |
| 7563 | COSTA, RAY M |
| 7707 | RANGEL, MANUEL |
| 8118 | SHANKS, KEITH S |
| 8291 | BURGESS RANCH |
| | OCCUPANT UNKNOWN, |
| 8301 | MORENO, RUTHBELI T |
| 8391 | BURGESS, WILLIAM F |
| 8603 | WILLIAMS, PEARLINE |
| 8669 | VANLAAR, DURK H |
| 8887 | VANVUREN, SHERWOOD A |
| 9011 | WATSONS REPAIR SERVICE |
| 9500 | FREDRIKS, STEVE G |
| 9715 | PLANT SCIENCES INC |
| 9720 | OCCUPANT UNKNOWN, |

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

# S MANTECA RD 2010

20445 OCCUPANT UNKNOWN,
20599 BLANCO, FRANCISCO
20675 GUZMAN, SALVADOR S
20955 KIZLIN, JAN P
21336 CHAPMAN, LEE A
21350 SYLVIA, GEORGE F
21434 DIAZ, DANIEL U
21447 KOETSIER, IAN J
21908 BURGDORF, N
22101 OCCUPANT UNKNOWN,
22445 OCCUPANT UNKNOWN,
22492 LOUIS, SUE S
22621 OCCUPANT UNKNOWN,
VAN UNEN PLUMBING
22886 MCKENZIE, FRED J
22918 OCCUPANT UNKNOWN,
22942 OCCUPANT UNKNOWN,
22974 BETHKE, CYNTHIA K
23064 BLEWETT, NATHAN D
23079 FREITAS, RALPH D
23165 ROILAND, MARK E
23177 OCCUPANT UNKNOWN,
23258 OCCUPANT UNKNOWN,
23261 BRUNNER, WALTER M
23412 ANDERSON, JAMES C
23563 NEW BUDS NURSERY INC
23585 ARNOLD, MARK D
23601 RODDAN, TODD J
23703 ORTA, RAYMOND
23777 SIQUIG, ELISE S
23861 LEONARDO, LARRY J
23901 JEHOVAHS WITNESSES
PORTELA, GERMAN A
24310 DUNAWAY, ROBERT D
24344 OCCUPANT UNKNOWN,
24390 MACHADO, JOE J
24858 COSTA, FELICIANO D
24916 JOE J MACHADO & SONS
MACHADO, JOE J
24918 PANTOJA, GRACIELA
24920 OCCUPANT UNKNOWN,
24922 OCCUPANT UNKNOWN,
25172 PISANO, DE A
25590 PATINO, GERARDO
26326 ROMO, CECELIA
26338 OCCUPANT UNKNOWN,
26630 SEEGERS, ANN E
26700 MONEGAN, LINDA M
27101 AVILA, JIM K
27151 DESOTO, FRANK P

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

## S MANTECA RD 2010 (Cont'd)

27464 AYALA, CONTRERAS
28019 DIAS, EMILIO J
28028 MACHADO, ROBERT A
28043 OCCUPANT UNKNOWN,
28325 HICKEN, GRANT S
28358 MACHADO, ROBERT A
28573 OCCUPANT UNKNOWN,

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

## SEDAN AVE 2010

| | |
|---|---|
| 6875 | COLLINS, MARYLOU M |
| 7125 | THORNTON, MICHAEL T |
| 7563 | YAMASAKI, JAMIE |
| 7570 | VELAZQUEZ, RUBEN R |
| 7707 | OCCUPANT UNKNOWN, |
| 8118 | SHANKS, KEITH S |
| 8291 | BURGESS RANCH |
| | MARTINEZ, MARTIN D |
| 8301 | OCCUPANT UNKNOWN, |
| 8391 | BURGESS, WILLIAM F |
| 8603 | WILLIAMS, PEARLINE |
| 8669 | VANLAAR, DURK H |
| 8887 | VANVUREN, WOODY |
| 9011 | SILAGI, NORMA F |
| 9500 | FREDRIKS, STEVE G |
| 9715 | PLANT SCIENCES INC |
| 9720 | SERRANO, JAIME |

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

# S MANTECA RD 2005

20445 SILVA, JOHN M
20599 BLANCO, FRANCISCO
20675 GUZMAN, AMALIA
20955 KIZLIN, JAN P
21010 LILES, MARK R
21336 LARSEN, RICHARD L
21350 SYLVIA, GEORGE F
21434 DIAZ, DANIEL
21447 KOETSIER, IAN J
21908 BURGDORF, NORM J
22101 OCCUPANT UNKNOWN,
22445 OCCUPANT UNKNOWN,
22621 VAN UNEN PLUMBING
VANUNEN, SAMUEL B
22886 MCKENZIE, FRED J
22918 OCCUPANT UNKNOWN,
22974 BETHKE, CYNTHIA A
23064 BLEWETT, WILLIAM H
NATHAN BLEWETT
23079 FREITAS, RALPH D
23165 ROILAND, MARK E
23177 DAVIS, CYNTHIA R
23258 EVANS, TAMMY D
23261 BRUNNER, WALTER M
23412 ANDERSEN, JAMES C
23585 RODDAN, TODD J
23601 NEW BUDS NURSERY
RODDAN, TODD J
23703 ORTA, SONNY
23777 SIQUIG, ELISE S
23861 LEONARDO, LARRY J
23901 WEST CONGREGATION JHVAVAS WITNESS
24310 DUNAWAY, ROBERT D
24320 BLOOM, BRAD A
24390 THEILER, JAMES E
24858 COSTA, FELICIANO
24916 DYK JANET D LP
MACHADO JOE J & SONS
MACHADO, RAYMOND J
24918 OCCUPANT UNKNOWN,
24920 RICHINA, RICHARD R
25172 LOPEZ, JOSE
25570 BEDOY, MARIA
25590 PATINO, GERARDO
26326 OCCUPANT UNKNOWN,
26338 DERUYTER, TROY D
26630 SEEGERS, ANN E
26700 LANGENHORST, TOM E
27101 AVILA, JAMES K
27145 OCCUPANT UNKNOWN,

## S MANTECA RD 2005 (Cont'd)

27151 DESOTO, FRANK P
28019 OCCUPANT UNKNOWN,
28031 DIAS, EMILIO J
28043 HURTADO, JESUS S
28225 HICKEN, GRANT K
KEN HICKEN
28325 HICKEN, SCOTT
28358 MACHADO, DAVID A

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

## SEDAN AVE 2005

| | |
|---|---|
| 6875 | COLLINS, MARYLOU M |
| 7125 | THORNTON, MICHAEL T |
| 7563 | COSTA, RAY M |
| 7570 | VELAZQUEZ, RUBEN R |
| 7707 | OCCUPANT UNKNOWN, |
| 8118 | JOHNSON, RODGER N |
| 8291 | BURGESS RANCH |
| | MARTINEZ, MARTIN D |
| 8603 | WILLIAMS, PEARLINE |
| 8669 | VANLAAR, DURK |
| 8887 | VANVUREN, WOODY |
| 9011 | SILAGI, LEWIS |
| 9500 | OCCUPANT UNKNOWN, |
| 9715 | PLANT SCIENCES INC |
| 9720 | SERRANO, JAIME |

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

## S MANTECA RD 2000

20445 LOEHRER, RAYMOND F
20599 OCCUPANT UNKNOWN,
20675 OCCUPANT UNKNOWN,
20687 SCHMIEDT, CLARA J
20696 SCHMIEDT, LESTER A
TRI AG FERTILIZERS INCORPORATED
TRI AG FERTILIZERS INCORPORATED ADMINISTRAON OFFICE
20818 OCCUPANT UNKNOWN,
20955 OCCUPANT UNKNOWN,
21010 LILES, MARK
21336 LARSEN, BARBARA J
21338 SYLVIA, GEORGE
21350 OCCUPANT UNKNOWN,
21447 KOETSIER, IAN
22886 MCKENZIE, FRED
22918 GILLIT, C
22942 BOYER, GENE
22974 OCCUPANT UNKNOWN,
23064 BLEWETT, WILLIAM H
23079 FREITAS, RALPH
23165 ROILAND, MARK
23177 DAVIS, JEFFREY M
23258 OCCUPANT UNKNOWN,
23261 BRUNNER, WALTER
23402 OCCUPANT UNKNOWN,
23703 JOHNSON, PAULA
23777 OCCUPANT UNKNOWN,
23861 LEONARDO, LARRY
23901 JEHOVAHS WITNESSES
24310 DUNAWAY, ROBERT
24320 BLOOM, BRAD
24390 THEILER, JAMES E
24858 COSTA, F
24916 DYK, DARYL
MACHADO JOE J & SONS
MACHADO, JOE J
24918 OCCUPANT UNKNOWN,
24920 RICHINA, SHARON A
25570 OCCUPANT UNKNOWN,
25590 OCCUPANT UNKNOWN,
26326 OCCUPANT UNKNOWN,
26338 DERUYTER, TROY
26630 SEEGERS, ANN E
26700 OCCUPANT UNKNOWN,
27101 BROCCHINI, ALFRED
27133 DESOTO, SHERRI L
27151 DESOTO, FRANK P
27464 BARAJAS, MARIA E
28019 DESOUSA, JOSE M
28043 ALMADA, JOSE

| Target Street | Cross Street | Source |
| --- | --- | --- |
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## S MANTECA RD 2000 (Cont'd)

28225 HICKEN, GRANT K
28358 FURTADO, FRANK
28575 SANCHEZ, ALICIA

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

## SEDAN AVE 2000

| | |
|---|---|
| 7563 | COSTA, RAY |
| 7570 | VELAZQUEZ, RUBEN |
| 7707 | OCCUPANT UNKNOWN, |
| 7777 | MARTINS, FRANK |
| 8118 | JOHNSON, RODGER |
| 8291 | OCCUPANT UNKNOWN, |
| 8603 | OCCUPANT UNKNOWN, |
| 8669 | OCCUPANT UNKNOWN, |
| 8887 | OCCUPANT UNKNOWN, |
| 9011 | OCCUPANT UNKNOWN, |
| 9500 | FREDRIKS, STEVE |
| 9715 | PLANT SCIENCES INCORPORATED |

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

# S MANTECA RD 1995

| | |
|---|---|
| 20445 | PERRY, JESSICA |
| 20696 | SCHMIEDT, LESTER A |
| | TRI AG SVC INC |
| 20818 | OCCUPANT UNKNOWNN |
| 20955 | CAPPS, BILL |
| 21336 | OCCUPANT UNKNOWNN |
| 21338 | SYLVIA, GEORGE |
| 21447 | KOETSIER, IAN |
| 21908 | BURGDORF, NORM |
| 22445 | FELLS, HARRY L |
| 22886 | MCKENZIE, FRED |
| 22918 | GILLIT, C |
| 22942 | WASHINGTON, JOSIE M |
| 22974 | CRIST, G R |
| 23064 | BLEWETT, W H |
| 23079 | FREITAS, RALPH |
| 23165 | ROILAND, MARK |
| 23177 | ROILAND, MARK E |
| 23261 | BRUNNER, WALTER M |
| 23412 | OCCUPANT UNKNOWNN |
| 23703 | NEWHARD, RICHARD J |
| 23777 | OCCUPANT UNKNOWNN |
| 23861 | LEONARDO FEED & SUPPLY |
| | LEONARDO, LARRY |
| 23901 | WEST CONGREGATION OF JEHOVAHS |
| 24310 | DUNAWAY, ROBERT |
| 24320 | OCCUPANT UNKNOWNN |
| 24390 | THEILER, JAMES E |
| 24858 | COSTA, F |
| 24916 | DYK, DARYL |
| | MACHADO, JOE J |
| 25875 | MANDUJANO, E |
| 26326 | MACHADO, RICHARD JR |
| 26338 | DERUYTER, TROY |
| 26630 | SEEGERS, ROLLAND |
| 26700 | SEEGERS, R L |
| 27101 | OCCUPANT UNKNOWNN |
| 27151 | DESOTO, FRANK P |
| 27464 | BARAJAS, TRISHA |
| 28031 | BRASIL, GILDA |
| 28043 | OCCUPANT UNKNOWNN |
| 28225 | HICKEN, GRANT K |
| 28358 | FURTADO, FRANK |
| 28573 | STELLHORNS ARABIANS |

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

## SEDAN AVE 1995

| | |
|---|---|
| 7563 | COSTA, RAY |
| 7570 | VELAZQUEZ, RUBEN |
| 7707 | CATON, BRUCE |
| 8118 | JOHNSON, RODGER |
| 8669 | SEPULVEDA, ROBERT |
| 9500 | FREDRIKS, STEVE |
| 9701 | OCCUPANT UNKNOWNN |
| 9715 | AGUILAR, HENRY |

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

# S MANTECA RD 1992

20696 SCHMIEDT, LESTER A
TRI AG SERVICE INC
20955 CAPPS, BILL
21010 EVANS BOB TRUCKING
21447 KOETSIER, IAN
22886 MCKENZIE, FRED
22918 GILLIT, C
22942 WASHINGTON, JOSIE M
22974 CRIST, G R
23064 BLEWETT, W H
23412 DEJONG, CRAIG
23861 LEONARDO FEED&SPLY
LEONARDO, LARRY
23901 JEHOVAHS WITNESSES
24310 DUNAWAY, ROBERT
24390 THEILER, JAMES E
24858 COSTA, F
24916 GONZALEZ, HECTOR
MACHADO JOE J&SONS
25570 RANJEL, ROBERTO
25590 MADRIGAL, C
26326 MACHADO, RICHARD JR
26630 SEEGERS, ROLLAND
26700 SEEGERS, ROLLAND L
27101 BROCCHINI, ALFRED
27151 DESOTO, FRANK P
28021 SOUSA, ANA
28225 HICKEN, GRANT K
28358 FURTADO, FRANK
28573 STELLHORN ARABIANS

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | EDR Digital Archive |

## SEDAN AVE 1992

| | |
|---|---|
| 7563 | COSTA, RAY |
| 7570 | VELAZQUEZ, RUBEN |
| 8601 | SOLORZANO, F |
| 8887 | VANVUREN, S |
| 9701 | GAVINO, G |
| 9715 | AGUILAR, HENRY |

| Target Street | Cross Street | Source |
|---|---|---|
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# S MANTECA RD 1985

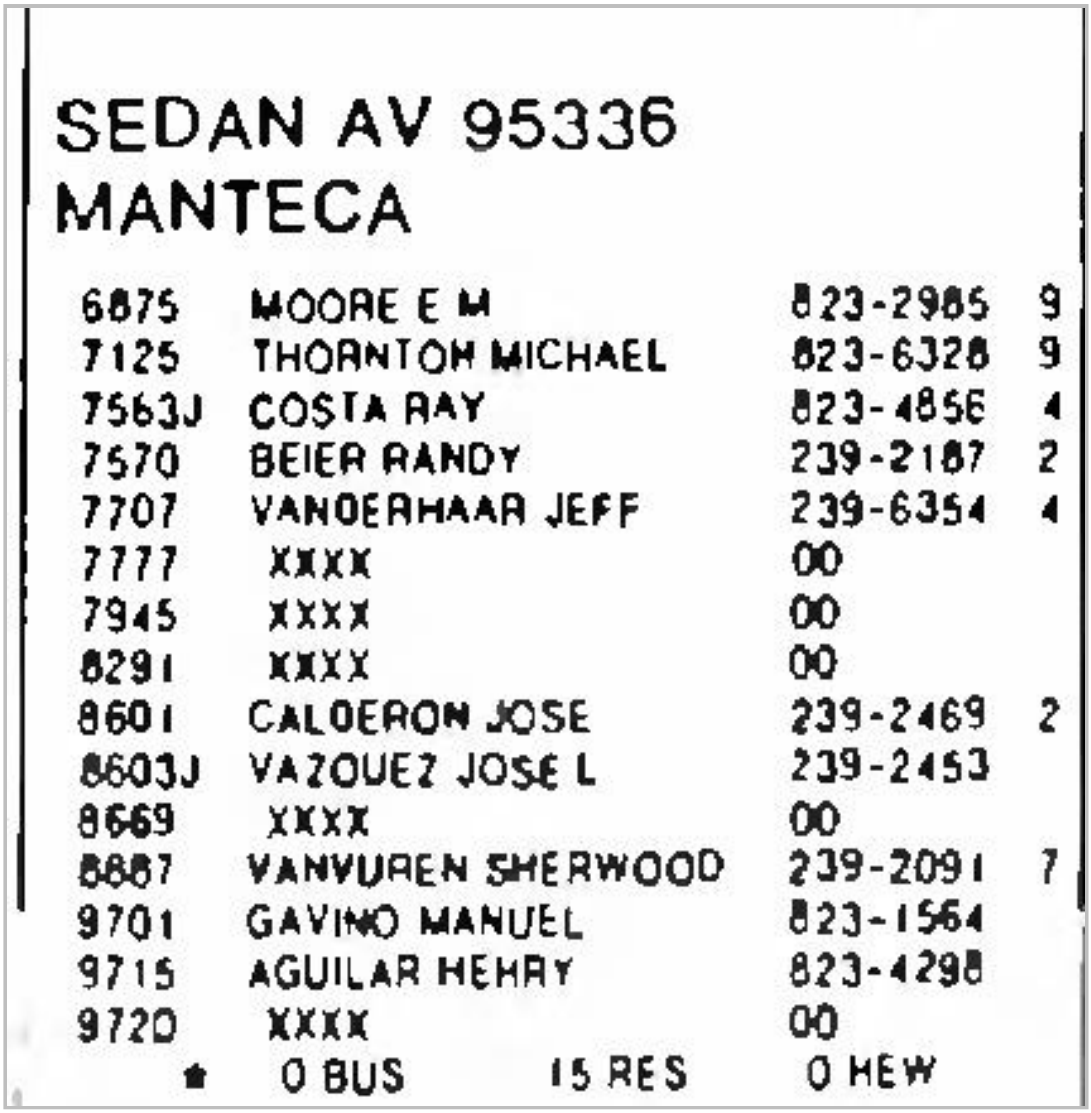
MANTECA RD S 95336
MANTECA

| | | | |
|---|---|---|---|
| 19111 | XXXX | 00 | |
| 19129 | SOBRERO JAMES M | 823-4110 | |
| 19145 | RAIN SAM | 823-5464 | |
| 19243 | XXXX | 00 | |
| 19530 | XXXX | 00 | |
| 19782 | XXXX | 00 | |
| 19856 | BREITENBUCHER D W | 823-2238 | |
| 19881 | XXXX | 00 | |
| 20041 | OUARESMA GEORGE R | 823-5065 | |
| 20101 | SILVA MARIO | 823-1495 | 9 |
| 20153 | GOUDY KIRK | 239-4543 | +5 |
| 20185 | XXXX | 00 | |
| 20445 | XXXX | 00 | |
| 20599 | MCFARLIN LLOYD | 239-4987 | 4 |
| 20687 | XXXX | 00 | |
| 20696 | SCHMIEDT LESTER A | 823-5315 | 9 |
| | TRI AG SERVICE INC | 823-7179 | 4 |
| 20955 | CAPPS BILL | 823-4638 | 9 |
| 21010 | EVANS BOB TRUCKING | 239-3407 | 7 |
| 21447 | WINTERS GARY | 823-4412 | 0 |
| 22445 | XXXX | 00 | |
| 22621 | PALOMINO JOSE | 239-1435 | 6 |
| 22886 | MCKENZIE FRED | 823-7851 | 8 |
| 22918 | GILLIT CLIFFORD | 823-7878 | |
| 22942 | WASHINGTON J M | 823-9485 | 0 |
| 22974 | CRIST G R | 823-8421 | 4 |
| 23064 | BLEWETT T A | 823-6038 | 7 |
| | BLEWETT W H | 823-1549 | |
| 23165 | ROLAND MARK | 823-4365 | |
| 23258 | HEUVEL RON | 823-6966 | +5 |
| 23261 | XXXX | 00 | |
| 23285 | XXXX | 00 | |
| 23378 | RODRIGUEZ LUPE JR | 823-5500 | 8 |
| 23412 | XXXX | 00 | |
| 23703 | CUTBURTH EVERETT | 823-3447 | +5 |
| 23774 | CAMPER C T | 823-4142 | 7 |
| 23777 | XXXX | 00 | |
| 23861 | XXXX | 00 | |
| 23901 | XXXX | 00 | |
| 23974 | XXXX | 00 | |
| 24390 | THEILER JAMES E | 823-6646 | |
| 24858 | COSTA FELICIANO | 823-1588 | +5 |
| | COSTA HENRY | 239-2318 | 7 |
| 24892 | XXXX | 00 | |
| 24918 | DYK DARYL | 823-5013 | 6 |
| | MACHADO JOE J | 823-6605 | |
| 24918 | SOUZA MANUEL | 823-8293 | 4 |
| 24920 | PIRES MANUEL JR | 823-8232 | 1 |
| 25172 | XXXX | 00 | |
| 25570 | XXXX | 00 | |
| 25590 | MACHADO J R | 823-3541 | +5 |
| 26326 | DERUYTER CORNIE | 823-4273 | 7 |
| 26630 | SEEGERS ROLLAND | 823-7076 | |
| 26700 | SEEGERS R L | 823-2908 | 3 |
| 26955 | XXXX | 00 | |
| 27101 | BROCCHINI ALFRED | 823-2340 | 7 |
| 27151 | DESOTO FRANK | 823-6696 | |
| | DESOTO FRANK P | 239-9293 | 4 |
| 27464 | XXXX | 00 | |
| 27620 | FAGUNDES WALLACE | 823-6678 | |
| 28019 | ALMADA JOSE | 239-5150 | 2 |
| | BRINGAS JOSHUA | 239-1543 | +5 |
| 28225 | HICKEN GRANT KEN | 823-5141 | |
| 28358 | FURTADO FRANK | 823-1905 | +5 |
| 28410 | DIAS TONY | 823-1643 | +5 |
| 28573 | STELLHORN ARABIANS | 823-3644 | |

* 3 BUS 63 RES 8 NEW

| Target Street | Cross Street | Source |
|---|---|---|
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## SEDAN AVE 1985



SEDAN AV 95336
MANTECA

| | | | |
|---|---|---|---|
| 6875 | MOORE E M | 823-2985 | 9 |
| 7125 | THORNTOH MICHAEL | 823-6328 | 9 |
| 7563J | COSTA RAY | 823-4856 | 4 |
| 7570 | BEIER RANDY | 239-2187 | 2 |
| 7707 | VANOERHAAR JEFF | 239-6354 | 4 |
| 7777 | XXXX | 00 | |
| 7945 | XXXX | 00 | |
| 8291 | XXXX | 00 | |
| 8601 | CALOERON JOSE | 239-2469 | 2 |
| 8603J | VAZOUEZ JOSE L | 239-2453 | |
| 8669 | XXXX | 00 | |
| 8887 | VANVUREN SHERWOOD | 239-2091 | 7 |
| 9701 | GAVINO MANUEL | 823-1564 | |
| 9715 | AGUILAR HEHRY | 823-4298 | |
| 9720 | XXXX | 00 | |

★ 0 BUS 15 RES 0 HEW

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | Haines Criss-Cross Directory |

# S MANTECA RD 1981

## MANTECA RD S 95336
## MANTECA

| | | | |
|---|---|---|---|
| 19111 | XXXX | 00 | |
| 19129 | SOBRERO JAMES M | 823-4110 | |
| 19145 | RAIN SAM | 823-5464 | |
| 19243 | ANGELOS WLDG&FBRCTG | 823-2290 | 0 |
| | HOLDENS MACHINE SV | 823-4233 | +1 |
| 19530 | XXXX | 00 | |
| 19782 | DURAO JACK | 823-2943 | |
| 19856 | BREITENBUCHER D W | 823-2238 | |
| | NIES EARL | 239-3891 | +1 |
| 19881 | ELLIOTT GLENN | 823-6600 | +1 |
| 20041 | QUARESMA GEORGE R | 823-5065 | |
| 20101 | SILVA MARIO | 823-1495 | 9 |
| 20153 | XXXX | 00 | |
| 20185 | BROWN THOMAS W | 823-7817 | 0 |
| 20445 | XXXX | 00 | |
| 20599 | DAVIS DAVID | 823-8067 | +1 |
| | YARBOROUGH JOHN | 823-8067 | +1 |
| 20687 | GUZMAN BENNIE | 239-1907 | 7 |
| 20696 | SCHMIEDT LESTER A | 823-5315 | 9 |
| | SCHMIEDTS SOIL SV | 823-7178 | 8 |
| 20955 | CAPPS BILL | 823-4638 | 9 |
| 21010 | EVANS BOB | 239-3407 | 7 |
| 21024 | MARTINEZ RAUL | 823-2752 | 7 |
| 21336 | XXXX | 00 | |
| 21338 | XXXX | 00 | |
| 21350 | SILVA ROBERT | 823-7291 | 5 |
| 21434 | XXXX | 00 | |
| 21447 | WINTERS GARY | 823-4412 | 0 |
| 22445 | FELLS HARRY L | 823-7751 | |
| 22621 | PALOMINO JOSE | 239-1435 | 6 |
| 22886 | MCKENZIE FRED | 823-7851 | 8 |
| 22918 | GILLIT CLIFFORD | 823-7878 | |
| 22942 | WASHINGTON J M | 823-9485 | 0 |
| 22974 | TURNER ROYNELL | 823-0800 | +1 |
| 23064 | BLEWETT T A | 823-6038 | 7 |
| | BLEWETT W H | 823-1549 | |
| 23165 | ROILAND MARK | 823-4385 | 5 |
| 23261 | FONSECA ALBERT JR | 823-6433 | 5 |
| 23285 | XXXX | 00 | |
| 23378 | RODRIGUEZ LUPE JR | 823-5500 | 8 |
| 23412 | ANDERSEN A L | 823-6629 | |
| 23703 | HAHN HILARY | 239-9428 | 5 |
| 23774 | CAMPER C T | 823-4142 | 7 |
| 23777 | XXXX | 00 | |
| 23861 | HURST GEORGETTE E | 239-4356 | 8 |
| 23901 | XXXX | 00 | |
| 23974 | XXXX | 00 | |
| 24390 | THEILER JAMES E | 823-6646 | |
| 24858 | COSTA HENRY | 239-2318 | 7 |
| 24892 | XXXX | 00 | |
| 24916 | OYK DARYL | 823-5013 | 6 |
| | MACHADO JOE J | 823-6605 | |
| 24918 | XXXX | 00 | |
| 24920 | PIRES MANUEL JR | 823-8232 | +1 |
| 25172 | XXXX | 00 | |
| 25570 | DIAS TONY | 823-1643 | 0 |
| 26326 | DERUYTER CORNIE | 823-4273 | 7 |
| 26630 | SEEGERS ROLLAND | 823-7076 | |
| 26700 | SEEGERS R L | 823-2908 | 3 |
| 26955 | GREEN BILLY | 823-6173 | +1 |
| 27101 | BROCCHINI ALFRED | 823-2340 | 7 |
| 27151 | DESOTO FRANK | 823-6696 | |
| 27620 | FAGUNDES WALLACE | 823-6678 | |
| 28019 | GOES JORGE | 823-6913 | +1 |
| 28225 | HICKEN GRANT KEN | 823-5141 | 5 |
| 28358 | MENDOZA STEVEN | 239-3856 | +1 |
| 28573 | STELLHORN ARABIANS | 823-3644 | 5 |

★ 4 BUS 63 RES 10 NEW

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | Haines Criss-Cross Directory |

**SEDAN AVE 1981**

# SEDAN 95336 MANTECA

| | | |
|---|---|---|
| 6875 | MOORE E M | 823-2985 |
| 7125 | THORNTON MICHAEL | 823-6328 |
| 7563 | COSTA RAY | 823-4856 |
| 7570 | BEIER RANDY | 823-0410 |
| 7707 | XXXX | 00 |
| 7777 | VANDERHAAR ED | 239-1777 |
| 7945 | XXXX | 00 |
| 8291 | XXXX | 00 |
| 8601 | XXXX | 00 |
| 8603J | VAZQUEZ JOSE L | 239-2453 |
| 8669 | XXXX | 00 |
| 8887 | VANVUREN SHERWOOD | 239-2091 |
| 9701 | GAVINO MANUEL | 823-1564 |
| 9715 | AGUILAR HENRY | 823-4298 |
| 9720 | XXXX | 00 |
| NO # | BROWN THOMAS W | 823-4211 |

★ 0 BUS 16 RES 0 NEW

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | Haines Criss-Cross Directory |

# S MANTECA RD 1977

MANTECA RD S 95336 MANTECA

| | | |
|---|---|---|
| 19111 | XXXX | 00 |
| 19129 | SOBRERO JAMES M | 823-4110 |
| 19145 | RAIN SAM | 823-5464 |
| 19243 | *MID CAL DIESEL SERV | 239-2414+7 |
| 19782 | DURAO JACK | 823-2943 |
| 19856 | BREITENBUCHER D W | 823-2238 |
| | GERDES DARRELL L | 239-9208+7 |
| 19881 | PETERSON NORBERT | 239-1030+7 |
| 20041 | QUARESMA GEORGE R | 823-5065 |
| 20101 | HEAD JAMES F | 823-3685 6 |
| 20153 | SCHMIDT MIKE | 823-3872 6 |
| 20185 | MONSON DAVID R | 823-7587+7 |
| 20445 | PHILLIPS ORVIL | 823-6220 5 |
| 20599 | XXXX | 00 |
| 20687 | GUZMAN BENNIE | 239-1907+7 |
| 20696 | SCHMIEDT L A | 823-5315 |
| | *SCHMIEDTS SOIL SV | 823-5315 |
| 20955 | NELSON TOM | 239-1563 5 |
| 21010 | EVANS BOB | 239-3407+7 |
| 21024 | MARTINEZ RAUL | 823-2752+7 |
| 21336 | SILVA A R | 823-4970 5 |
| 21338 | REINKE JAMES | 239-1650 6 |
| 21350 | SILVA ROBERT | 823-7291 5 |
| 21434 | XXXX | 00 |
| 21447 | GUTHMILLER ARTHUR | 823-4519+7 |
| 21800 | XXXX | 00 |
| 22445 | FELLS HARRY L | 823-7751 |
| 22621 | PALOMINO JOSE | 239-1435 6 |
| 22886 | XXXX | 00 |
| 22918 | GILLIT CLIFFORD | 823-7878 |
| 22942 | QUINTAL JOHN R | 823-6173 |
| 22974 | XXXX | 00 |
| 23064 | BLEWETT T A | 823-6038+7 |
| | BLEWETT W H | 823-1549 |
| 23165 | ROILAND MARK | 823-4385 5 |
| 23261 | FONSECA ALBERT JR | 823-6433 5 |
| 23285 | XXXX | 00 |
| 23378 | XXXX | 00 |
| 23412 | ANDERSEN A L | 823-6629 |
| 23703 | HAHN HILARY | 239-9428 5 |
| 23774 | CAMPER C T | 823-4142+7 |
| 23777 | HURST GEORGETTE E | 239-2549+7 |
| 23861 | XXXX | 00 |
| 23901 | TURNER WILLIAM S | 823-1205 |
| 23974 | XXXX | 00 |
| 24390 | THEILER SUSIE MRS | 823-6646 |
| 24858 | COSTA HENRY | 239-2318+7 |
| 24892 | SILVA MANUEL G | 239-1156+7 |
| 24916 | DYK DARYL | 823-5013 6 |
| | MACHADO JOE J | 823-6605 |
| 24920 | PIRES MANUEL S | 239-3835 6 |
| 25172 | XXXX | 00 |
| 25570 | LEAL FRANK | 823-6668 |
| | LEAL J | 239-1683 5 |
| 26326 | DERUYTER CORNIE | 823-4273+7 |
| 26630 | SEEGERS ROLLAND | 823-7076 |
| 26700 | SEEGERS R L | 823-2908 3 |
| 27101 | BROCCHINI ALFRED | 823-2340+7 |
| 27151 | DESOTO FRANK | 823-6696 |
| | RANDEL DICK | 823-6696 6 |
| 27464 | XXXX | 00 |
| 27620 | FAGUNDES WALLACE | 823-6678 |
| 27842 | BLAKENEY JAKE | 823-4866 |
| 28225 | HICKEN GRANT KEN | 823-5141 5 |
| 28358 | XXXX | 00 |
| 28573 | STELLHORN FRED W | 00823-3644 5 |

* 2 BUS 64 RES 15 NEW

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | Haines Criss-Cross Directory |

**SEDAN AVE 1977**

SEDAN 95336 MANTECA

| | | |
|---|---|---|
| 6875 | TAYLOR DEAN | 823-5901+7 |
| 7083 | XXXX | OO |
| 7563 | COSTA RAY | 823-4856 |
| 7570 | GRIMM HAROLD | 823-3726 6 |
| 7707 | PERCIVAL D V | 823-1454 3 |
| 7777 | ALBERTSEN RANDY | 239-1777 5 |
| 7945 | XXXX | OO |
| 8291 | *PALM VIEW ENTRPRSES | 823-3554 6 |
| 8603J | VAZQUEZ JOSE L | 239-2453 5 |
| 8669 | *SAND HENRY P JR | 239-2242 |
| 8887 | VANVUREN SHERWOOD | 239-2091+7 |
| 9701 | GAVINO MANUEL | 823-1564 |
| 9715 | AGUILAR HENRY | 823-4298 |
| 9720 | SEARCY DON | 823-1582 4 |
| NO # | BROWN THOMAS W | 823-4211+7 |

* 2 BUS 13 RES 3 NEW

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | POLK DIRECTORY CO |

# S MANTECA RD 1973

**MANTECA RD S —FROM 925 S MAIN ST SOUTH**

ZIP CODE 95336
MANTECA RD S STARTS

19014 Villegas Vincent 239-2543
19111 ★ Manz Ken
19129 Sobrero James M ◎ 823-4110
19145 Rain Viola M Mrs 823-5464
19207 Vacant
19235 ★ Anderson Jim
19243 Cary Preston V ◎ 823-4609
19277 ★ Lemcool Paul
19345 Vaughn's Tow Service auto 823-2656
Rear Vaughn Troy E ◎ 823-4723
Vaughn W Roy
19401 Fells Dick D
19488 Vacant
19500 Phillips Orvil S ◎ 823-6220
19530 Griggs Ray ◎
19536 Almaida Thos 823-1826
19536j Vacant
19782 Durao Jack S ◎ 823-2943
19856 Breitenbucher Donald W ◎ 823-2238
19881 Loureiro Melvin A Jr 823-4670
20041 Quaresma Geo R ◎ 823-5065

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | POLK DIRECTORY CO |

# S MANTECA RD 1968

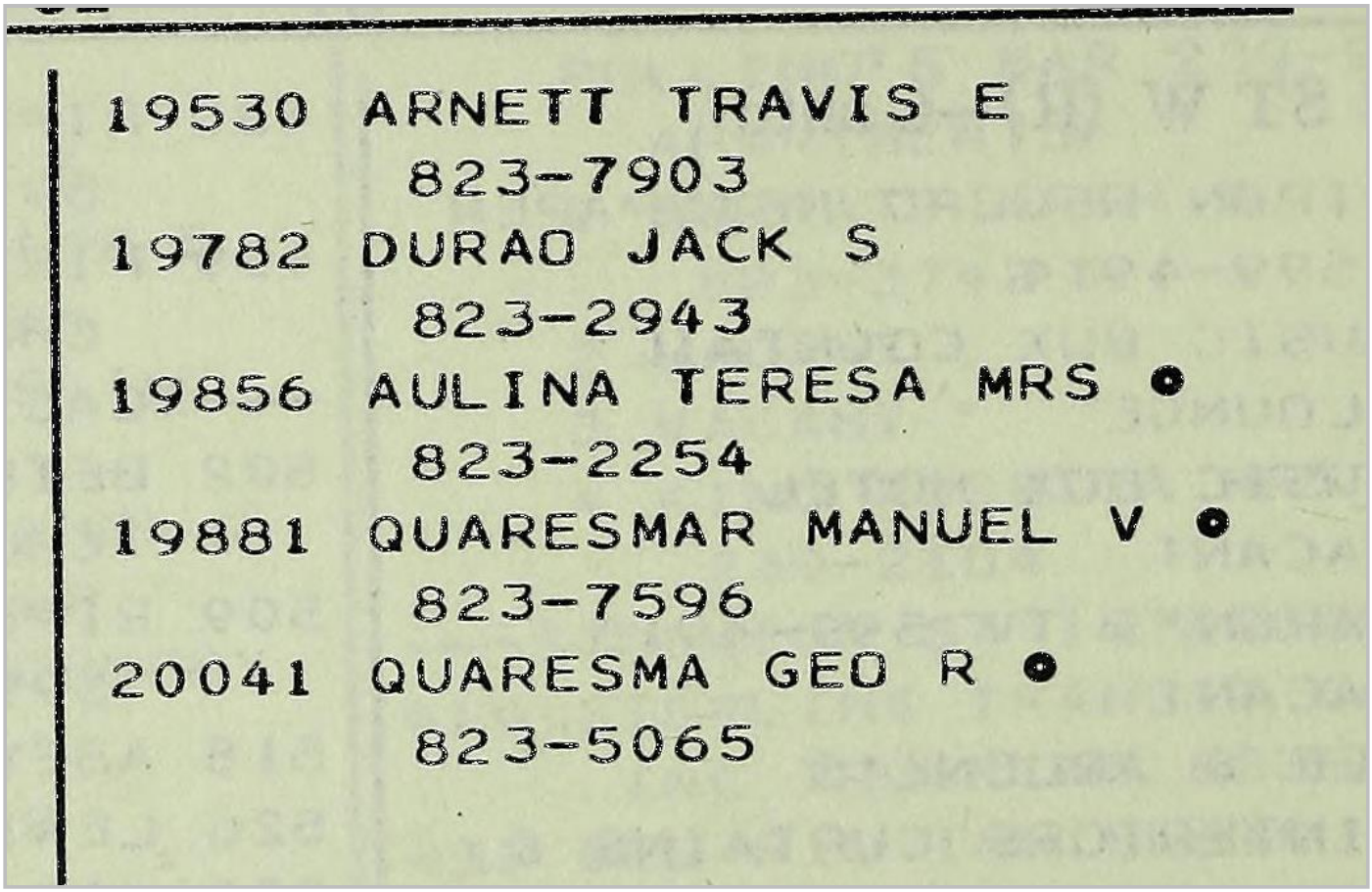


MANTECA RD S -A
CONTINUATION OF S MAIN
ST FROM COTTA ST SOUTH

---ZIP CODE 95336
VAUGHN ROY W 239-1294
BX451 FARNSWORTH MELVIN G
823-1980
REAR ALMEDA TOM L 823-2881
BX494 VAUGHAN CLARENCE B ⊙
823-7988
605 RODRIGUES SALVADORE G
623 VACANT
723 GERMAN GERALD W
823-6298
725 HULSEY JOHN A 239-1835
727 PHILLIPS HENRY
729 PEON JOHN
731 JACOUAY EVERETT J
815 BRUM GEO A ⊙ 823-5755
821 OCHOA BERNARDO R ⊙
19089 ROCHA SAUL N ⊙
823-4687
19129 SABRERO JAMES M ⊙
823-4110
19145 RAIN SAM J 823-5464
19207 SANDERS MARION A ⊙
823-2255
19235 SABERTON CHARLES
823-1064
19243 CARY PRESTON V ⊙
823-4609
19277 VICE R
19345 VAUGHN'S TOW SERVICE
AUTO 823-4723
VAUGHN TROY E ⊙
823-2656
DUVAL REINALD A
823-2285
19401 FELLS DICK D
19488 BISHOP JIM
19500 PHILLIPS ORVIL S ⊙
823-6220

| Target Street | Cross Street | Source |
|---|---|---|
| ✓ | - | POLK DIRECTORY CO |

## S MANTECA RD 1968



19530 ARNETT TRAVIS E
823-7903
19782 DURAO JACK S
823-2943
19856 AULINA TERESA MRS ●
823-2254
19881 QUARESMAR MANUEL V ●
823-7596
20041 QUARESMA GEO R ●
823-5065



# APPENDIX G

## ENVIRONMENTAL SITE ASSESSMENT QUESTIONNAIRE

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**ENVIRONMENTAL SITE ASSESSMENT QUESTIONNAIRE**
**FOR CLIENT**

To evaluate the potential for possible environmentally related impacts and site contamination the following information is requested. This questionnaire is to be completed by the user of the phase one environmental site assessment, or their authorized representative.

**PART I**

1. Property address and Assessor's Parcel Number (APN):

   226-120-10
   226-120-11

2. Current property owner (name, address, voice/fax number):

   Riverside LHC LTD Planned
   Developer is Richland Communities, Inc.

3. Date current property owner assumed title of property:

   2004

4. Current property development/improvements:

   Approx. 28,000 Sq. ft House and grounds. Vineyard, separate office and storage yard.

5. Past property use, development/improvements:

   Vineyard

6. Neighboring property uses:

   North: Woodward Park Low Density Res. Developmt
   Pillsbury Estates " "
   West: Evans Estates " "
   South: Ag
   East: Ag w/ Business Park Zoning

**PART II**

1. Are you aware of any environmental cleanup liens against the *property* that are filed under federal, tribal, local or state law? ☐ Yes ☒ No

2. Are you aware of any activity and land use limitations, such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded in a registry under federal, tribal, state or local law? ☐ Yes ☒ No

3. Do you have any specialized knowledge or experience related to the *property* or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the *property* or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business? ☐ Yes ☒ No

4. If a property transaction is occurring in conjunction with this environmental assessment, does the purchase price of this *property* reasonably reflect the fair market value of the *property*? ☐ Yes ☐ No N/A

5. If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the *property*? ☐ Yes ☐ No ☒ N/A

6. Are you aware of any commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, ☐ Yes ☒ No

   (a) do you know of specific chemicals that are present or once were present at the *property*?
   (b) do you know of spills or other chemical releases that have taken place at the *property*?
   (c) do you know of any environmental cleanups that have taken place at the *property*?

7. Based on your knowledge and experience related to the *property* are there any obvious indicators that point to the presence or likely presence of contamination at the *property*? ☐ Yes ☒ No

**If a "Yes" response was provided to any of the above questions, please provide details below:**

I certify that the information herein is true and correct to the best of my knowledge as of the date signed below.

Name (Printed/Typed): Kyle Masters

Signature: [signature] Date: 10/20/20



# APPENDIX H

## QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONAL

## SHAWN MUNGER, CHG
## Principal Geologist

### EDUCATION

BS, Geology, U.C. Davis, 1985

### EXPERIENCE

Years with ENGEO: 31
Years with Other Firms: 0

### REGISTRATIONS & CERTIFICATIONS

Certified Hydrogeologist, CA, 413

8 Hour HAZWOPER Training, CA, 160115576014

Professional Geologist, CA, 5810

Certified Environmental Manager, NV, 1332

40 Hour HAZWOPER Training, CA, 100830513934

### SPECIALIZATIONS

- Environmental Assessments and Remediation
- Environmental Restoration
- Water Quality Studies
- Water Wells/Hydrogeology

Since joining ENGEO in 1985, Shawn has been managing groundwater supply evaluations, hydrogeologic studies, chemical assessments, Phase I and II Site Assessment projects, UST site investigations, risk based corrective action (RBCA), VOC remediation, and agricultural impact evaluations. He serves as Principal-in-Charge or Project Manager for environmental and hazardous materials projects involving groundwater hydrology, contaminant fate and transport, and remediation. He is Principal-in-Charge of the environmental components of our on-call contracts with the City of Sacramento and the County of Sacramento.

### Select Project Experience

**14234 Saratoga Sunnyvale Road—Saratoga, CA**
*Project Geologist*. Shawn performed Principal review of ENGEO's environmental documents. This 2.2-acre townhome site is planned for a new multi-family development comprising up to 20 units in 8 buildings. The site immediately borders Saratoga Creek and contains numerous mature trees, many of which are to be saved. Site challenges include shallow groundwater, creek bank stability, and the potential for liquefaction and lateral spreading.

**Lenihan Dam Outlet Modification—Los Gatos, CA**
*Principal Geologist*. Shawn provided technical advice, coordination, consultation, and review of ENGEO's documents to provide quality mitigation measures. The findings were presented to SCVWD and it was concluded that the stockpile was sufficient for transportation. This analysis led to significant project budget savings by avoiding removal and disposal at a solid waste disposal facility. The project consisted of a stockpile approximately 6,000 cubic yards that required profiling as requested by Santa Clara Valley Water District before use of as site backfill.

**199 River Oaks Parkway—San Jose, CA**
*Principal in Charge*. Shawn provided principal oversight, data analysis, and consultation regarding site characterization, risk evaluation, and demolition observation plans. The project consists of a proposed six-story podium structure with one level to be constructed below grade. The property is a former semiconductor facility that has received conditional closure from the Regional Water Quality Control Board and is approved for construction.

**Riverside Avenue Property—Roseville, CA**
*Principal in Charge*. Shawn provided principal oversight of a Phase II Environmental Site Assessments and site

characterization. The project site consists of an active auto sales and service facility. The historic use of the facility for industrial purposes resulted in soil and groundwater impacts beneath the site. The City of Roseville revised its plans for acquiring and redeveloping the site due to the identified soil and groundwater impacts.

**1301 Standard Oil Ave—Pittsburg, CA**
*Principal in Charge*. Shawn provided principal oversight of a Phase II Environmental Site Characterization. The property is an abandoned wastewater treatment plant with processing buildings, clarifier tanks, and sludge beds.

**Pleasant Hill BART Station—Walnut Creek, CA**
*Principal in Charge*. Shawn provided oversight, data analysis and consultation during the preparation of a Phase II Environmental Site Assessment. The property is an existing BART station that encompasses 20 acres, including the platform/station area, electrical facilities, a parking garage and additional paved parking areas.

**County Crossings Property—Antioch, CA**
*Principal in Charge*. Shawn provided environmental consultation and data review with regard to soil and groundwater contamination. Constituents of concern include petroleum hydrocarbons, nitrates and manganese. The approximately 264-acre site includes several former industrial facilities and petroleum pipelines. Soil and groundwater at the site has been impacted with petroleum hydrocarbons, nitrates and manganese. Planned uses include commercial, residential, retail, and a BART-oriented transit village. The center, which is currently in the entitlement phase, is estimated to break ground in 2011.

**620 North Ninth Street—San Jose, CA**
*Principal in Charge*. Shawn provided oversight of soil, groundwater and soil gad characterizations, risk evaluations and Remedial Action Plan preparation. Shawn also closely interacted with RWQCB staff to achieve approval for residential development. The property is a former fruit packing plant and food preparation facility. The proposed development consists of a single-family residential subdivision.

**Westshore—Richmond, CA**
*Project Manager*. Shawn conducted Phase I and II Site Assessments, risk evaluations and prepared a soil management plan. The property was a former automotive manufacturing plant proposed for a multi-unit condominium development, including a 6-story podium structure to include five residential floors with 269 units and one parking floor.

**Mills Ranch—King City, CA**
*Principal in Charge*. Shawn provided principal oversight of Phase I/II Environmental Site Assessments and risk evaluations. The approximate 80-acre property is used for agricultural cultivation and commercial uses. The proposed mixed-use development includes over 400 single-family residential lots.

**Select Foods Site/Cross Creek—Hayward, CA**
*Principal in Charge*. Shawn provided principal oversight, consultation, and data analysis. The property was a former processed food facility, a drum recycling business, battery manufacturing operation and a bus assembly plant. Following completion of soil remediation under RWQCB oversight, the property was developed into a single-family residential subdivision.

**Arroyo Crossing—Livermore, CA**
*Principal in Charge*. Shawn provided oversight, data analysis and regulatory consultation while ENGEO provided geotechnical and environmental engineering services for this 34-acre site. This former corporation yard and quarry site was developed into a single-family residential subdivision.

**Renaissance Square—Concord, CA**
*Project Manager*. Shawn provided consultation, data analysis, and field observation. This former automotive dealership was redeveloped as a five-story multi-family residential structure supported on slab-on-grade foundations, with two levels of below-grade parking. Petroleum hydrocarbon-impacted soil was encountered during excavation of the parking structure, which required characterization and remediation. Soil impacts were attributed to former sumps, USTs and hydraulic lifts.

**Union Pacific Railroad Corridor—San Jose, CA**
*Project Manager*. Shawn prepared a Phase I and II Environmental Site Assessment. Work included a site reconnaissance, historical records research and recovery of soil samples with laboratory analysis. Lead impacted soil was identified which required risk evaluation. This former1800 lineal foot section of the former Union Pacific Railroad Corridor was proposed for mixed-use development.

**Former SFPP Alignment—Concord, CA**
*Project Manager*. Shawn prepared a Phase I and II Environmental Site Assessment. The site was a former ±6,500-foot corridor formerly occupied by the Southern Pacific Railroad. Kinder Morgan petroleum pipelines existed within an easement along the property. The southern portion of the site was crossed by East Bay Municipal Utilities District water distribution lines and a multi-lane highway overpass. The corridor was developed as a self-storage facility. Work included the recovery of soil and groundwater samples along the SP right of way.

**Hercules Property—Hercules, CA**
*Project Manager*. Shawn provided oversight of a Phase I Environmental Site Assessment, site asbestos survey, site characterization, and demolition observation/contaminant assessment. The project area consists of ±167 acres located near and along the southeastern shore of San Pablo Bay in Hercules. The property was once a portion of a 1300-acre manufacturing facility that was operated by DuPont from 1879 to 1913 and Hercules Incorporated from 1913 to 1979. The planned development includes single/multi-family residential development with some commercial components.

**Highlands Ranch—Antioch, CA**
*Principal in Charge*. Shawn provided oversight, data analysis, and collaboration with RWQCB personnel. The project site consists of a 140-acre portion of the former Chevron Los Medanos Tank Farm located in Pittsburg, California. The site was historically occupied by 24 crude oil tanks and four wax ponds. Remediation of the crude oil tank and wax pond locations was conducted according to a remedial action plan (RAP) and oversight was provided by the CRWQCB. Remediation was performed over a period of four months and consisted of excavating approximately 110,000 cubic yards of impacted soil and placing the material in windrows for ex-situ bioremediation.



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# APPENDIX H




# Hat Ranch
# Environmental Noise Assessment

**City of Manteca, California**

**February 18, 2021**

**jcb Project # 2020-124**

**Prepared for:** RANEY PLANNING & MANAGEMENT, INC.

**In Cooperation With the City of Manteca**

**Attn:**
**Rod Stinson**
**1501 Sports Drive, Suite A**
**Sacramento, CA 95834**

**Prepared by:**

**j.c. brennan & associates, Inc.**

**Jim Brennan, INCE**
**President**
**Member, Institute of Noise Control Engineering (INCE)**

# INTRODUCTION

This report has been prepared to address the noise impacts due to and upon the proposed Hat Ranch residential project, located in the City of Manteca, California. The proposed project site is located in San Joaquin County, within the City of Manteca Sphere of Influence.

**Figure 1** shows the project location and surrounding uses.

# PROJECT DESCRIPTION

The Hat Ranch project is divided in two separate parcels, which are referred to as the Hat Ranch East and the Hat Ranch West.

The Eastern Parcel includes approximately 410 single family residential lots. The Eastern Parcel allocates approximately 9.3 acres to parkland located directly adjacent to a proposed elementary/middle school, which consists of 16.4 acres.

The Western Parcel includes approximately 329 single family residential lots. The Western Parcel would also contain 6.9 acres of parkland and upland play area.

The proposed project infrastructure includes roadways, pedestrian and bicycle facilities, and wastewater, water, and storm drain systems. Streets and infrastructural improvements would constitute a total of 11.5 acres within the project site.

The main entrances into the Hat Ranch site would be at Pillsbury Road. Pillsbury Road would serve to divide the project into a Western Parcel and an Eastern Parcel. Street connections would be provided to the adjacent Pillsbury Estates and Woodward Park developments to the north and Evans Estates to the west by extending the existing stub streets of Polk Street, Buena Vista Drive, Inyo Avenue, Jigsaw Avenue, and Veramonte Avenue into the project site.

In addition, the future Antone Raymus Expressway is proposed along the southern boundary of the project site, and the future Atherton Drive is proposed along the eastern boundary of the project site. Pillsbury Road would be extended through the project site from the north to connect to the future Antone Raymus Expressway.

Figure 1 shows the surrounding land uses and the project site plans.







**A** **Continuous Noise Measurement Site**

**#** **Short-term Noise Measurement Sites**

**Figure 1**
**Hat Ranch Site Plan**

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consultants in acoustics

Rev. 1/11/17

# ENVIRONMENTAL SETTING

## *Background Information on Noise and Vibration*

### *Fundamentals of Acoustics*

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level ($L_{eq}$), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The $L_{eq}$ is the foundation of the composite noise descriptor, $L_{dn}$, and shows very good correlation with community response to noise.

The day/night average level ($L_{dn}$) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime

noise exposures as though they were twice as loud as daytime exposures. Because $L_{dn}$ represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

**Table 1** lists several examples of the noise levels associated with common situations. **Appendix A** provides a summary of acoustical terms used in this report.

*Effects of Noise on People*

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

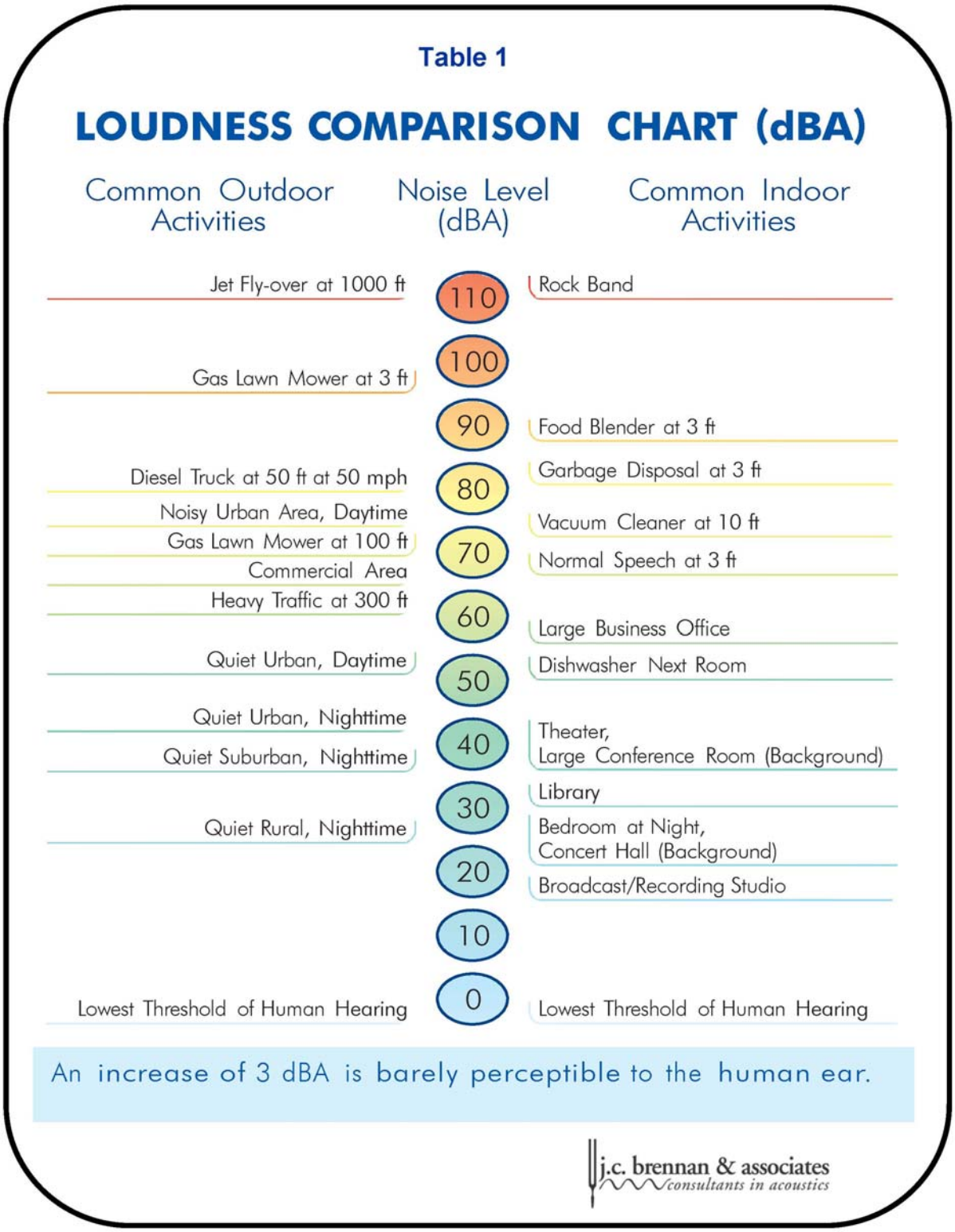
With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

**Table 1**

# LOUDNESS COMPARISON CHART (dBA)




An increase of 3 dBA is barely perceptible to the human ear.

j.c. brennan & associates
consultants in acoustics

## EXISTING CONDITIONS

### Existing Land Uses

Currently, the surrounding land uses are agriculture, including primarily almond orchards, berry farms, and vineyards. However, the surrounding land to the north, east, and west of the project site residential development, including the Pillsbury Estates north of the western portion of the project site. In addition, north of the eastern portion of the project site is the South of Woodward Avenue (SOWA) project.

### Existing Ambient Noise Levels

To quantify the existing ambient noise environment in the project vicinity short-term and continuous (24-hour) noise level measurements were conducted on the project site. Short-term noise level measurements were conducted on August 25th-26th, 2020. The noise measurement locations are shown on Figure 1. The noise level measurement survey results are provided in Table 2. Appendix B shows the complete results of the continuous noise monitoring at Site A.

The sound level meters were programmed to collect hourly noise level intervals at each site during the survey. The maximum value ($L_{max}$) represents the highest noise level measured during an interval. The average value ($L_{eq}$) represents the energy average of all of the noise measured during an interval. The median value ($L_{50}$) represents the sound level exceeded 50 percent of the time during an interval.

Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

**Table 2: Summary of Existing Background Noise Measurement Data**

| Site | Location | $L_{dn}$ | Average Measured Hourly Noise Levels, dB | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Daytime (7am-10pm) | | | Nighttime (10pm-7am) | | |
| | | | $L_{eq}$ | $L_{50}$ | $L_{max}$ | $L_{eq}$ | $L_{50}$ | $L_{max}$ |
| ***Continuous (24-hour) Noise Level Measurements*** | | | | | | | | |
| A | Northeast corner of site. | 55 | 49 | 45 | 66 | 49 | 45 | 62 |
| ***Short-term Noise Level Measurements*** | | | | | | | | |
| 1 | Northcentral corner of site. | NA | 56.9 | 52.5 | 66.2 | @ 11:30 a.m.. | | |
| 2 | Southeast corner of site. | NA | 55.9 | 53.0 | 63.2 | @12:30 p.m. | | |
| Source: j.c. brennan & associates, Inc., 2020. | | | | | | | | |

## Existing Roadway Noise Levels

To predict existing noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The model is based upon the Calveno reference noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly $L_{eq}$ values for free-flowing traffic conditions.

Traffic volumes for existing conditions were obtained from the traffic study prepared for the project (Fehr & Peers). Truck percentages and vehicle speeds on the local area roadways were estimated from field observations.

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each project-area roadway segment. Where traffic noise barriers are predominately along a roadway segment, or outdoor activity areas are shielded by the building facades, a -5 dB offset was added to the noise prediction model. In some locations sensitive receptors may be located at distances which vary from the assumed calculation distance and may experience shielding from intervening barriers or sound walls. However, the traffic noise analysis is believed to be representative of the majority of sensitive receptors located closest to the project-area roadway segments analyzed in this report.

The actual distances to noise level contours may vary from the distances predicted by the FHWA model due to roadway curvature, grade, shielding from local topography or structures, elevated roadways, or elevated receivers. The distances reported in Table 3 are generally considered to be conservative estimates of noise exposure along the project-area roadways.

Table 3 shows the existing traffic noise levels in terms of $L_{dn}$ at closest sensitive receptors along each roadway segment. This table also shows the distances to existing traffic noise contours. A complete listing of the FHWA Model input data is contained in Appendix B.

**Table 3: Existing Traffic Noise Levels and Distances to Contours**

| Roadway | Segment | Exterior Traffic Noise Level, $L_{dn}$ | Distance to Traffic Noise Contours, $L_{dn}$ (feet) | | |
|---|---|---|---|---|---|
| | | | 70 dB | 65 dB | 60 dB |
| Woodward Ave | West of Main Street | 57 dB | 10 | 21 | 44 |
| Woodward Ave | Main Street to Pillsbury Road | 56 dB | 9 | 20 | 43 |
| Woodward Ave | Pillsbury Road to Atherton Drive | 56 dB | 9 | 19 | 42 |
| Woodward Ave | Atherton Drive to Moffat Blvd. | 60 dB | 17 | 37 | 79 |
| Main Street | Woodward Ave to Future Raymus Expressway | 61 dB | 19 | 41 | 88 |
| Main Street | Woodward Avenue to Atherton Dr. | 57 dB | 10 | 22 | 48 |
| Main Street | Atherton Drive to S.R. 120 | 62 dB | 22 | 47 | 101 |
| Main Street | S.R. 120 to Mission Ridge Dr. | 65 dB | 34 | 74 | 159 |
| Main Street | North of Mission Ridge Dr. | 59 dB | 13 | 28 | 61 |
| Manteca Road | South of Future Raymus Expressway | 52 dB | 5 | 10 | 23 |
| Pillsbury Road | Woodward Ave. to Heartland Drive | 48 dB | 3 | 6 | 12 |
| Pillsbury Road | Heartland Drive to Tannehill Drive | 43 dB | 1 | 3 | 6 |
| Pillsbury Road | Tannehill Drive to Future Raymus Expressway | 43 dB | 1 | 3 | 6 |
| | | | | | |
| Atherton Road | North of Woodward Avenue | 42 dB | 1 | 2 | 5 |
| Atherton Road | Woodward Avenue to North Project Site | 44 dB | 1 | 3 | 6 |
| Atherton Road | North Project Site to Future Raymus Expressway | NA | | | |
| Atherton Road | South of Future Raymus Expressway | NA | | | |
| Moffatt Blvd | North of Woodward Ave | 64 dB | 31 | 66 | 143 |
| Moffatt Blvd | South of Woodward Ave | 65 dB | 38 | 83 | 179 |

Notes: Distances to traffic noise contours are measured in feet from the centerlines of the roadways.
Source: FHWA-RD-77-108 with inputs from Fehr & Peers, and j.c. brennan & associates, Inc. 2021.

# REGULATORY CONTEXT

### *Federal*

There are no federal regulations related to noise that apply to the Proposed Project.

### *State*

California Environmental Quality Act

The California Environmental Quality Act (CEQA) Guidelines, Appendix G, indicate that a significant noise impact may occur if a project exposes persons to noise or vibration levels in excess of local general plans or noise ordinance standards, or cause a substantial permanent or

temporary increase in ambient noise levels. CEQA standards are discussed more below under the Thresholds of Significance criteria section.

California State Building Codes

The State Building Code, Title 24, Part 2 of the State of California Code of Regulations establishes uniform minimum noise insulation performance standards to protect persons within new buildings which house people, including hotels, motels, dormitories, apartment houses and dwellings other than single-family dwellings. Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB $L_{dn}$ or CNEL in any habitable room.

Title 24 also mandates that for structures containing noise-sensitive uses to be located where the $L_{dn}$ or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment

***City of Manteca***

The City of Manteca General Plan

The City of Manteca General Plan Noise Element contains goals, policies, and implementation measures for assessing noise impacts within the City. Listed below are the noise goals, policies, and implementation measures that are applicable to the proposed project .

**Goal N-1.** Protect the residents of Manteca from the harmful and annoying effects of exposure to excessive noise.

**Goal N-3.** Ensure that the downtown core noise levels remain acceptable and compatible with commercial and higher density residential land uses.

**Goal N-4.** Protect public health and welfare by eliminating existing noise problems where feasible, by establishing standards for acceptable indoor and outdoor noise, and by preventing significant increases in noise levels.

**Goal N-5.** Incorporate noise considerations into land use planning decisions, and guide the location and design of transportation facilities to minimize the effects of noise on adjacent land uses.

**Policy N-P-2:** New development of residential or other noise-sensitive land uses will not be permitted in noise-impacted areas unless effective mitigation measures are incorporated into the project design to satisfy the performance standards in Table 9-1 (**Figure 2**).

**Policy N-P-3:** The City may permit the development of new noise-sensitive uses only where the noise level due to fixed (non-transportation) noise sources satisfies the noise level standards of Table 9-2 (**Figure 3**). Noise mitigation may be required to meet Table 9-2 (**Figure 3**) performance standards.

**Policy N-P-5**: In accord with the Table 9-2 (**Figure 3**) standards, the City shall regulate construction-related noise impacts on adjacent uses.

**Implementation N-I-1.** New development in residential areas with an actual or projected exterior noise level of greater than 60 dB $L_{dn}$ will be conditioned to use mitigation measures to reduce exterior noise levels to less than or equal to 60 dB $L_{dn}$.

**Implementation N-I-3.** In making a determination of impact under the California Environmental Quality Act (CEQA), a substantial increase will occur if ambient noise levels are increased by 10 dB or more. An increase from 5-10 dB may be substantial. Factors to be considered in determining the significance of increases from 5-10 dB include:

- the resulting noise levels
- the duration and frequency of the noise
- the number of people affected
- the land use designation of the affected receptor sites
- public reactions or controversy as demonstrated at workshops or hearings, or by correspondence
- prior CEQA determinations by other agencies specific to the project

**Implementation N-I-4.** Control noise at the source through use of insulation, berms, building design and orientation, buffer space, staggered operating hours and other techniques. Use noise barriers to attenuate noise to acceptable levels.

**Figure 2: Table 9-1 of the City of Manteca General Plan Noise Element**

**MAXIMUM ALLOWABLE NOISE EXPOSURE MOBILE NOISE SOURCES**

| Land Use[4] | Outdoor Activity Areas[1] | Interior Spaces | |
|---|---|---|---|
| | | Ldn/CNEL, dB | Leq, dB[3] |
| Residential | 60[2] | 45 | |
| Transient Lodging | 60[2] | 45 | |
| Hospitals, Nursing Homes | 60[2] | 45 | |
| Theaters, Auditoriums, Music Halls | | | 35 |
| Churches, Music Halls | 60[2] | | 40 |
| Office Buildings | 65 | | 45 |
| Schools, Libraries, Museums | | | 45 |
| Playgrounds, Neighborhood Parks | 70 | | |

*[1]Outdoor activity areas for residential development are considered to be backyard patios or decks of single family dwellings, and the common areas where people generally congregate for multi-family developments. Outdoor activity areas for non-residential developments are considered to be those common areas where people generally congregate, including pedestrian plazas, seating areas, and outside lunch facilities. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.*

*[2]In areas where it is not possible to reduce exterior noise levels to 60 dB $L_{dn}$ or below using a practical application of the best noise-reduction technology, an exterior noise level of up to 65 $L_{dn}$ will be allowed.*

*[3]Determined for a typical worst-case hour during periods of use.*

*[4]Where a proposed use is not specifically listed on the table, the use shall comply with the noise exposure standards for the nearest similar use as determined by the City.*

**Figure 3: Table 9-2 of the City of Manteca General Plan Noise Element**

**PERFORMANCE STANDARDS FOR STATIONARY NOISE SOURCES OR PROJECTS AFFECTED BY STATIONARY NOISE SOURCES[1,2]**

| Noise Level Descriptor | Daytime | Nighttime |
|---|---|---|
| | 7 a.m. to 10 p.m. | 10 p.m. to 7 a.m. |
| Hourly Leq, dB | 50 | 45 |
| Maximum Level, dB | 70 | 65 |

*[1]Each of the noise levels specified above should be lowered by five (5) dB for simple noise tones, noises consisting primarily of speech or music, or recurring impulsive noises. Such noises are generally considered by residents to be particularly annoying and are a primary source of noise complaints.*

*[2]No standards have been included for interior noise levels. Standard construction practices should, with the exterior noise levels identified, result in acceptable interior noise levels.*

City of Manteca Municipal Code Noise Ordinance

Section 9.52.030 of the City of Manteca Municipal Code prohibits excessive or annoying noise or vibration to residential and commercial properties in the City. The following general rules are outline in the ordinance:

**9.52.030 Prohibited noises—General standard.**

No person shall make, or cause to suffer, or permit to be made upon any public property, public right-of-way or private property, any unnecessary and unreasonable noises, sounds or vibrations which are physically annoying to reasonable persons of ordinary sensitivity or which are so harsh or so prolonged or unnatural or unusual in their use, time or place as to cause or contribute to the unnecessary and unreasonable discomfort of any persons within the neighborhood from which said noises emanate or which interfere with the peace and comfort of residents or their guests, or the operators or customers in places of business in the vicinity, or which may detrimentally or adversely affect such residences or places of business. (Ord. 1374 § 1(part), 2007)

**17.58.050 D Exempt Activities**

8. Construction activities when conducted as part of an approved Building Permit, except as prohibited in Subsection 17.58.050(E)(1) (Prohibited Activities) below.

**17.58.050 E. Prohibited Activities**

1. Construction Noise. Operating or causing the operation of tools or equipment on private property used in alteration, construction, demolition, drilling, or repair work daily between the

hours of 7:00 p.m. and 7:00 a.m., so that the sound creates a noise disturbance across a residential property line, except for emergency work of public service utilities.

### *Determination of a Significant Increase in Noise Levels*

California Environmental Quality Act (CEQA) guidelines define a significant impact of a project if it "increases substantially the ambient noise levels for adjoining areas".

The City of Manteca General Plan Noise Element Implementation Measure N-I-3 provides specific guidance for assessing increases in ambient noise, as follows:

> *In making a determination of impact under the California Environmental Quality Act (CEQA), a substantial increase will occur if ambient noise levels are increased by 10 dB or more. An increase from 5-10 dB may be substantial. Factors to be considered in determining the significance of increases from 5-10 dB include:*
>
> - *the resulting noise levels*
> - *the duration and frequency of the noise*
> - *the number of people affected*
> - *the land use designation of the affected receptor sites*
> - *public reactions or controversy as demonstrated at workshops or hearings, or by correspondence*
> - *prior CEQA determinations by other agencies specific to the project*

### *Vibration Standards*

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

The City of Manteca does not have specific policies pertaining to vibration levels. However, vibration levels associated with construction activities and railroad operations are addressed as potential noise impacts associated with project implementation.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 4 indicates that the threshold for damage to structures ranges from 2 to 6 peak particle velocity in inches per second (in/sec p.p.v). One-half this minimum threshold or 1 in/sec p.p.v. is considered a safe criterion that would protect against architectural or structural damage. The general threshold at which human annoyance could occur is noted as 0.1 in/sec p.p.v.

**Table 4: Effects of Vibration on People and Buildings**

| Peak Particle Velocity | | Human Reaction | Effect on Buildings |
|---|---|---|---|
| in./sec. | mm/sec. | | |
| 0.15-0.30 | 0.006-0.019 | Threshold of perception; possibility of intrusion | Vibrations unlikely to cause damage of any type |
| 2.0 | 0.08 | Vibrations readily perceptible | Recommended upper level of the vibration to which ruins and ancient monuments should be subjected |
| 2.5 | 0.10 | Level at which continuous vibrations begin to annoy people | Virtually no risk of "architectural" damage to normal buildings |
| 5.0 | 0.20 | Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations) | Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage |
| 10-15 | 0.4-0.6 | Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges | Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage. |
| Source: Caltrans. Transportation Related Earthborne Vibrations. TAV-02-01-R9601 February 20, 2002. | | | |

# IMPACTS AND MITIGATION MEASURES

## Method of Analysis

*Traffic Noise Impact Assessment Methodology*

To describe future noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. Direct inputs to the model included traffic volumes provided by Fehr & Peers. The FHWA model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly $L_{eq}$ values for free-flowing traffic conditions. To predict $L_{dn}$/CNEL values, it is necessary to determine the day/night distribution of traffic and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

*Construction Noise and Vibration Impact Methodology*

Construction noise and vibration was analyzed using data compiled for various pieces of construction equipment at a representative distance of 50 feet. Construction activities are discussed relative to the applicable City of Manteca noise policies. Potential impacts and mitigation measures are discussed.

### *Thresholds of Significance*

CEQA Guidelines define a significant adverse impact on the environment as an impact that would:

a. Exposure of persons to or generation of noise levels in excess of standards established in the City of Manteca General Plan. Specifically, exterior and interior noise levels of 60 dB $L_{dn}$ and 45 dB $L_{dn}$, respectively, for residential uses exposed to transportation noise sources.

b. Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels. Specifically, a threshold of 0.1 in/sec p.p.v. is considered a safe criterion that would protect against architectural or structural damage and human annoyance.

c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project, defined as an increase of 10 dB by the City of Manteca. An increase of 5-10 dB may be considered substantial according the guidelines outlined in noise Implementation Measure N-I-3 outlined above.

d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project, defined as an increase of 10 dB by the City of Manteca. An increase of 5-10 dB may be considered substantial according the guidelines outlined in noise Implementation Measure N-I-3 outlined above.

e. For a project located within an airport land use plan or, where such a plan has not be adopted, within two miles of a public airport or public use airport, where the project would expose people residing or working in the area to excessive noise levels.

f. For a project within the vicinity of a private airstrip, where the project would expose people residing or working in the project area to excessive noise levels.

The proposed project is not located within two miles of an airport. Therefore, aircraft noise is not examined further in this report.

## PROJECT-SPECIFIC IMPACTS AND MITIGATION MEASURES

### Impact 1 Construction Noise at Sensitive Receptors

Construction of the Proposed Project would temporarily increase noise levels during construction. This would be a ***potentially significant*** impact.

During the construction of the project including roads, water and sewer lines and related infrastructure, noise from construction activities would add to the noise environment in the project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in Table 5, ranging from 76 to 90 dB at a distance of 50 feet. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

Noise would also be generated during the construction phase by increased truck traffic on area roadways. A significant project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

**Table 5: Construction Equipment Noise**

| Type of Equipment | Maximum Level, dB at 50 feet |
|---|---|
| Backhoe | 78 |
| Compactor | 83 |
| Compressor (air) | 78 |
| Concrete Saw | 90 |
| Dozer | 82 |
| Dump Truck | 76 |
| Excavator | 81 |
| Generator | 81 |
| Jackhammer | 89 |
| Pneumatic Tools | 85 |
| Source: *Roadway Construction Noise Model User's Guide*. Federal Highway Administration. FHWA-HEP-05-054. January 2006. | |

Construction activities would be temporary in nature and are exempt from noise regulation during the hours of 7:00 a.m. to 7:00 p.m. as outlined in the City's Municipal Code:

### 17.58.050 D Exempt Activities

8. Construction activities when conducted as part of an approved Building Permit, except as prohibited in Subsection 17.58.050(E)(1) (Prohibited Activities) below.

### 17.58.050 E. Prohibited Activities

1. Construction Noise. Operating or causing the operation of tools or equipment on private property used in alteration, construction, demolition, drilling, or repair work daily between the

hours of 7:00 p.m. and 7:00 a.m., so that the sound creates a noise disturbance across a residential property line, except for emergency work of public service utilities.

**Mitigation for Impact 1:**

***MM-1a:*** Construction activities shall adhere to the requirements of the City of Manteca Municipal Code with respect to hours of operation.

***MM-1b:*** All equipment shall be fitted with factory equipped mufflers, and in good working order.

Significance after Mitigation: **Less-than-significant**.

**Impact 2 Transportation Noise at Existing Sensitive Receptors**

Traffic generated by the Proposed Project could generate traffic noise increases exceeding the City's substantial increase criteria of 5-10 dB, as outlined in the Thresholds of Significance criteria above. This would be a ***potenially significant*** impact.

Tables 6 shows the predicted traffic noise level increases on the local roadway network for existing and existing plus project conditions. Table 7 shows the predicted traffic noise level increases on the local roadway network for cumulative and cumulative plus project conditions.

Appendix C provides the complete inputs and results of the FHWA traffic noise modeling.

## Table 6: Existing and Existing + Project Traffic Noise Levels

| Roadway | Segment | Noise Levels ($L_{dn}$, dB) at Nearest Sensitive Receptors | | | | | |
|---|---|---|---|---|---|---|---|
| | | Existing | Existing + Project | Change | Distance to Existing + Project Traffic Noise Contours (feet)[1] | | |
| | | | | | 70 dB $L_{dn}$ | 65 dB $L_{dn}$ | 60 dB $L_{dn}$ |
| Woodward Ave | West of Main Street | 57 dB | 57 dB | 0 dB | 10 | 22 | 47 |
| Woodward Ave | Main Street to Pillsbury Road | 56 dB | 59 dB | +3 dB | 14 | 31 | 67 |
| Woodward Ave | Pillsbury Road to Atherton Drive | 56 dB | 58 dB | +2 dB | 12 | 26 | 56 |
| Woodward Ave | Atherton Drive to Moffat Blvd. | 60 dB | 61 dB | +1 dB | 20 | 43 | 94 |
| Main Street | Woodward Ave to Future Raymus Expressway | 61 dB | 62 dB | +1 dB | 21 | 45 | 97 |
| Main Street | Woodward Avenue to Atherton Dr. | 57 dB | 59 dB | +2 dB | 14 | 30 | 65 |
| Main Street | Atherton Drive to S.R. 120 | 62 dB | 64 dB | +2 dB | 30 | 64 | 137 |
| Main Street | S.R. 120 to Mission Ridge Dr. | 65 dB | 65 dB | 0 dB | 35 | 76 | 163 |
| Main Street | North of Mission Ridge Dr. | 59 dB | 59 dB | 0 dB | 13 | 29 | 63 |
| Manteca Road | South of Future Raymus Expressway | 52 dB | 52 dB | 0 dB | 5 | 11 | 23 |
| Pillsbury Road | Woodward Ave. to Heartland Drive | 48 dB | 53 dB | **+5 dB** | 6 | 13 | 27 |
| Pillsbury Road | Heartland Drive to Tannehill Drive | 43 dB | 52 dB | **+9 dB** | 5 | 11 | 24 |
| Pillsbury Road | Tannehill Drive to Future Raymus Expressway | 48 dB | 57 dB | **+9 dB** | 5 | 11 | 24 |
| Pillsbury Road | South of Raymus | NA | 46 dB | **+46 dB** | 2 | 4 | 9 |
| Atherton Road | North of Woodward Avenue | 42 dB | 43 dB | +1 dB | 1 | 2 | 5 |
| Atherton Road | Woodward Avenue to North Project Site | 44 dB | 50 dB | **+6 dB** | 3 | 8 | 16 |
| Atherton Road | North Project Site to Future Raymus Expressway | NA | 50 dB | **+50 dB** | 3 | 7 | 15 |
| Atherton Road | South of Future Raymus Expressway | NA | 41 dB | **+41 dB** | 1 | 2 | 4 |
| Moffatt Blvd | North of Woodward Ave | 64 dB | 64 dB | 0 dB | 31 | 67 | 145 |
| Moffatt Blvd | South of Woodward Ave | 65 dB | 66 dB | +1 dB | 40 | 87 | 188 |
| Raymas Expressway | Manteca 'Rd to Project Dwy West | NA | NA | -- | -- | -- | -- |
| | | | | | | | |

| Roadway | Segment | Noise Levels ($L_{dn}$, dB) at Nearest Sensitive Receptors | | | | | |
|---|---|---|---|---|---|---|---|
| | | Existing | Existing + Project | Change | Distance to Existing + Project Traffic Noise Contours (feet)[1] | | |
| | | | | | 70 dB $L_{dn}$ | 65 dB $L_{dn}$ | 60 dB $L_{dn}$ |
| Ramus Expressway | Project Dwy West to Pillsbury Rd | NA | 55 dB | **+55 dB** | 7 | 16 | 35 |
| Raymus Expressway | Pillsbury Rd to Atherton Drive | NA | 52 dB | **+52 dB** | 4 | 9 | 20 |
| Raymus Expressway | Atherton Drive to Austin Road | NA | 53 dB | **+53 dB** | 5 | 12 | 25 |

[1] Distances to traffic noise contours are measured in feet from the centerlines of the roadways.
[2] Traffic noise levels do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.
Source: j.c. brennan & associates, Inc. 2021.

## Table 7: Cumulative and Cumulative + Project Traffic Noise Levels

| Roadway | Segment | Noise Levels ($L_{dn}$, dB) at Nearest Sensitive Receptors | | | | | |
|---|---|---|---|---|---|---|---|
| | | Cumulative | Cumulative + Project | Change | Distance to Cumulative + Project Traffic Noise Contours (feet)[1] | | |
| | | | | | 70 dB $L_{dn}$ | 65 dB $L_{dn}$ | 60 dB $L_{dn}$ |
| Woodward Ave | West of Main Street | 58 dB | 58 dB | 0 dB | 12 | 25 | 55 |
| Woodward Ave | Main Street to Pillsbury Road | 60 dB | 61 dB | +1 dB | 19 | 42 | 90 |
| Woodward Ave | Pillsbury Road to Atherton Drive | 60 dB | 61 dB | +1 dB | 19 | 40 | 87 |
| Woodward Ave | Atherton Drive to Moffat Blvd. | 65 dB | 66 dB | +1 dB | 39 | 84 | 180 |
| Main Street | Woodward Ave to Future Raymus Expressway | 65 dB | 66 dB | +1 dB | 38 | 82 | 177 |
| Main Street | Woodward Avenue to Atherton Dr. | 61 dB | 62 dB | +1 dB | 22 | 47 | 101 |
| Main Street | Atherton Drive to S.R. 120 | 66 dB | 67 dB | +1 dB | 47 | 100 | 216 |
| Main Street | S.R. 120 to Mission Ridge Dr. | 67 dB | 67 dB | 0 dB | 45 | 96 | 208 |
| Main Street | North of Mission Ridge Dr. | 60 dB | 60 dB | 0 dB | 17 | 37 | 79 |
| Manteca Road | South of Future Raymus Expressway | 53 dB | 53 dB | 0 dB | 5 | 11 | 24 |
| Pillsbury Road | Woodward Ave. to Heartland Drive | 55 dB | 57 dB | +2 dB | 10 | 21 | 45 |
| Pillsbury Road | Heartland Drive to Tannehill Drive | 51 dB | 54 dB | +3 dB | 7 | 15 | 32 |
| Pillsbury Road | Tannehill Drive to Future Raymus Expressway | 55 dB | 60 dB | **+5 dB** | 6 | 14 | 29 |
| Pillsbury Road | South of Raymus | 50 dB | 52 dB | +2 dB | 4 | 10 | 21 |
| Atherton Road | North of Woodward Avenue | 50 dB | 50 dB | 0 dB | 4 | 8 | 17 |
| Atherton Road | Woodward Avenue to North Project Site | 56 dB | 57 dB | +1 dB | 10 | 22 | 48 |
| Atherton Road | North Project Site to Future Raymus Expressway | 51 dB | 54 dB | +3 dB | 6 | 13 | 28 |
| Atherton Road | South of Future Raymus Expressway | 50 dB | 51 dB | +1 dB | 4 | 8 | 18 |
| Moffatt Blvd | North of Woodward Ave | 65 dB | 65 dB | 0 dB | 35 | 76 | 163 |
| Moffatt Blvd | South of Woodward Ave | 68 dB | 69 dB | +1 dB | 60 | 129 | 279 |
| Raymas Expressway | Manteca 'Rd to Project Dwy West | 65 dB | 65 dB | 0 dB | 33 | 70 | 152 |

| Roadway | Segment | Noise Levels ($L_{dn}$, dB) at Nearest Sensitive Receptors | | | | | |
|---|---|---|---|---|---|---|---|
| | | Cumulative | Cumulative + Project | Change | Distance to Cumulative + Project Traffic Noise Contours (feet)[1] | | |
| | | | | | 70 dB $L_{dn}$ | 65 dB $L_{dn}$ | 60 dB $L_{dn}$ |
| Ramus Expressway | Project Dwy West to Pillsbury Rd | 58 dB | 60 dB | +2 dB | 16 | 34 | 73 |
| Raymus Expressway | Pillsbury Rd to Atherton Drive | 59 dB | 60 dB | +1 dB | 16 | 33 | 72 |
| Raymus Expressway | Atherton Drive to Austin Road | 59 dB | 60 dB | +1 dB | 16 | 35 | 75 |

[1] Distances to traffic noise contours are measured in feet from the centerlines of the roadways.
[2] Traffic noise levels do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and localized shielding.
Source: j.c. brennan & associates, Inc. 2021.

*Existing and Existing Plus Project Scenario*

Under the Existing and Existing Plus Project conditions, some noise sensitive receptors located along the project-area roadways are currently exposed to exterior traffic noise levels exceeding the City of Manteca 60 dB $L_{dn}$ exterior noise level standard for residential uses, as shown in Table 6. As shown by Table 6, these receptors will continue to experience elevated exterior noise levels with implementation of the proposed project. However, those residents which currently exceed the 60 dB standard will not result in a significant increase in traffic noise levels due to the project. Where existing residents currently exceed the 60 dB $L_{dn}$ standard, the project will not result in an increase in traffic noise levels of more than 2 dB. Where significant increases in traffic occur, the project will not result in an exceedance of the the 60 dB $L_{dn}$ standard. It is noted that the Raymus Expressway will be constructed along with the proposed project. The Raymus Expressway is anticipated in the General Plan. In addition, there are no existing residential land uses located along the section of the Raymus Expressway, under the Existing + Project scenario, with the exception of the proposed project. Impacts upon the project will be discussed later in this analysis.

*Cumulative and Cumulative Plus Project Scenario*

Under the Cumulative and Cumulative Plus Project conditions, the only roadway segment which may approach the significant increase criteria is Pillsbury Road, from Tannehill Drive to the Raymus Expessway, as shown in Table 7. The project increase is by 5 dB. The project will not result in an exceedance of the City exterior noise level standard.

Therefore, this would be a less-than-significant impact relative to the CEQA checklist threshold (a). Additionally, the noise level increases associated with the proposed project do not exceed the City's CEQA substantial increase criteria outlined above. Therefore, this would be a less-than-significant impact relative to the CEQA checklist threshold (b).

This impact is considered **less-than-significant** relative to the project's significance criteria.

Mitigation for Impact 2: **None required**

**Impact 3: Transportation Noise at New Sensitive Receptors**

*The proposed project could expose new noise-sensitive uses to transportation noise levels that exceed the City of Manteca exterior and interior noise level standards. This is considered to be a* ***potentially significant*** *impact.*

***Exterior Traffic Noise Level Impacts:***

Although CEQA does not require an EIR to evaluate noise impacts upon the project site, the future traffic noise levels could exceed the City of Manteca noise level criteria. Therefore, this analysis will provide guidance for determining the future traffic noise levels at the project site. The FHWA traffic noise prediction model was used to predict Cumulative + Project traffic noise levels at the proposed residential land uses associated with the project. Table 8 shows the predicted traffic noise levels at the proposed residential uses adjacent to the major project-area arterial roadways. Table 8 also indicates the property line noise barrier heights which may be required to achieve compliance with an exterior noise level standard of 60 dB $L_{dn}$.

**Table 8: Cumulative + Project Transportation Noise Levels at Proposed Residential Uses**

| Roadway | Receptor Description | Approximate Residential Setback, feet[1] | Level dB | Predicted Traffic Noise Levels, dB $L_{dn}$[2] | | | |
|---|---|---|---|---|---|---|---|
| | | | | No Wall | 6' Wall | 7' Wall | 8' Wall |
| Raymus Expy. | First Floor Backyard | 75' | 65 dB | 65 dB | 60 dB | Not Required | |
| Atherton Dr. | First Floor Backyard | 75' | 54 dB | 54 dB | None Required | | |
| Pillsbury Rd. | First Floor Backyard | 75' | 60 dB | 60 dB | None Required | | |

[1] Setback distances are measured in feet from the centerlines of the roadways to the center of residential backyards.
[2] The modeled noise barriers assume flat site conditions where roadway elevations, base of wall elevations, and building pad elevations are approximately equivalent.
-- Meets the City of Manteca exterior noise standard without mitigation. Standard does not apply to second floor facades.
Source: FHWA-RD-77-108 with inputs from Fehr & Peers, and j.c. brennan & associates, Inc. 2021.

***Interior Noise Impacts:***

Modern construction typically provides a 25 dB exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise of 70 dB $L_{dn}$, or less, will typically comply with the City of Manteca 45 dB $L_{dn}$ interior noise level standard. Additional noise reduction measures, such as acoustically rated windows are generally required for exterior noise levels exceeding 70 dB $L_{dn}$.

Based upon a 25 dB exterior-to-interior noise level reduction, interior noise levels are predicted to comply with the interior noise level standard of 45 dB $L_{dn}$.

This analysis assumes that mechanical ventilation will be provided to allow residents to keep doors and windows closed, as desired for acoustical isolation.

**Mitigation for Impact 3:**

***MM 3a:*** When final subdivision tentative maps are developed for the project site, which have building pad elevations, topography and relative elevation of the adjacent roadways, a more detailed analysis of exterior noise mitigation shall be conducted.

***MM3b:*** Mechanical ventilation shall be installed in all residential uses to allow residents to keep doors and windows closed, as desired for acoustical isolation.

Significance after Mitigation: **Less-than-significant**.

**Impact 4: Construction Vibration at Sensitive Receptors**

*The proposed project has the potential to expose sensitive receptors to substantial vibration associated with construction activities. This would be a* ***less-than-significant*** *impact.*

The primary vibration-generating activities associated with the proposed project would occur during construction when activities such as grading and utility placement.

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. Table 9 shows the typical vibration levels produced by construction equipment.

Sensitive receptors could be impacted by construction related vibrations, especially vibratory compactors/rollers. The nearest receptors are located approximately 50 feet or further from any areas of the project site that might require grading or paving. At this distance construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

**Table 9: Vibration Levels for Varying Construction Equipment**

| Type of Equipment | Peak Particle Velocity @ 25 feet (inches/second) | Peak Particle Velocity @ 50 feet (inches/second) | Peak Particle Velocity @ 100 feet (inches/second) |
|---|---|---|---|
| Large Bulldozer | 0.089 | 0.031 | 0.011 |
| Loaded Trucks | 0.076 | 0.027 | 0.010 |
| Small Bulldozer | 0.003 | 0.001 | 0.000 |
| Auger/drill Rigs | 0.089 | 0.031 | 0.011 |
| Jackhammer | 0.035 | 0.012 | 0.004 |
| Vibratory Hammer | 0.070 | 0.025 | 0.009 |
| Vibratory Compactor/roller | 0.210 | 0.074 | 0.026 |

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Guidelines, May 2006

The Table 8 data indicate that construction vibration levels anticipated for the project are less than the 0.1 in/sec criteria at distances of 50 feet. Therefore, construction vibrations are not

predicted to cause damage to existing buildings or cause annoyance to sensitive receptors. Implementation of the proposed project would have a **less than significant** impact.

Mitigation for Impact 4: **None required**

**Impact 5: Noise Levels from Park and Recreational Activities at Sensitive Receptors**

*The proposed project has the potential to expose sensitive receptors to substantial noise from proposed park uses. This would be a* **potentially significant** *impact.*

Once again, CEQA does not require determining if noise impacts affect the proposed project. However, parks do have the potential for exceeding the City of Manteca noise level criteria within the project site. This analysis will provide a potential determination of impacts from park and recreational activities. Children playing at neighborhood parks or outdoor recreational fields (softball, soccer, basketball, tennis) are often considered potentially significant noise sources which could adversely affect adjacent noise-sensitive land uses. Typical noise levels associated with groups of approximately 50 children playing at a distance of 50 feet generally range from 55 to 60 dB $L_{eq}$ and 70-75 dB $L_{max}$. It is expected that park activities would occur during daytime hours. Therefore, noise levels from the playgrounds would need to comply with the City of Manteca exterior noise level standards of 50 dB $L_{eq}$ and 70 dB $L_{max}$ at the nearest residential uses.

Based upon the reference noise level data discussed above, the 50 dB $L_{eq}$ noise contour would be located approximately 160 feet from the center of playgrounds or recreational fields. The 70 dB $L_{max}$ noise contour would extend approximately 90 feet from the center of playground or recreational fields. For residential backyards located less than 160 feet from the center of a playground or recreational field, noise levels may exceed the City of Manteca 50 dB $L_{eq}$ exterior noise level standard. In this case, construction of a 6-foot tall masonry sound wall would provide an approximate noise level reduction of 5 dB and would typically reduce noise levels to 50 dB $L_{eq}$ and 70 dB $L_{max}$, or less.

If park areas are separated from residential uses by local roadways, no additional mitigation measures would typically be considered necessary. However, where neighborhood parks abut residential uses, a 6-foot tall sound wall should be constructed. It is anticipated that these mitigation measures will result in compliance with the applicable City of Manteca noise standards.

*Mitigation for Impact 5:*

***MM 5:*** Based upon the reference noise level data discussed above, the 50 dB $L_{eq}$ noise contour would be located approximately 160 feet from the center of playgrounds or recreational fields. The 70 dB $L_{max}$ noise contour would extend approximately 90 feet from the center of playground or recreational fields. For residential backyards located less than 160 feet from the center of a playground or recreational field, noise levels may exceed the City of Manteca 50 dB $L_{eq}$ exterior noise level standard. In this case, construction of a 6-foot tall masonry sound wall would provide an approximate noise level reduction of 5 dB and would typically reduce noise levels to 50 dB $L_{eq}$ and 70 dB $L_{max}$, or less.

Significance after Mitigation: **Less-than-significant**.

***Cumulative Impacts and Mitigation Measures***

**Impact 6 Cumulative Noise Levels**

*The cumulative context for noise impacts associated with the Proposed Project consists of the existing and future noise sources that could affect the project or surrounding uses. Noise generated by construction would be temporary, and would not add to the permanent noise environment or be considered as part of the cumulative context. The total noise impact of the Proposed Project would be fairly small and would not be a substantial increase to the existing future noise environment. Thus, the Proposed Project would result in a* ***less-than-significant cumulative impact.***

*Traffic*

Cumulative noise impacts would occur primarily as a result of increased traffic on local roadways due to the Proposed Project and on-site activities resulting from operation of the proposed project. Table 7 above shows cumulative traffic noise levels with and without the Proposed Project. As discussed, the project would not result in significant increases in traffic noise levels at existing sensitive receptors. New residential uses will be constructed to comply with the applicable City of Manteca exterior and interior noise level standards.

*Cumulative Conclusion*

The traffic noise from the Proposed Project is not expected to produce noise levels that would exceed City standards. Increased project related traffic would increase traffic noise levels by less than the City's 10 dB increase criteria outlined in the Thresholds of Significance section, at existing sensitive receptors. Consequently, the total noise impact of the Proposed Project would not be a substantial increase to the future noise environment. The Proposed Project would result in a **less-than-significant cumulative impact**.

Mitigation for Impact 6: **None required**

# Appendix A
**Acoustical Terminology**

| | |
|---|---|
| **Acoustics** | The science of sound. |
| **Ambient Noise** | The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study. |
| **Attenuation** | The reduction of an acoustic signal. |
| **A-Weighting** | A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response. |
| **Decibel or dB** | Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell. |
| **CNEL** | Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging. |
| **Frequency** | The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz (Hz). |
| **$L_{dn}$** | Day/Night Average Sound Level. Similar to CNEL but with no evening weighting. |
| **$L_{eq}$** | Equivalent or energy-averaged sound level. |
| **$L_{max}$** | The highest root-mean-square (RMS) sound level measured over a given period of time. |
| **$L_{(n)}$** | The sound level exceeded a described percentile over a measurement period. For instance, an hourly $L_{50}$ is the sound level exceeded 50% of the time during the one hour period. |
| **Loudness** | A subjective term for the sensation of the magnitude of sound. |
| **Noise** | Unwanted sound. |
| **NRC** | Noise Reduction Coefficient. NRC is a single-number rating of the sound-absorption of a material equal to the arithmetic mean of the sound-absorption coefficients in the 250, 500, 1000, and 2,000 Hz octave frequency bands rounded to the nearest multiple of 0.05. It is a representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption. |
| **Peak Noise** | The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the AMaximum@ level, which is the highest RMS level. |
| **$RT_{60}$** | The time it takes reverberant sound to decay by 60 dB once the source has been removed. |
| **Sabin** | The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 Sabin. |
| **SEL** | Sound Exposure Level. SEL is s rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event. |
| **STC** | Sound Transmission Class. STC is an integer rating of how well a building partition attenuates airborne sound. It is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations. |
| **Threshold of Hearing** | The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing. |
| **Threshold of Pain** | Approximately 120 dB above the threshold of hearing. |
| **Impulsive** | Sound of short duration, usually less than one second, with an abrupt onset and rapid decay. |
| **Simple Tone** | Any sound which can be judged as audible as a single pitch or set of single pitches. |

**Appendix B**
2020-124 Hat Ranch EIR
24hr Continuous Noise Monitoring
Site A

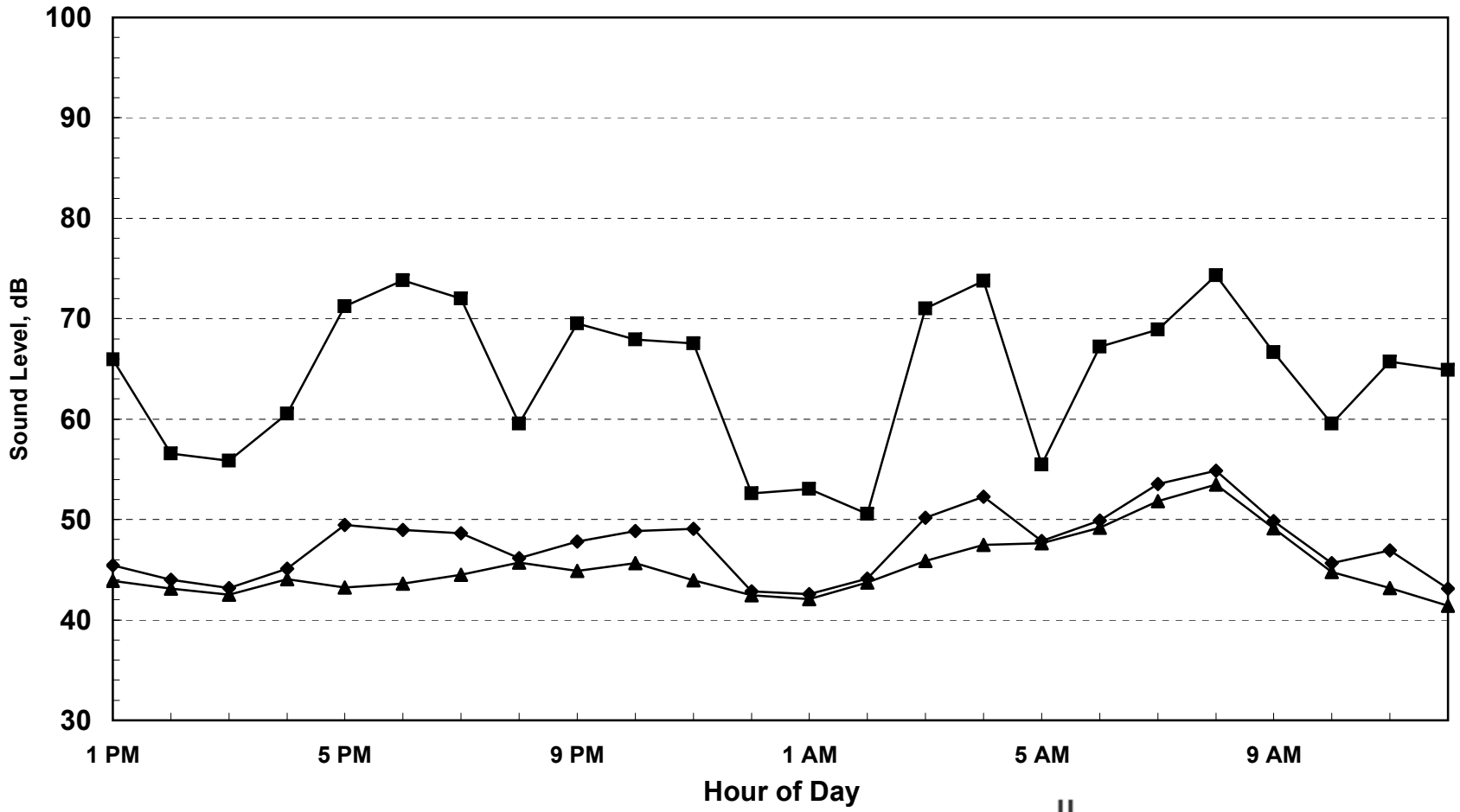
| Hour | Leq | Lmax | L50 | L90 |
|---|---|---|---|---|
| 13:00 | 45 | 66 | 44 | 42 |
| 14:00 | 44 | 57 | 43 | 42 |
| 15:00 | 43 | 56 | 42 | 41 |
| 16:00 | 45 | 61 | 44 | 41 |
| 17:00 | 49 | 71 | 43 | 42 |
| 18:00 | 49 | 74 | 44 | 42 |
| 19:00 | 49 | 72 | 45 | 43 |
| 20:00 | 46 | 60 | 46 | 44 |
| 21:00 | 48 | 70 | 45 | 43 |
| 22:00 | 49 | 68 | 46 | 43 |
| 23:00 | 49 | 68 | 44 | 40 |
| 0:00 | 43 | 53 | 42 | 41 |
| 1:00 | 43 | 53 | 42 | 40 |
| 2:00 | 44 | 51 | 44 | 42 |
| 3:00 | 50 | 71 | 46 | 44 |
| 4:00 | 52 | 74 | 47 | 45 |
| 5:00 | 48 | 55 | 48 | 46 |
| 6:00 | 50 | 67 | 49 | 47 |
| 7:00 | 54 | 69 | 52 | 50 |
| 8:00 | 55 | 74 | 53 | 51 |
| 9:00 | 50 | 67 | 49 | 46 |
| 10:00 | 46 | 60 | 45 | 43 |
| 11:00 | 47 | 66 | 43 | 41 |
| 12:00 | 43 | 65 | 41 | 39 |

| | Statistical Summary | | | | | |
|---|---|---|---|---|---|---|
| | Daytime (7 a.m. - 10 p.m.) | | | Nighttime (10 p.m. - 7 a.m.) | | |
| | High | Low | Average | High | Low | Average |
| Leq (Average) | 54.8 | 43.1 | 49.0 | 52.3 | 42.6 | 48.6 |
| Lmax (Maximum) | 74.3 | 55.8 | 65.7 | 73.8 | 50.6 | 62.1 |
| L50 (Median) | 53.5 | 41.4 | 45.3 | 49.2 | 42.1 | 45.3 |
| L90 (Background) | 51.2 | 39.4 | 43.4 | 47.0 | 39.8 | 43.1 |

| | |
|---|---|
| Computed Ldn, dB | 55.1 |
| % Daytime Energy | 65% |
| % Nighttime Energy | 35% |

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**Appendix B**
2020-124 Hat Ranch EIR
24hr Continuous Noise Monitoring
Site A




**Ldn = 55.1 dB**

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**Appendix C**

## FHWA-RD-77-108 Highway Traffic Noise Prediction Model

## Data Input Sheet

Project #: 2020-124
Description: Hat Ranch Existing
Ldn/CNEL: Ldn
Hard/Soft: Soft

| Segment | Roadway Name | Segment | ADT | Day % | Eve % | Night % | % Med. Trucks | % Hvy. Trucks | Speed | Distance | Offset (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Woodward Ave | West of Main Street | 4,625 | 83 | | 17 | 2 | 1 | 45 | 75 | -5 |
| 2 | Woodward Ave | Main Street to Pillsbury Road | 4,500 | 83 | | 17 | 2 | 1 | 45 | 75 | -5 |
| 3 | Woodward Ave | Pillsbury road to Atherton Drive | 4,200 | 83 | | 17 | 2 | 1 | 45 | 75 | -5 |
| 4 | Woodward Ave | Atherton Drive to Moffat Blvd | 3,475 | 83 | | 17 | 2 | 1 | 45 | 75 | |
| 5 | Main Street | Woodward Ave to Future Raymus | 6,300 | 83 | | 17 | 1 | 0.5 | 40 | 75 | |
| 6 | Main Street | Woodward Ave to Atherton Dr | 7,950 | 83 | | 17 | 1 | 0.5 | 40 | 75 | -5 |
| 7 | Main Street | Atherton Drive to SR 120 | 7,675 | 83 | | 17 | 1 | 0.5 | 40 | 75 | |
| 8 | Main Street | SR 120 to Mission Ridge Dr | 15,325 | 83 | | 17 | 1 | 0.5 | 40 | 75 | |
| 9 | Main Street | North of Mission Ridge Dr | 11,475 | 83 | | 17 | 1 | 0.5 | 40 | 75 | -5 |
| 10 | Manteca Road | South of Future Raymus Ex | 2,575 | 83 | | 17 | 1 | 0.5 | 40 | 75 | -5 |
| 11 | Pillsbury Road | Woodward Ave to Heartland Dr | 1,400 | 83 | | 17 | 1 | 0.5 | 35 | 75 | -5 |
| 12 | Pillsbury Road | Heartland Drive to Tannehill Dr | 450 | 83 | | 17 | 1 | 0.5 | 35 | 75 | -5 |
| 13 | Pillsbury Road | Tannehill Drive to Future Raymus | 450 | 83 | | 17 | 1 | 0.5 | 35 | 75 | -5 |
| 14 | Atherton Road | North of Woodward Ave | 325 | 83 | | 17 | 1 | 0.5 | 35 | 75 | -5 |
| 15 | Atherton Road | Woodward Ave to North Project Site | 500 | 83 | | 17 | 1 | 0.5 | 35 | 75 | -5 |
| 16 | Atherton Road | North Project Site to Future Raymus | 0 | | | | | | | | |
| 17 | Atherton Road | South of Future Raymus Ex | 0 | | | | | | | | |
| 18 | Moffatt Blvd | North of Woodward Ave | 7,450 | 83 | | 17 | 2 | 2 | 45 | 75 | |
| 19 | Moffatt Blvd | South of Woodward Ave | 10,400 | 83 | | 17 | 2 | 2 | 45 | 75 | |
| 20 | | | | | | | | | | | |
| 21 | | | | | | | | | | | |
| 22 | | | | | | | | | | | |
| 23 | | | | | | | | | | | |
| 24 | | | | | | | | | | | |
| 25 | | | | | | | | | | | |

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**Appendix C**

## FHWA-RD-77-108 Highway Traffic Noise Prediction Model
## Predicted Levels

Project #: 2020-124
Description: Hat Ranch Existing
Ldn/CNEL: Ldn
Hard/Soft: Soft

| Segment | Roadway Name | Segment | Autos | Medium Trucks | Heavy Trucks | Total |
|---|---|---|---|---|---|---|
| 1 | Woodward Ave | West of Main Street | 55.3 | 46.7 | 48.2 | 57 |
| 2 | Woodward Ave | Main Street to Pillsbury Road | 55.2 | 46.6 | 48.1 | 56 |
| 3 | Woodward Ave | Pillsbury road to Atherton Drive | 54.9 | 46.3 | 47.8 | 56 |
| 4 | Woodward Ave | Atherton Drive to Moffat Blvd | 59.1 | 50.5 | 52.0 | 60 |
| 5 | Main Street | Woodward Ave to Future Raymus | 60.3 | 49.3 | 51.1 | 61 |
| 6 | Main Street | Woodward Ave to Atherton Dr | 56.3 | 45.3 | 47.1 | 57 |
| 7 | Main Street | Atherton Drive to SR 120 | 61.1 | 50.1 | 51.9 | 62 |
| 8 | Main Street | SR 120 to Mission Ridge Dr | 64.1 | 53.1 | 54.9 | 65 |
| 9 | Main Street | North of Mission Ridge Dr | 57.9 | 46.9 | 48.7 | 59 |
| 10 | Manteca Road | South of Future Raymus Ex | 51.4 | 40.4 | 42.2 | 52 |
| 11 | Pillsbury Road | Woodward Ave to Heartland Dr | 47.1 | 36.8 | 39.0 | 48 |
| 12 | Pillsbury Road | Heartland Drive to Tannehill Dr | 42.1 | 31.9 | 34.1 | 43 |
| 13 | Pillsbury Road | Tannehill Drive to Future Raymus | 42.1 | 31.9 | 34.1 | 43 |
| 14 | Atherton Road | North of Woodward Ave | 40.7 | 30.5 | 32.7 | 42 |
| 15 | Atherton Road | Woodward Ave to North Project Site | 42.6 | 32.3 | 34.5 | 44 |
| 18 | Moffatt Blvd | North of Woodward Ave | 62.4 | 53.8 | 58.3 | 64 |
| 19 | Moffatt Blvd | South of Woodward Ave | 63.8 | 55.2 | 59.7 | 66 |

**Appendix C**

## FHWA-RD-77-108 Highway Traffic Noise Prediction Model
## Noise Contour Output

Project #: 2020-124
Description: Hat Ranch Existing
Ldn/CNEL: Ldn
Hard/Soft: Soft

| | | | -------- Distances to Traffic Noise Contours -------- | | | | |
|---|---|---|---|---|---|---|---|
| Segment | Roadway Name | Segment | 75 | 70 | 65 | 60 | 55 |
| 1 | Woodward Ave | West of Main Street | 4 | 10 | 21 | 44 | 95 |
| 2 | Woodward Ave | Main Street to Pillsbury Road | 4 | 9 | 20 | 43 | 94 |
| 3 | Woodward Ave | Pillsbury road to Atherton Drive | 4 | 9 | 19 | 42 | 90 |
| 4 | Woodward Ave | Atherton Drive to Moffat Blvd | 8 | 17 | 37 | 79 | 170 |
| 5 | Main Street | Woodward Ave to Future Raymus | 9 | 19 | 41 | 88 | 190 |
| 6 | Main Street | Woodward Ave to Atherton Dr | 5 | 10 | 22 | 48 | 103 |
| 7 | Main Street | Atherton Drive to SR 120 | 10 | 22 | 47 | 101 | 217 |
| 8 | Main Street | SR 120 to Mission Ridge Dr | 16 | 34 | 74 | 159 | 343 |
| 9 | Main Street | North of Mission Ridge Dr | 6 | 13 | 28 | 61 | 131 |
| 10 | Manteca Road | South of Future Raymus Ex | 2 | 5 | 10 | 23 | 49 |
| 11 | Pillsbury Road | Woodward Ave to Heartland Dr | 1 | 3 | 6 | 12 | 26 |
| 12 | Pillsbury Road | Heartland Drive to Tannehill Dr | 1 | 1 | 3 | 6 | 12 |
| 13 | Pillsbury Road | Tannehill Drive to Future Raymus | 1 | 1 | 3 | 6 | 12 |
| 14 | Atherton Road | North of Woodward Ave | 0 | 1 | 2 | 5 | 10 |
| 15 | Atherton Road | Woodward Ave to North Project Site | 1 | 1 | 3 | 6 | 13 |
| 18 | Moffatt Blvd | North of Woodward Ave | 14 | 31 | 66 | 143 | 308 |
| 19 | Moffatt Blvd | South of Woodward Ave | 18 | 38 | 83 | 179 | 385 |

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**Appendix C**

## FHWA-RD-77-108 Highway Traffic Noise Prediction Model

## Data Input Sheet

Project #: 2020-124
Description: Hat Ranch Existing + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

| Segment | Roadway Name | Segment | ADT | Day % | Eve % | Night % | % Med. Trucks | % Hvy. Trucks | Speed | Distance | Offset (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Woodward Ave | West of Main Street | 5,075 | 83 | | 17 | 2 | 1 | 45 | 75 | -5 |
| 2 | Woodward Ave | Main Street to Pillsbury Road | 8,570 | 83 | | 17 | 2 | 1 | 45 | 75 | -5 |
| 3 | Woodward Ave | Pillsbury road to Atherton Drive | 6,545 | 83 | | 17 | 2 | 1 | 45 | 75 | -5 |
| 4 | Woodward Ave | Atherton Drive to Moffat Blvd | 4,490 | 83 | | 17 | 2 | 1 | 45 | 75 | |
| 5 | Main Street | Woodward Ave to Future Raymus | 7,265 | 83 | | 17 | 1 | 0.5 | 40 | 75 | |
| 6 | Main Street | Woodward Ave to Atherton Dr | 12,515 | 83 | | 17 | 1 | 0.5 | 40 | 75 | -5 |
| 7 | Main Street | Atherton Drive to SR 120 | 12,240 | 83 | | 17 | 1 | 0.5 | 40 | 75 | |
| 8 | Main Street | SR 120 to Mission Ridge Dr | 15,800 | 83 | | 17 | 1 | 0.5 | 40 | 75 | |
| 9 | Main Street | North of Mission Ridge Dr | 11,935 | 83 | | 17 | 1 | 0.5 | 40 | 75 | -5 |
| 10 | Manteca Road | South of Future Raymus Ex | 2,625 | 83 | | 17 | 1 | 0.5 | 40 | 75 | -5 |
| 11 | Pillsbury Road | Woodward Ave to Heartland Dr | 4,860 | 83 | | 17 | 1 | 0.5 | 35 | 75 | -5 |
| 12 | Pillsbury Road | Heartland Drive to Tannehill Dr | 3,915 | 83 | | 17 | 1 | 0.5 | 35 | 75 | -5 |
| 13 | Pillsbury Road | Tannehill Drive to Future Raymus | 3,915 | 83 | | 17 | 1 | 0.5 | 35 | 75 | -5 |
| 14 | Atherton Road | North of Woodward Ave | 420 | 83 | | 17 | 1 | 0.5 | 35 | 75 | -5 |
| 15 | Atherton Road | Woodward Ave to North Project Site | 2,210 | 83 | | 17 | 1 | 0.5 | 35 | 75 | -5 |
| 16 | Atherton Road | North Project Site to Future Raymus | 650 | 83 | | 17 | 1 | 0.5 | 35 | 75 | |
| 17 | Atherton Road | South of Future Raymus Ex | 90 | 83 | | 17 | 1 | 0.5 | 35 | 75 | |
| 18 | Moffatt Blvd | North of Woodward Ave | 7,640 | 83 | | 17 | 2 | 2 | 45 | 75 | |
| 19 | Moffatt Blvd | South of Woodward Ave | 11,225 | 83 | | 17 | 2 | 2 | 45 | 75 | |
| 20 | Pillsbury Road | South of Raymus Expressway | 290 | 83 | | 17 | 1 | 0.5 | 35 | 75 | |
| 21 | Raymus Expressway | Manteca Rd to Project Dwy West | 0 | | | | | | | | |
| 22 | Raymus Expressway | Project Dwy West to Pillsbury Rd | 1,065 | 83 | | 17 | 1 | 1 | 45 | 75 | |
| 23 | Raymus Expressway | Pillsbury Rd to Atherton Rd | 480 | 83 | | 17 | 1 | 1 | 45 | 75 | |
| 24 | Raymus Expressway | Atherton Rd to Austin Rd | 640 | | | | | | | | |
| 25 | | | | | | | | | | | |



**Appendix C**

## FHWA-RD-77-108 Highway Traffic Noise Prediction Model
## Predicted Levels

Project #: 2020-124
Description: Hat Ranch Existing + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

| Segment | Roadway Name | Segment | Autos | Medium Trucks | Heavy Trucks | Total |
|---|---|---|---|---|---|---|
| 1 | Woodward Ave | West of Main Street | 55.7 | 47.1 | 48.6 | 57 |
| 2 | Woodward Ave | Main Street to Pillsbury Road | 58.0 | 49.4 | 50.9 | 59 |
| 3 | Woodward Ave | Pillsbury road to Atherton Drive | 56.8 | 48.2 | 49.7 | 58 |
| 4 | Woodward Ave | Atherton Drive to Moffat Blvd | 60.2 | 51.6 | 53.1 | 61 |
| 5 | Main Street | Woodward Ave to Future Raymus | 60.9 | 49.9 | 51.7 | 62 |
| 6 | Main Street | Woodward Ave to Atherton Dr | 58.2 | 47.2 | 49.0 | 59 |
| 7 | Main Street | Atherton Drive to SR 120 | 63.1 | 52.1 | 54.0 | 64 |
| 8 | Main Street | SR 120 to Mission Ridge Dr | 64.3 | 53.2 | 55.1 | 65 |
| 9 | Main Street | North of Mission Ridge Dr | 58.0 | 47.0 | 48.8 | 59 |
| 10 | Manteca Road | South of Future Raymus Ex | 51.5 | 40.5 | 42.3 | 52 |
| 11 | Pillsbury Road | Woodward Ave to Heartland Dr | 52.5 | 42.2 | 44.4 | 53 |
| 12 | Pillsbury Road | Heartland Drive to Tannehill Dr | 51.5 | 41.3 | 43.5 | 52 |
| 13 | Pillsbury Road | Tannehill Drive to Future Raymus | 51.5 | 41.3 | 43.5 | 52 |
| 14 | Atherton Road | North of Woodward Ave | 41.8 | 31.6 | 33.8 | 43 |
| 15 | Atherton Road | Woodward Ave to North Project Site | 49.0 | 38.8 | 41.0 | 50 |
| 16 | Atherton Road | North Project Site to Future Raymus | 48.7 | 38.5 | 40.7 | 50 |
| 17 | Atherton Road | South of Future Raymus Ex | 40.1 | 29.9 | 32.1 | 41 |
| 18 | Moffatt Blvd | North of Woodward Ave | 62.5 | 53.9 | 58.4 | 64 |
| 19 | Moffatt Blvd | South of Woodward Ave | 64.1 | 55.6 | 60.1 | 66 |
| 20 | Pillsbury Road | South of Raymus Expressway | 45.2 | 35.0 | 37.2 | 46 |
| | | | | | | |
| 22 | Raymus Expressway | Project Dwy West to Pillsbury Rd | 54.0 | 42.3 | 46.8 | 55 |
| 23 | Raymus Expressway | Pillsbury Rd to Atherton Rd | 50.5 | 38.9 | 43.4 | 52 |
| 24 | Raymus Expressway | Atherton Rd to Austin Rd | 51.8 | 40.1 | 44.6 | 53 |

**Appendix C**

## FHWA-RD-77-108 Highway Traffic Noise Prediction Model
## Noise Contour Output

Project #: 2020-124
Description: Hat Ranch Existing + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

| | | | -------- Distances to Traffic Noise Contours -------- | | | | |
|---|---|---|---|---|---|---|---|
| Segment | Roadway Name | Segment | 75 | 70 | 65 | 60 | 55 |
| 1 | Woodward Ave | West of Main Street | 5 | 10 | 22 | 47 | 102 |
| 2 | Woodward Ave | Main Street to Pillsbury Road | 7 | 14 | 31 | 67 | 144 |
| 3 | Woodward Ave | Pillsbury road to Atherton Drive | 6 | 12 | 26 | 56 | 120 |
| 4 | Woodward Ave | Atherton Drive to Moffat Blvd | 9 | 20 | 43 | 94 | 202 |
| 5 | Main Street | Woodward Ave to Future Raymus | 10 | 21 | 45 | 97 | 209 |
| 6 | Main Street | Woodward Ave to Atherton Dr | 6 | 14 | 30 | 65 | 139 |
| 7 | Main Street | Atherton Drive to SR 120 | 14 | 30 | 64 | 137 | 296 |
| 8 | Main Street | SR 120 to Mission Ridge Dr | 16 | 35 | 76 | 163 | 351 |
| 9 | Main Street | North of Mission Ridge Dr | 6 | 13 | 29 | 63 | 135 |
| 10 | Manteca Road | South of Future Raymus Ex | 2 | 5 | 11 | 23 | 49 |
| 11 | Pillsbury Road | Woodward Ave to Heartland Dr | 3 | 6 | 13 | 27 | 59 |
| 12 | Pillsbury Road | Heartland Drive to Tannehill Dr | 2 | 5 | 11 | 24 | 51 |
| 13 | Pillsbury Road | Tannehill Drive to Future Raymus | 2 | 5 | 11 | 24 | 51 |
| 14 | Atherton Road | North of Woodward Ave | 1 | 1 | 2 | 5 | 12 |
| 15 | Atherton Road | Woodward Ave to North Project Site | 2 | 3 | 8 | 16 | 35 |
| 16 | Atherton Road | North Project Site to Future Raymus | 2 | 3 | 7 | 15 | 33 |
| 17 | Atherton Road | South of Future Raymus Ex | 0 | 1 | 2 | 4 | 9 |
| 18 | Moffatt Blvd | North of Woodward Ave | 15 | 31 | 67 | 145 | 313 |
| 19 | Moffatt Blvd | South of Woodward Ave | 19 | 40 | 87 | 188 | 405 |
| 20 | Pillsbury Road | South of Raymus Expressway | 1 | 2 | 4 | 9 | 19 |
| | | | | | | | |
| 22 | Raymus Expressway | Project Dwy West to Pillsbury Rd | 3 | 7 | 16 | 35 | 75 |
| 23 | Raymus Expressway | Pillsbury Rd to Atherton Rd | 2 | 4 | 9 | 20 | 44 |
| 24 | Raymus Expressway | Atherton Rd to Austin Rd | 2 | 5 | 12 | 25 | 53 |

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**Appendix C**

## FHWA-RD-77-108 Highway Traffic Noise Prediction Model

## Data Input Sheet

Project #: 2020-124
Description: Hat Ranch Cumulative
Ldn/CNEL: Ldn
Hard/Soft: Soft

| Segment | Roadway Name | Segment | ADT | Day % | Eve % | Night % | % Med. Trucks | % Hvy. Trucks | Speed | Distance | Offset (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Woodward Ave | West of Main Street | 5,925 | 83 | | 17 | 2 | 1 | 45 | 75 | -5 |
| 2 | Woodward Ave | Main Street to Pillsbury Road | 9,400 | 83 | | 17 | 2 | 1 | 45 | 75 | -5 |
| 3 | Woodward Ave | Pillsbury road to Atherton Drive | 10,275 | 83 | | 17 | 2 | 1 | 45 | 75 | -5 |
| 4 | Woodward Ave | Atherton Drive to Moffat Blvd | 11,000 | 83 | | 17 | 2 | 1 | 45 | 75 | |
| 5 | Main Street | Woodward Ave to Future Raymus | 16,925 | 83 | | 17 | 1 | 0.5 | 40 | 75 | |
| 6 | Main Street | Woodward Ave to Atherton Dr | 19,925 | 83 | | 17 | 1 | 0.5 | 40 | 75 | -5 |
| 7 | Main Street | Atherton Drive to SR 120 | 19,650 | 83 | | 17 | 1 | 0.5 | 40 | 75 | |
| 8 | Main Street | SR 120 to Mission Ridge Dr | 22,300 | 83 | | 17 | 1 | 0.5 | 40 | 75 | |
| 9 | Main Street | North of Mission Ridge Dr | 16,350 | 83 | | 17 | 1 | 0.5 | 40 | 75 | -5 |
| 10 | Manteca Road | South of Future Raymus Ex | 2,850 | 83 | | 17 | 1 | 0.5 | 40 | 75 | -5 |
| 11 | Pillsbury Road | Woodward Ave to Heartland Dr | 6,875 | 83 | | 17 | 1 | 0.5 | 35 | 75 | -5 |
| 12 | Pillsbury Road | Heartland Drive to Tannehill Dr | 2,600 | 83 | | 17 | 1 | 0.5 | 35 | 75 | -5 |
| 13 | Pillsbury Road | Tannehill Drive to Future Raymus | 1,875 | 83 | | 17 | 1 | 0.5 | 35 | 75 | -5 |
| 14 | Atherton Road | North of Woodward Ave | 2,275 | 83 | | 17 | 1 | 0.5 | 35 | 75 | -5 |
| 15 | Atherton Road | Woodward Ave to North Project Site | 9,525 | 83 | | 17 | 1 | 0.5 | 35 | 75 | -5 |
| 16 | Atherton Road | North Project Site to Future Raymus | 950 | 83 | | 17 | 1 | 0.5 | 35 | 75 | |
| 17 | Atherton Road | South of Future Raymus Ex | 750 | 83 | | 17 | 1 | 0.5 | 35 | 75 | |
| 18 | Moffatt Blvd | North of Woodward Ave | 8,875 | 83 | | 17 | 2 | 2 | 45 | 75 | |
| 19 | Moffatt Blvd | South of Woodward Ave | 19,475 | 83 | | 17 | 2 | 2 | 45 | 75 | |
| 20 | Pillsbury Road | South of Raymus Expressway | 725 | 83 | | 17 | 1 | 0.5 | 35 | 75 | |
| 21 | Raymus Expressway | Manteca Rd to Project Dwy West | 9,675 | 83 | | 17 | 1 | 1 | 45 | 75 | |
| 22 | Raymus Expressway | Project Dwy West to Pillsbury Rd | 2,200 | 83 | | 17 | 1 | 1 | 45 | 75 | |
| 23 | Raymus Expressway | Pillsbury Rd to Atherton Rd | 2,700 | 83 | | 17 | 1 | 1 | 45 | 75 | |
| 24 | Raymus Expressway | Atherton Rd to Austin Rd | 2,725 | | | | | | | | |
| 25 | | | | | | | | | | | |

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**Appendix C**

## FHWA-RD-77-108 Highway Traffic Noise Prediction Model
## Predicted Levels

Project #: 2020-124
Description: Hat Ranch Cumulative
Ldn/CNEL: Ldn
Hard/Soft: Soft

| Segment | Roadway Name | Segment | Autos | Medium Trucks | Heavy Trucks | Total |
|---|---|---|---|---|---|---|
| 1 | Woodward Ave | West of Main Street | 56.4 | 47.8 | 49.3 | 58 |
| 2 | Woodward Ave | Main Street to Pillsbury Road | 58.4 | 49.8 | 51.3 | 60 |
| 3 | Woodward Ave | Pillsbury road to Atherton Drive | 58.8 | 50.2 | 51.7 | 60 |
| 4 | Woodward Ave | Atherton Drive to Moffat Blvd | 64.1 | 55.5 | 57.0 | 65 |
| 5 | Main Street | Woodward Ave to Future Raymus | 64.6 | 53.5 | 55.4 | 65 |
| 6 | Main Street | Woodward Ave to Atherton Dr | 60.3 | 49.3 | 51.1 | 61 |
| 7 | Main Street | Atherton Drive to SR 120 | 65.2 | 54.2 | 56.0 | 66 |
| 8 | Main Street | SR 120 to Mission Ridge Dr | 65.8 | 54.7 | 56.6 | 67 |
| 9 | Main Street | North of Mission Ridge Dr | 59.4 | 48.4 | 50.2 | 60 |
| 10 | Manteca Road | South of Future Raymus Ex | 51.8 | 40.8 | 42.6 | 53 |
| 11 | Pillsbury Road | Woodward Ave to Heartland Dr | 54.0 | 43.7 | 45.9 | 55 |
| 12 | Pillsbury Road | Heartland Drive to Tannehill Dr | 49.7 | 39.5 | 41.7 | 51 |
| 13 | Pillsbury Road | Tannehill Drive to Future Raymus | 48.3 | 38.1 | 40.3 | 49 |
| 14 | Atherton Road | North of Woodward Ave | 49.2 | 38.9 | 41.1 | 50 |
| 15 | Atherton Road | Woodward Ave to North Project Site | 55.4 | 45.1 | 47.3 | 56 |
| 16 | Atherton Road | North Project Site to Future Raymus | 50.4 | 40.1 | 42.3 | 51 |
| 17 | Atherton Road | South of Future Raymus Ex | 49.3 | 39.1 | 41.3 | 50 |
| 18 | Moffatt Blvd | North of Woodward Ave | 63.1 | 54.5 | 59.0 | 65 |
| 19 | Moffatt Blvd | South of Woodward Ave | 66.5 | 58.0 | 62.5 | 68 |
| 20 | Pillsbury Road | South of Raymus Expressway | 49.2 | 39.0 | 41.1 | 50 |
| 21 | Raymus Expressway | Manteca Rd to Project Dwy West | 63.6 | 51.9 | 56.4 | 65 |
| 22 | Raymus Expressway | Project Dwy West to Pillsbury Rd | 57.1 | 45.5 | 50.0 | 58 |
| 23 | Raymus Expressway | Pillsbury Rd to Atherton Rd | 58.0 | 46.4 | 50.9 | 59 |
| 24 | Raymus Expressway | Atherton Rd to Austin Rd | 58.1 | 46.4 | 50.9 | 59 |

**Appendix C**

## FHWA-RD-77-108 Highway Traffic Noise Prediction Model
## Noise Contour Output

Project #: 2020-124
Description: Hat Ranch Cumulative
Ldn/CNEL: Ldn
Hard/Soft: Soft

| | | | -------- Distances to Traffic Noise Contours -------- | | | | |
|---|---|---|---|---|---|---|---|
| Segment | Roadway Name | Segment | 75 | 70 | 65 | 60 | 55 |
| 1 | Woodward Ave | West of Main Street | 5 | 11 | 24 | 52 | 113 |
| 2 | Woodward Ave | Main Street to Pillsbury Road | 7 | 15 | 33 | 71 | 153 |
| 3 | Woodward Ave | Pillsbury road to Atherton Drive | 8 | 16 | 35 | 75 | 163 |
| 4 | Woodward Ave | Atherton Drive to Moffat Blvd | 17 | 37 | 79 | 170 | 366 |
| 5 | Main Street | Woodward Ave to Future Raymus | 17 | 37 | 79 | 170 | 367 |
| 6 | Main Street | Woodward Ave to Atherton Dr | 9 | 19 | 41 | 88 | 190 |
| 7 | Main Street | Atherton Drive to SR 120 | 19 | 41 | 87 | 188 | 405 |
| 8 | Main Street | SR 120 to Mission Ridge Dr | 20 | 44 | 95 | 205 | 441 |
| 9 | Main Street | North of Mission Ridge Dr | 8 | 17 | 36 | 77 | 166 |
| 10 | Manteca Road | South of Future Raymus Ex | 2 | 5 | 11 | 24 | 52 |
| 11 | Pillsbury Road | Woodward Ave to Heartland Dr | 3 | 7 | 16 | 35 | 74 |
| 12 | Pillsbury Road | Heartland Drive to Tannehill Dr | 2 | 4 | 8 | 18 | 39 |
| 13 | Pillsbury Road | Tannehill Drive to Future Raymus | 1 | 3 | 7 | 15 | 31 |
| 14 | Atherton Road | North of Woodward Ave | 2 | 4 | 8 | 17 | 36 |
| 15 | Atherton Road | Woodward Ave to North Project Site | 4 | 9 | 20 | 43 | 92 |
| 16 | Atherton Road | North Project Site to Future Raymus | 2 | 4 | 9 | 20 | 43 |
| 17 | Atherton Road | South of Future Raymus Ex | 2 | 4 | 8 | 17 | 37 |
| 18 | Moffatt Blvd | North of Woodward Ave | 16 | 35 | 75 | 161 | 346 |
| 19 | Moffatt Blvd | South of Woodward Ave | 27 | 58 | 126 | 271 | 584 |
| 20 | Pillsbury Road | South of Raymus Expressway | 2 | 4 | 8 | 17 | 36 |
| 21 | Raymus Expressway | Manteca Rd to Project Dwy West | 15 | 33 | 70 | 152 | 326 |
| 22 | Raymus Expressway | Project Dwy West to Pillsbury Rd | 6 | 12 | 26 | 56 | 122 |
| 23 | Raymus Expressway | Pillsbury Rd to Atherton Rd | 6 | 14 | 30 | 65 | 139 |
| 24 | Raymus Expressway | Atherton Rd to Austin Rd | 7 | 14 | 30 | 65 | 140 |



**Appendix C**

## FHWA-RD-77-108 Highway Traffic Noise Prediction Model

## Data Input Sheet

Project #: 2020-124
Description: Hat Ranch Cumulative + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

| Segment | Roadway Name | Segment | ADT | Day % | Eve % | Night % | % Med. Trucks | % Hvy. Trucks | Speed | Distance | Offset (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Woodward Ave | West of Main Street | 6,375 | 83 | | 17 | 2 | 1 | 45 | 75 | -5 |
| 2 | Woodward Ave | Main Street to Pillsbury Road | 13,470 | 83 | | 17 | 2 | 1 | 45 | 75 | -5 |
| 3 | Woodward Ave | Pillsbury road to Atherton Drive | 12,620 | 83 | | 17 | 2 | 1 | 45 | 75 | -5 |
| 4 | Woodward Ave | Atherton Drive to Moffat Blvd | 12,015 | 83 | | 17 | 2 | 1 | 45 | 75 | |
| 5 | Main Street | Woodward Ave to Future Raymus | 17,890 | 83 | | 17 | 1 | 0.5 | 40 | 75 | |
| 6 | Main Street | Woodward Ave to Atherton Dr | 24,490 | 83 | | 17 | 1 | 0.5 | 40 | 75 | -5 |
| 7 | Main Street | Atherton Drive to SR 120 | 24,215 | 83 | | 17 | 1 | 0.5 | 40 | 75 | |
| 8 | Main Street | SR 120 to Mission Ridge Dr | 22,775 | 83 | | 17 | 1 | 0.5 | 40 | 75 | |
| 9 | Main Street | North of Mission Ridge Dr | 16,810 | 83 | | 17 | 1 | 0.5 | 40 | 75 | -5 |
| 10 | Manteca Road | South of Future Raymus Ex | 2,900 | 83 | | 17 | 1 | 0.5 | 40 | 75 | -5 |
| 11 | Pillsbury Road | Woodward Ave to Heartland Dr | 10,335 | 83 | | 17 | 1 | 0.5 | 35 | 75 | -5 |
| 12 | Pillsbury Road | Heartland Drive to Tannehill Dr | 6,065 | 83 | | 17 | 1 | 0.5 | 35 | 75 | -5 |
| 13 | Pillsbury Road | Tannehill Drive to Future Raymus | 5,340 | 83 | | 17 | 1 | 0.5 | 35 | 75 | -5 |
| 14 | Atherton Road | North of Woodward Ave | 2,370 | 83 | | 17 | 1 | 0.5 | 35 | 75 | -5 |
| 15 | Atherton Road | Woodward Ave to North Project Site | 11,235 | 83 | | 17 | 1 | 0.5 | 35 | 75 | -5 |
| 16 | Atherton Road | North Project Site to Future Raymus | 1,600 | 83 | | 17 | 1 | 0.5 | 35 | 75 | |
| 17 | Atherton Road | South of Future Raymus Ex | 840 | 83 | | 17 | 1 | 0.5 | 35 | 75 | |
| 18 | Moffatt Blvd | North of Woodward Ave | 9,065 | 83 | | 17 | 2 | 2 | 45 | 75 | |
| 19 | Moffatt Blvd | South of Woodward Ave | 20,300 | 83 | | 17 | 2 | 2 | 45 | 75 | |
| 20 | Pillsbury Road | South of Raymus Expressway | 1,015 | 83 | | 17 | 1 | 0.5 | 35 | 75 | |
| 21 | Raymus Expressway | Manteca Rd to Project Dwy West | 9,675 | 83 | | 17 | 1 | 1 | 45 | 75 | |
| 22 | Raymus Expressway | Project Dwy West to Pillsbury Rd | 3,265 | 83 | | 17 | 1 | 1 | 45 | 75 | |
| 23 | Raymus Expressway | Pillsbury Rd to Atherton Rd | 3,180 | 83 | | 17 | 1 | 1 | 45 | 75 | |
| 24 | Raymus Expressway | Atherton Rd to Austin Rd | 3,365 | | | | | | | | |
| 25 | | | | | | | | | | | |

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**Appendix C**

## FHWA-RD-77-108 Highway Traffic Noise Prediction Model
## Predicted Levels

Project #: 2020-124
Description: Hat Ranch Cumulative + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

| Segment | Roadway Name | Segment | Autos | Medium Trucks | Heavy Trucks | Total |
|---|---|---|---|---|---|---|
| 1 | Woodward Ave | West of Main Street | 56.7 | 48.1 | 49.6 | 58 |
| 2 | Woodward Ave | Main Street to Pillsbury Road | 60.0 | 51.4 | 52.8 | 61 |
| 3 | Woodward Ave | Pillsbury road to Atherton Drive | 59.7 | 51.1 | 52.6 | 61 |
| 4 | Woodward Ave | Atherton Drive to Moffat Blvd | 64.5 | 55.9 | 57.4 | 66 |
| 5 | Main Street | Woodward Ave to Future Raymus | 64.8 | 53.8 | 55.6 | 66 |
| 6 | Main Street | Woodward Ave to Atherton Dr | 61.2 | 50.1 | 52.0 | 62 |
| 7 | Main Street | Atherton Drive to SR 120 | 66.1 | 55.1 | 56.9 | 67 |
| 8 | Main Street | SR 120 to Mission Ridge Dr | 65.8 | 54.8 | 56.6 | 67 |
| 9 | Main Street | North of Mission Ridge Dr | 59.5 | 48.5 | 50.3 | 60 |
| 10 | Manteca Road | South of Future Raymus Ex | 51.9 | 40.9 | 42.7 | 53 |
| 11 | Pillsbury Road | Woodward Ave to Heartland Dr | 55.7 | 45.5 | 47.7 | 57 |
| 12 | Pillsbury Road | Heartland Drive to Tannehill Dr | 53.4 | 43.2 | 45.4 | 54 |
| 13 | Pillsbury Road | Tannehill Drive to Future Raymus | 52.9 | 42.6 | 44.8 | 54 |
| 14 | Atherton Road | North of Woodward Ave | 49.3 | 39.1 | 41.3 | 50 |
| 15 | Atherton Road | Woodward Ave to North Project Site | 56.1 | 45.9 | 48.0 | 57 |
| 16 | Atherton Road | North Project Site to Future Raymus | 52.6 | 42.4 | 44.6 | 54 |
| 17 | Atherton Road | South of Future Raymus Ex | 49.8 | 39.6 | 41.8 | 51 |
| 18 | Moffatt Blvd | North of Woodward Ave | 63.2 | 54.6 | 59.1 | 65 |
| 19 | Moffatt Blvd | South of Woodward Ave | 66.7 | 58.1 | 62.6 | 69 |
| 20 | Pillsbury Road | South of Raymus Expressway | 50.7 | 40.4 | 42.6 | 52 |
| 21 | Raymus Expressway | Manteca Rd to Project Dwy West | 63.6 | 51.9 | 56.4 | 65 |
| 22 | Raymus Expressway | Project Dwy West to Pillsbury Rd | 58.9 | 47.2 | 51.7 | 60 |
| 23 | Raymus Expressway | Pillsbury Rd to Atherton Rd | 58.7 | 47.1 | 51.6 | 60 |
| 24 | Raymus Expressway | Atherton Rd to Austin Rd | 59.0 | 47.3 | 51.8 | 60 |



**Appendix C**

## FHWA-RD-77-108 Highway Traffic Noise Prediction Model
## Noise Contour Output

Project #: 2020-124
Description: Hat Ranch Cumulative + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

| | | | -------- Distances to Traffic Noise Contours -------- | | | | |
|---|---|---|---|---|---|---|---|
| Segment | Roadway Name | Segment | 75 | 70 | 65 | 60 | 55 |
| 1 | Woodward Ave | West of Main Street | 5 | 12 | 25 | 55 | 118 |
| 2 | Woodward Ave | Main Street to Pillsbury Road | 9 | 19 | 42 | 90 | 195 |
| 3 | Woodward Ave | Pillsbury road to Atherton Drive | 9 | 19 | 40 | 87 | 186 |
| 4 | Woodward Ave | Atherton Drive to Moffat Blvd | 18 | 39 | 84 | 180 | 389 |
| 5 | Main Street | Woodward Ave to Future Raymus | 18 | 38 | 82 | 177 | 381 |
| 6 | Main Street | Woodward Ave to Atherton Dr | 10 | 22 | 47 | 101 | 218 |
| 7 | Main Street | Atherton Drive to SR 120 | 22 | 47 | 100 | 216 | 466 |
| 8 | Main Street | SR 120 to Mission Ridge Dr | 21 | 45 | 96 | 208 | 447 |
| 9 | Main Street | North of Mission Ridge Dr | 8 | 17 | 37 | 79 | 170 |
| 10 | Manteca Road | South of Future Raymus Ex | 2 | 5 | 11 | 24 | 53 |
| 11 | Pillsbury Road | Woodward Ave to Heartland Dr | 5 | 10 | 21 | 45 | 98 |
| 12 | Pillsbury Road | Heartland Drive to Tannehill Dr | 3 | 7 | 15 | 32 | 68 |
| 13 | Pillsbury Road | Tannehill Drive to Future Raymus | 3 | 6 | 14 | 29 | 63 |
| 14 | Atherton Road | North of Woodward Ave | 2 | 4 | 8 | 17 | 37 |
| 15 | Atherton Road | Woodward Ave to North Project Site | 5 | 10 | 22 | 48 | 103 |
| 16 | Atherton Road | North Project Site to Future Raymus | 3 | 6 | 13 | 28 | 61 |
| 17 | Atherton Road | South of Future Raymus Ex | 2 | 4 | 8 | 18 | 39 |
| 18 | Moffatt Blvd | North of Woodward Ave | 16 | 35 | 76 | 163 | 351 |
| 19 | Moffatt Blvd | South of Woodward Ave | 28 | 60 | 129 | 279 | 601 |
| 20 | Pillsbury Road | South of Raymus Expressway | 2 | 4 | 10 | 21 | 45 |
| 21 | Raymus Expressway | Manteca Rd to Project Dwy West | 15 | 33 | 70 | 152 | 326 |
| 22 | Raymus Expressway | Project Dwy West to Pillsbury Rd | 7 | 16 | 34 | 73 | 158 |
| 23 | Raymus Expressway | Pillsbury Rd to Atherton Rd | 7 | 16 | 33 | 72 | 155 |
| 24 | Raymus Expressway | Atherton Rd to Austin Rd | 7 | 16 | 35 | 75 | 161 |

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# Appendix I

October 20, 2021

Rod Stinson
Raney Planning & Management
1501 Sports Drive
Sacramento, California 95834
rods@raneymanagement.com

**Subject: Hat Ranch Traffic Noise Review**

Dear Mr. Stinson:

Saxelby Acoustics has reviewed the traffic noise impacts for the above-referenced project. As you know, j.c. brennan & associates, Inc. (JCB) previously prepared a sound report for the project.[1] In that report, JCB analyzed traffic noise levels at the closest existing receptors located the project area roadways. Under existing plus project conditions, traffic noise levels were predicted to increase from between 1 dBA to 9 dBA. Under cumulative plus project conditions increases of 1 dBA to 5 dBA were predicted.

Saxelby Acoustics was provided with new daily traffic volumes dated September 12, 2021. We conducted a comparison of daily traffic volumes versus the volumes contained in the previous JCB study (**Appendix A).** The results of this analysis indicate that noise levels under existing plus project and cumulative plus project conditions will be 1 dBA to 9 dBA less than those predicted in the JCB study. Slight increases from 1 dBA to 3 dBA were noted. The largest 3 dBA increase is noted for Atherton Road from Woodward Avenue to the north project access. However, this would be predicted to increase noise levels from 57 dBA to no more than 60 dBA. Therefore, this would not exceed the City's 60 dBA $L_{dn}$ exterior noise standard or the City's 5-10 dBA substantial increase criteria. Therefore, the original noise analysis prepared by JCB is considered conservative and no new traffic noise impacts are predicted to occur based upon the revised traffic noise analysis provided to us.

I hope this information is helpful. Please call or email me if you have any questions.

Sincerely,

Saxelby Acoustics LLC



Luke Saxelby, INCE Bd. Cert.
Principal Consultant
Board Certified, Institute of Noise Control Engineering

[1] *Hat Ranch Environmental Noise Assessment.* j.c. brennan & associates, Inc. February 18, 2021.

**Appendix A**

**Project: Hat Ranch Traffic Noise Review**

| | | Dir | Ex ADT from JCB Study | New Ex. ADT | EPP from JCB Study | New EPP | Delta, dBA | Cumulative from JCB Study | New Cumulative | CPP from JCB Study | New CPP | Delta, dBA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Woodward Ave | West of Main Street | 1W | 4625 | 4,625 | 5075 | 5,295 | 0 | 5925 | 8,940 | 6,375 | 8,940 | **1** |
| Woodward Ave | Main Street to Pillsbury Road | 2W | 4,500 | 4,500 | 8,570 | 6,200 | -1 | 9,400 | 7,680 | 13,470 | 9,570 | -1 |
| Woodward Ave | Pillsbury road to Atherton Drive | 2E | 4,200 | 4,200 | 6,545 | 5,640 | -1 | 10,275 | 5,210 | 12,620 | 6,940 | -3 |
| Woodward Ave | Atherton Drive to Moffat Blvd | 3E | 3,475 | 3,475 | 4,490 | 5,455 | **1** | 11,000 | 2,570 | 12,015 | 3,430 | -5 |
| Main Street | Woodward Ave to Future Raymus | 1S | 6,300 | 6,300 | 7,265 | 7,520 | 0 | 16,925 | 10,630 | 17,890 | 11,250 | -2 |
| Main Street | Woodward Ave to Atherton Dr | 1N | 7,950 | 7,950 | 12,515 | 9,970 | -1 | 19,925 | 17,150 | 24,490 | 19,400 | -1 |
| Main Street | Atherton Drive to SR 120 | 5N | 7,675 | 7,675 | 12,240 | 9,695 | -1 | 19,650 | 16,880 | 24,215 | 19,130 | -1 |
| Main Street | SR 120 to Mission Ridge Dr | 7N | 15,325 | 13,475 | 15,800 | 14,795 | 0 | 22,300 | 22,410 | 22,775 | 23,370 | 0 |
| Main Street | North of Mission Ridge Dr | 8N | 11,475 | 11,475 | 11,935 | 11,695 | 0 | 16,350 | 13,410 | 16,810 | 13,440 | -1 |
| Manteca Road | South of Future Raymus Ex | 9S | 2,575 | 2,575 | 2,625 | 2,575 | 0 | 2,850 | 2,580 | 2,900 | 2,630 | 0 |
| Pillsbury Road | Woodward Ave to Heartland Dr | 2S | 1,400 | 1,400 | 4,860 | 1,650 | -5 | 6,875 | 1,400 | 10,335 | 1,650 | -8 |
| Pillsbury Road | Heartland Drive to Tannehill Dr | 17S | 450 | 450 | 3,915 | 710 | -7 | 2,600 | 520 | 6,065 | 780 | -9 |
| Pillsbury Road | Tannehill Drive to Future Raymus | 16S | 450 | 450 | 3,915 | 760 | -7 | 1,875 | 520 | 5,340 | 780 | -8 |
| Atherton Road | North of Woodward Ave | 3N | 325 | 325 | 420 | 395 | 0 | 2,275 | 330 | 2,370 | 410 | -8 |
| Atherton Road | Woodward Ave to North Project Site | 3S | 500 | 500 | 2,210 | 4,260 | **3** | 9,525 | 1,210 | 11,235 | 4,070 | -4 |
| Atherton Road | North Project Site to Future Raymus | 12S | 0 | 0 | 650 | 170 | -6 | 950 | 40 | 1,600 | 1,100 | -2 |
| Atherton Road | South of Future Raymus Ex | 11S | 0 | 0 | 90 | 10 | -10 | 750 | 0 | 840 | 0 | N/A |
| Moffatt Blvd | North of Woodward Ave | 4N | 7,450 | 7,450 | 7,640 | 7,740 | 0 | 8,875 | 8,310 | 9,065 | 8,660 | 0 |
| Moffatt Blvd | South of Woodward Ave | 4S | 10,400 | 10,400 | 11,225 | 11,450 | 0 | 19,475 | 10,400 | 20,300 | 10,900 | -3 |
| Pillsbury Road | South of Raymus Expressway | 10S | | N/A | 290 | N/A | N/A | 725 | N/A | 1,015 | N/A | N/A |
| Raymus Expressway | Manteca Rd to Project Dwy West | 9E | | 0 | 0 | 1,620 | N/A | 9,675 | 2,200 | 9,675 | 4,740 | -3 |
| Raymus Expressway | Project Dwy West to Pillsbury Rd | 10W | | 0 | 1,065 | 1,310 | **1** | 2,200 | 2,200 | 3,265 | 3,540 | 0 |
| Raymus Expressway | Pillsbury Rd to Atherton Rd | 10E | | 0 | 480 | 1,070 | **3** | 2,700 | 2,260 | 3,180 | 3,420 | 0 |
| Raymus Expressway | Atherton Rd to Austin Rd | 11E | | 0 | 640 | 1,070 | **2** | 2,725 | 2,240 | 3,365 | 3,240 | 0 |

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# APPENDIX J

PUBLIC REVIEW DRAFT | NOVEMBER 2021

DRAFT

# Hat Ranch
# Water Supply Assessment

**PREPARED FOR**

City of Manteca

**PREPARED BY**

WEST YOST
Water. Engineered.

# Hat Ranch
# Water Supply Assessment

**Prepared for**

## City of Manteca

**Project No. 855-60-18-01**

DRAFT

| | |
|---|---|
| Project Manager: Jim Connell, PE | Date |
| QA/QC Review: Elizabeth T. Drayer, PE | Date |

WEST YOST
Water. Engineered.

PUBLIC REVIEW DRAFT | NOVEMBER 2021

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Appendix B. Hat Ranch Water Supply Assessment – Proposed Water System Reference Analysis


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## LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AFY | Acre-feet Per Year |
| AMI | Metering Infrastructure |
| CASGEM | California Statewide Groundwater Elevation Monitoring |
| CEQA | California Environmental Quality ACT |
| CIMIS | California Irrigation Management Information Service |
| City | City of Manteca |
| CMU | Commercial Mixed Use |
| DU | Dwelling Units |
| DWR | Department of Water Resources |
| EIR | Environmental Impact Report |
| ESJ | Eastern San Joaquin |
| ESJGB-GMP | Eastern San Joaquin Groundwater Basin Management Plan |
| ETo | Evapotranspiration |
| GPCD | Gallons Per Capital Per Day |
| GPD | Gallons Per Day |
| GSA | Groundwater Sustainability Agency |
| GSP | Groundwater Sustainability Plan |
| LDR | Low Density Residential |
| MDR | Medium Density Residential |
| MUSD | Manteca Unified School District |
| NOAA | National Oceanic and Atmospheric Administration |
| P | Park |
| P/QP | Public/Quasi-Public |
| Proposed Project | Hat Ranch Development Project |
| SB | Senate Bill |
| SCWSP | South County Water Supply Program |
| SGMA | Sustainable Groundwater Management Act |
| SOI | Sphere of Influence |
| SSJID | South San Joaquin Irrigation District |
| UAFW | Unaccounted-For-Water |
| UR-LDR | Urban Reserve Low Density Residential |
| UWMP | Urban Water Management Plan |
| WSA | Water Supply Assessment |
| WTP | Nick C. DeGroot Water Treatment Plant |

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# EXECUTIVE SUMMARY

The proposed Hat Ranch development project (Proposed Project), if approved, would be constructed within the General Plan boundary of the City of Manteca (City). The purpose of this Water Supply Assessment (WSA) is to perform the evaluation required by Water Code sections 10910 through 10915 in connection with the Proposed Project. This WSA is not intended to reserve water, or to function as a "will serve" letter or any other form of commitment to supply water (see Water Code section 10914). The provision of water service will continue to be undertaken in a manner consistent with applicable City policies and procedures, consistent with existing law.

This WSA includes discussion of the projected water demands of the Proposed Project (Section 2), determinations required under applicable regulations (Section 3), the City's water service area (Section 4), the City's projected water demands through the year 2045 (Section 5), and the City's projected water supply sources and reliability through the year 2045 (Section 6). This WSA also documents the plan to ensure that sufficient water supplies will be available to serve the Proposed Project and the other planned development in the City's water service area through the planning period (Section 7). Finally, the water supply assessment approval process (Section 8) is discussed.

The projected potable water demand and supplies documented in this WSA are based on several available documents, including the City's 2015 Urban Water Management Plan (2015 UWMP), the Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan (2019), the South San Joaquin Irrigation District 2020 UWMP (2020), and the draft City of Manteca General Plan Update (2021). Water Code section 10910(c)(4) states that:

> *"…the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses."*

Based on the technical analyses described in this WSA, the total projected water supplies documented to be available for the Proposed Project during Normal, Single Dry and Multiple Dry water years during a 20-year projection are sufficient to meet the projected water demands associated with the Proposed Project, in addition to existing and planned future uses. Documentation of the availability of this water to be allocated to the Proposed Project is provided in this WSA. This analysis has determined that the City's total projected water supplies will meet the above requirement from Water Code section 10910(c)(4), as documented in this WSA.

The following are four major work products that resulted from this effort:

- The projected water demand at buildout of the Proposed Project is approximately 491 acre-feet per year (AFY).
- If recycled water supplies become available to serve the Proposed Project in the future, approximately 16.2 acres of parks and 4.5 acres of street landscape within the Proposed Project site could be irrigated with recycled water. In this case, the recycled water demand would be approximately 88 AFY (83 AFY plus 6 percent unaccounted for water (UAFW)) and the potable water demand could be reduced to approximately 435 AFY.

- Water demand within the City's service area is not expected to exceed the City's supplies in any normal year between 2020 and 2045.
- During Single Dry Years, and Multiple Dry Years, the City's total annual water demand is not expected to exceed the City's water supplies from 2020 to 2045.

SB 221 applies to residential subdivisions of over 500 dwelling units (DU) and requires that the water supplier provide a written verification that the water supply for the project is sufficient, prior to issuance of the final permits. Because the Proposed Project includes 739 residential DUs, it is subject to the requirements of SB 221 (Government Code section 66473.7) and a verification of sufficient water supply (SB 221) report will be required prior to final approvals.

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# 1.0 INTRODUCTION

The Proposed Project, if approved, would be constructed in the southeast portion of the City of Manteca General Plan boundary. The purpose of this WSA is to perform the evaluation required by Water Code sections 10910 through 10915 in connection with the Proposed Project. Key topics covered in this introduction include:

- Legal Requirements for the WSA
- Need for and Purpose of WSA
- Water Supply Assessment Preparation, Format and Organization

## 1.1 Legal Requirements for the Water Supply Assessment

California Senate Bill 610 (SB 610) and Senate Bill 221 (SB 221) amended state law, effective January 1, 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 and SB 221 were companion measures that sought to promote more collaborative planning between local water suppliers and cities and counties. Both statutes require that detailed information regarding water availability be provided to the city and county decision-makers prior to approval of large development projects. The purpose of providing such information is to ensure that prudent water supply planning has been conducted, and that planned water supplies are adequate to meet existing demands, anticipated demands from approved projects, and the demands of proposed projects.

SB 610 amended California Water Code sections 10910 through 10915 to require agencies responsible for land use decisions:

- To identify the public water purveyor(s) that may supply water for a proposed development project; and
- To request a WSA from the identified water purveyor(s).

The City is the identified water purveyor for the Proposed Project. The purpose of the WSA is to demonstrate the sufficiency of the purveyor's water supplies to satisfy the water demands of the Proposed Project, while still meeting the water purveyor's obligations with regard to existing and planned future uses. Water Code sections 10910 through 10915 delineate the specific information that must be included in the WSA.

SB 221 amended State law (California Government Code section 66473.7) to require that approval by a city or county of certain residential subdivisions[1] requires an affirmative written verification of sufficient water supply. SB 221 was intended as a fail-safe mechanism to ensure that collaboration on finding the needed water supplies to serve a new large residential subdivision occurs before construction begins.

[1] Per Government Code Section 66473.7(a)(1) subdivision means a proposed residential development of more than 500 dwelling units.

## 1.2 Need for and Purpose of Water Supply Assessment

The purpose of this WSA is to perform the evaluation required by Water Code Sections 10910 through 10915 (SB 610) in connection with the Proposed Project. This WSA is not intended to reserve water, or to function as a "will serve" letter or any other form of commitment to supply water (see Water Code section 10914), nor is it intended to meet the requirements of SB 221. The provision of water service will continue to be undertaken in a manner consistent with applicable City policies and procedures, consistent with existing law.

## 1.3 Water Supply Assessment Preparation, Format and Organization

The format of this WSA is intended to clearly delineate compliance with the specific requirements for a WSA, per Water Code sections 10910 through 10915. This WSA includes the following sections:

- Section 1: Introduction
- Section 2: Description of Proposed Project
- Section 3: Required SB 610 Determinations
- Section 4: City of Manteca Water Service Area
- Section 5: City of Manteca Water Demands
- Section 6: City of Manteca Water Supplies
- Section 7: Determination of Water Supply Sufficiency Based on the Requirements of SB 610
- Section 8: Water Supply Assessment Approval Process
- Section 9: References

Relevant citations of Water Code sections 10910 through 10915 are included throughout this WSA to demonstrate compliance with the specific requirements of SB 610.

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# 2.0 DESCRIPTION OF PROPOSED PROJECT

A general description of the Proposed Project location, proposed land uses, projected water demand, and proposed water supply is provided below.

## 2.1 Proposed Project Location

The Proposed Project is located in the southeast portion of the Manteca General Plan boundary and encompasses approximately 189 acres. The Proposed Project area is located northwest of the intersection of Sedan Avenue/Future Atone Raymus Expressway and Atherton Road[2]. The Proposed Project area, located on the east side of the City, is within the City's Sphere of Influence (10-Year Planning Horizon[3]), General Plan area, and Primary Urban Service Area, but outside of the City Limit. The parcels will be annexed into the City as part of the development process. The location of the Proposed Project in relation to the current City limits and Manteca General Plan boundary is shown on Figure 2-1.

Currently, the majority of the Proposed Project area consists of a mansion and agricultural land.

The land uses immediately adjacent to the east and south of the Proposed Project site include agricultural and residential uses, such as ranchettes. Other existing uses west of the northerly portion of the Proposed Project site include a single-family residential subdivision. Future residential subdivisions are expected to be constructed west and north of the Proposed Project site.

## 2.2 Proposed Land Uses

The Proposed Project is primarily a residential development anticipated to include up to 739 low density residential (LDR) and medium density residential (MDR) units. The housing densities were provided to West Yost by MacKay & Somps Civil Engineers, Inc. All of the densities were classified as LDR or MDR, based on the Manteca 2023 General Plan, because the density values fell within the range of 2.1 to 8 dwelling units per acre (du/acre) and 8.1 to 15 du/acre, respectively. Additionally, the Proposed Project includes approximately 20 acres for a school site that is classified as Public/Quasi-Public for this WSA. The Proposed Project also would include approximately 16.2 acres of parks and 4.5 acres for street landscape.

Land uses for the Proposed Project are summarized in Table 2-1, and the location of these land uses is shown on Figure 2-2.

[2] "Draft South of Woodward Area - South – Hat Ranch Water Supply Assessment and Water Supply Verification" City of Manteca, prepared by Kennedy/Jenks Consultants, 2014.

[3] "Amendment to the Sphere of Influence" City of Manteca, prepared by the Community Development Department, 2017.

| Table 2-1. Proposed Land Uses for the Proposed Project[a] | | | |
|---|---|---|---|
| Proposed Land Use | Approximate Area, acres | Average DUs per Acre | Number of DUs |
| East Side Low Density Residential | 62.6 | 5.6 | 346 |
| West Side Low Density Residential | 63.5 | 4.9 | 281 |
| East Side Medium Density Residential | 8.3 | 7.7 | 64 |
| West Side Medium Density Residential | 5.8 | 8.3 | 48 |
| Street Landscape | 11.5 | - | - |
| Parks (P) | 16.2 | - | - |
| Public/Quasi-Public[b] | 16.4 | - | - |
| **Total** | **184.3** | **-** | **739** |

(a) Land use data provided by Richland Planned Communities, on April 11, 2019.
(b) School was assumed to be Public/Quasi-Public.

The Manteca General Plan 2023 designates the Proposed Project site as Urban Reserve Low Density Residential (UR-LDR), Commercial Mixed Use (CMU), and Park (P). The draft General Plan[4] has the same land use designations, except that the UR-LDR land use type has been changed to LDR and Medium Density Residential (MDR) has been added. The Draft General Plan Update currently being prepared by the City shows the same land use designation for this area when compared to the existing General Plan.

The Proposed Project would likely require a General Plan Amendment to the Land Use Element to change land uses on the Proposed Project site. Changes to the Land Use Element would include changing the CMU land use to a school (Public/Quasi-Public).

## 2.3 Adjusted City Water Demand Factors

Unit water use factors for projecting water demand based on the proposed future land uses within the City's General Plan were developed as part of the City of Manteca 2005 Water Master Plan. These unit water use factors assume a per capita water use of approximately 225 gallons per capita per day (GPCD) and do not account for conservation goals, water recycling and other possible conservation derived sources. In the City's 2015 Urban Water Management Plan (UWMP), water demand projections assume that the City is able to meet its SBX7-7 (Water Conservation Act of 2009) 2020 per capita water use target of 179 GPCD. Therefore, to reflect the City's 2020 conservation goals, the water use factors for Low Density Residential (LDR), Medium Density Residential (MDR), and Public/Quasi-Public were reduced by 20 percent, corresponding to the overall reduction from 225 to 179 GPCD. The water use factors for Parks were reduced by 10 percent to correspond with the climate data discussed in Section 4 of this WSA.

The unit water use-factors for the land use designations applicable to the Proposed Project are summarized in Table 2-2.

[4] "Alternatives Maps" City of Manteca General Plan Update, https://manteca.generalplan.org/content/documents, accessed on 11/20/2018.

**Table 2-2. Water Use Factors by Land Use Type**

| Land Use Designation | Water Use Factor, Gallons Per Day (gpd)/acre | |
|---|---|---|
| | 2005 Water Master Plan[a] | Adjusted for SBX7-7[b] |
| Low Density Residential | 2,800 | 2,240 |
| Medium Density Residential | 4,050 | 3,240 |
| Parks | 4,000 | 3,600 |
| Public/Quasi-Public | 2,000 | 1,600 |

(a) Based on unit water demand factors established in the City of Manteca 2005 Water Master Plan. These factors assume a per capita water use of approximately 225 GPCD and do not account for conservation measures.

(b) Based on a 20 percent reduction of factors shown in the City of Manteca 2005 Water Master Plan. These factors assume that the City is able to meet its 2020 per capita water use target of 179 GPCD.

Potable water losses documented in the City's 2015 UWMP were calculated using a historical loss estimate of 12 percent of potable demands. It is anticipated that the implementation of advanced metering infrastructure (AMI) by 2018 will reduce losses to 8 percent by 2020, 7 percent by 2025, 6 percent by 2030, and 5 percent thereafter. Because the Proposed Project is anticipated to have AMI, this WSA assumes that unaccounted-for-water (UAFW) will be 6 percent of the Proposed Project's potable demands.

## 2.4 Projected Buildout Water Demand of Proposed Project

Based on the water use factors shown in Table 2-2 and a UAFW of 6 percent, the projected water demand at buildout of the Proposed Project is approximately 491 AFY, as shown in Table 2-3.

The Proposed Project does not intend to use recycled water at this time. The City currently uses undisinfected secondary effluent to irrigate fodder crops in the land adjacent to the City's wastewater treatment plant. Tertiary treated recycled water is used for dust control at construction sites and for irrigation at the Great Wolf Lodge. Although a Recycled Water Master Plan is being prepared with the intent that the City would use recycled water to offset potable water demands for outdoor uses in the future, recycled water infrastructure is not planned to be constructed in time to serve the buildout of the Proposed Project. Therefore, recycled water supplies are not assumed for use at the Proposed Project in this WSA.

However, if recycled water supplies become available to serve the Proposed Project in the future, approximately 16.2 acres of parks and 4.5 acres of street landscape within the Proposed Project site could be irrigated with recycled water. In this case, the recycled water demand would be approximately 88 AFY (83 AFY plus 6 percent UAFW) and the potable water demand could be reduced to approximately 435 AFY. Note that park irrigation will be from a groundwater well and not from the City's potable water distribution system. This groundwater use is part of the City's overall water use budget and is part of this WSA.

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**Table 2-3. Projected Water Demand for Buildout of the Proposed Project**

| Land Use Designation | Gross Area, acres | DUs | Water Use Factor | | Potable Water Demand, AFY |
|---|---|---|---|---|---|
| East Side Low Density Residential | 62.6 | 346 | 400[a] | gpd/du | 155 |
| West Side Low Density Residential | 63.5 | 281 | 457[b] | gpd/du | 144 |
| East Side Medium Density Residential | 8.3 | 64 | 421[c] | gpd/du | 30 |
| West Side Medium Density Residential | 5.8 | 48 | 390[d] | gpd/du | 21 |
| Street Landscape[e] | 4.5 | - | 3,600 | gpd/acre | 18 |
| Parks | 16.2 | - | 3,600 | gpd/acre | 65 |
| Public/Quasi-Public | 16.4 | - | 1,600 | gpd/acre | 29 |
| **Subtotal** | **177.3** | **739** | **-** | **-** | **463** |
| UAFW[f] | - | - | - | - | 28 |
| **Total Demand** | - | **-** | **-** | **-** | **491** |

(a) Based on LDR water use factor of 2,240 gpd/acre and an average density of 5.1 du/acre.
(b) Based on LDR water use factor of 2,240 gpd/acre and an average density of 4.2 du/acre.
(c) Based on MDR water use factor of 3,240 gpd/acre and an average density of 7.7 du/acre.
(d) Based on MDR water use factor of 3,240 gpd/acre and an average density of 8.3 du/acre.
(e) Based Street Landscape assumed to use the same water factor as Parks
(f) Based on 6 percent of project water demands.

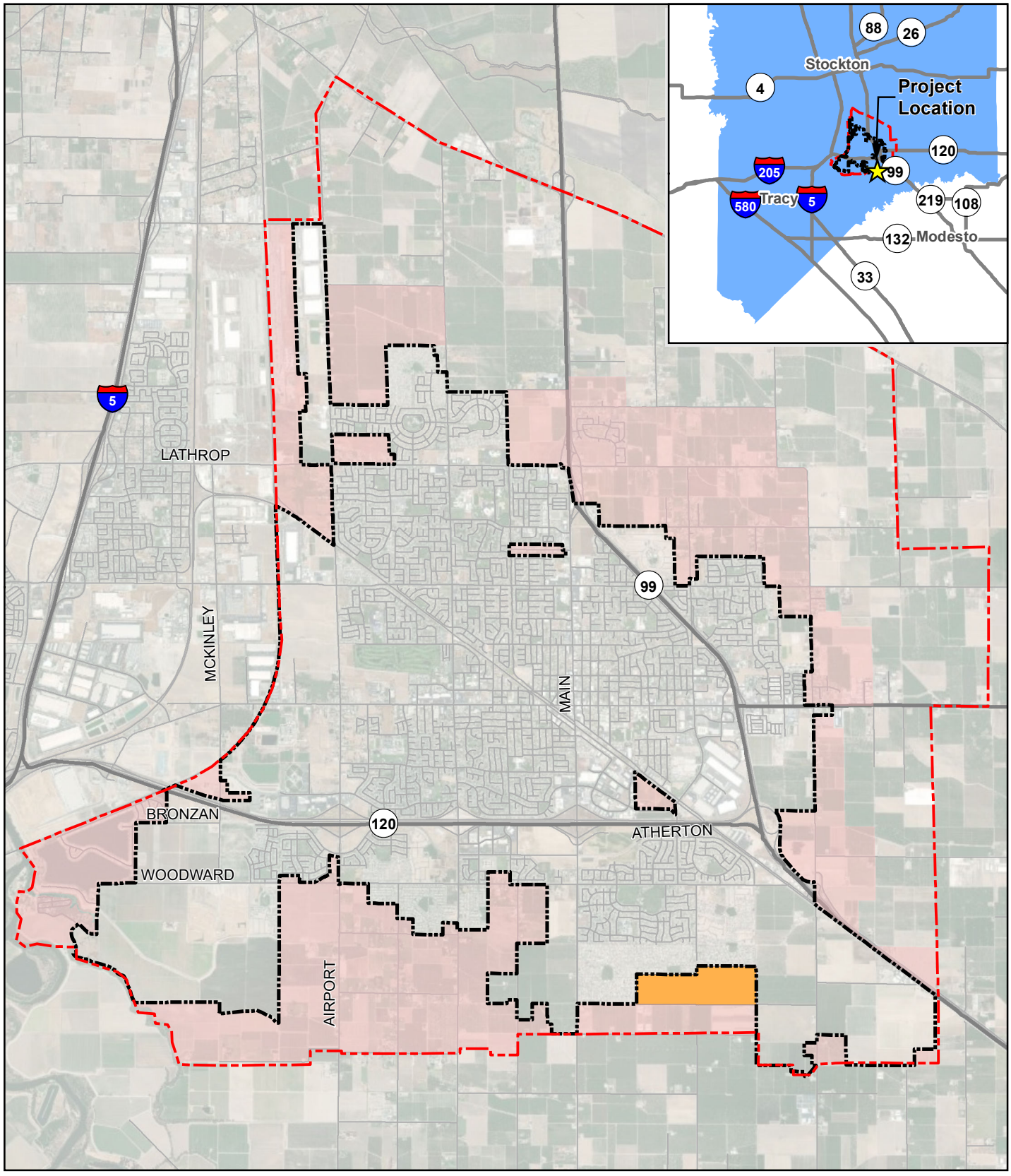
## 2.5 Projected Water Supply for Proposed Project

Water demands for the Proposed Project will be served using the City's existing and future portfolio of water supplies. The inclusion of existing and planned future supplies is specifically allowed by the Water Code:

> *Water Code section 10631(b): Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).*

Proponents of the Proposed Project will provide their proportionate share of required funding to the City for the acquisition and delivery of treated potable water supplies to the Proposed Project area. Figure 2-1 shows the Proposed Project Vicinity and Figure 2-2 shows the proposed land use.

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**Symbology**

- Proposed Project
- City Limit
- Sphere of Influence
- General Plan Boundary
- San Joaquin County

N

0 3,000 6,000

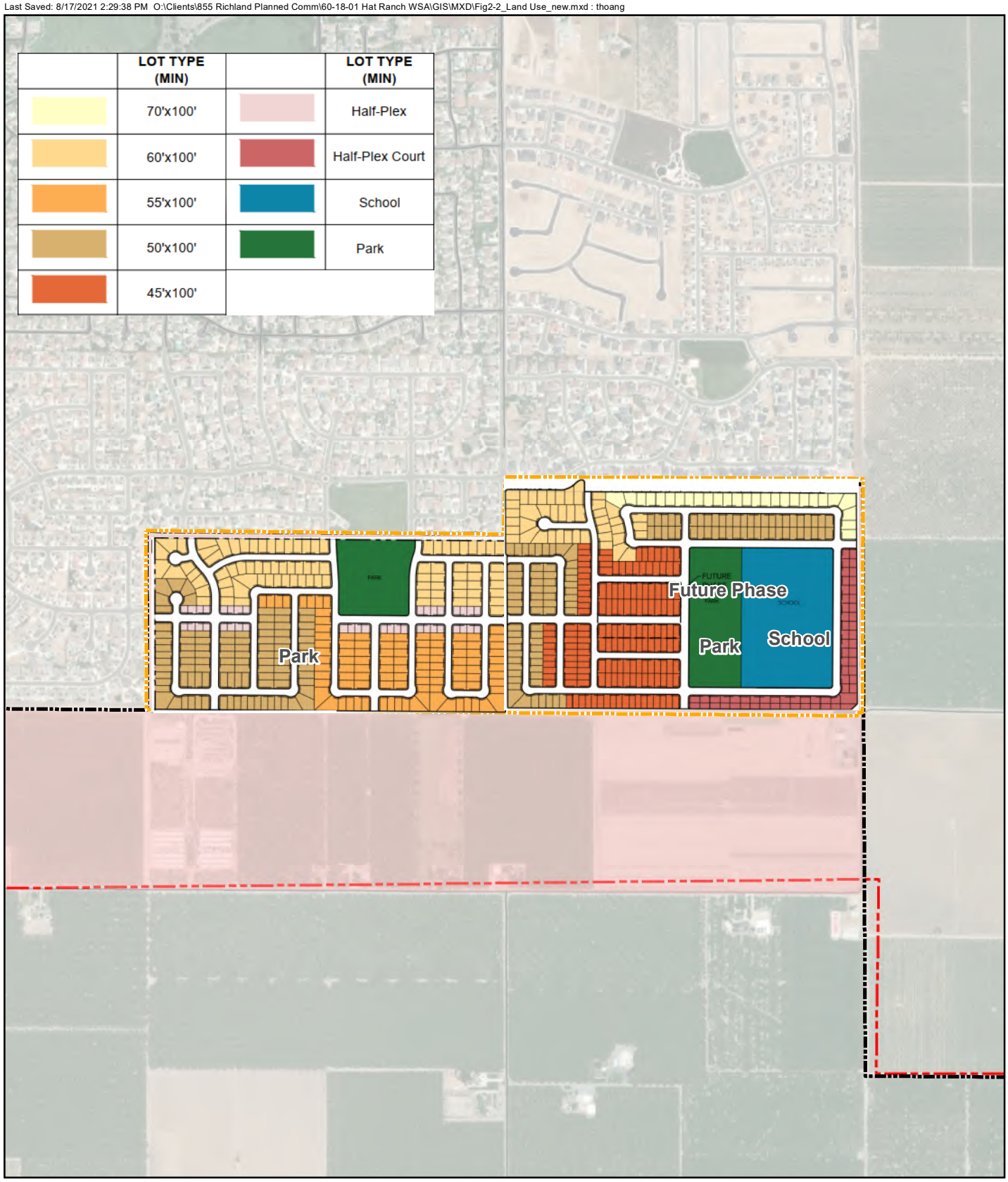
Scale in Feet

WEST YOST

# DRAFT Figure 2-1

## Proposed Project Vicinity

City of Manteca
Water Supply Assessment
for Hat Ranch




**Symbology**

- Proposed Project
- City Limit
- Sphere of Influence
- General Plan Boundary

N

0 500 1,000

Scale in Feet

WEST YOST

# DRAFT Figure 2-2

## Conceptual Land Use Plan

City of Manteca
Water Supply Assessment
for Hat Ranch

# 3.0 REQUIRED SB 610 DETERMINATIONS

The following determinations must be made, pursuant to SB 610.

## 3.1 Does SB 610 Apply to the Proposed Project?

Water Code sections 10910 and 10912 state:

> *10910 (a) Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part.*
>
> *10912 (a) "Project" means any of the following:*
>
> *(1) A proposed residential development of more than 500 dwelling units.*
>
> *(2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.*
>
> *(3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.*
>
> *(4) A proposed hotel or motel, or both, having more than 500 rooms.*
>
> *(5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.*
>
> *(6) A mixed-use project that includes one or more of the projects specified in this subdivision.*
>
> *(7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling unit project.*

Based on the following assumptions, SB 610 does apply to the Proposed Project.

- The Proposed Project is subject to California Environmental Quality Act (CEQA) and an Environmental Impact Report (EIR) is required.
- The Proposed Project, with its proposed 739 residential DUs, and other non-residential land uses, meets the definition of a "Project" as specified in Water Code section 10912(a) paragraph (1) as defined for residential development (see above).

The Proposed Project has not been the subject of a previously adopted WSA and has not been included in an adopted WSA for a larger project. Therefore, according to Water Code section 10910(a), a WSA is required for the Proposed Project. The Proposed Project is included in the General Plan Water Supply Report.

## 3.2 Does SB 221 Apply to the Proposed Project?

In 2001, SB 221 amended State law to require that approval by a city or county of certain residential subdivisions requires an affirmative written verification of sufficient water supply. Per California Government Code section 66473.7(a)(1), a subdivision means a proposed residential development of more than 500 DUs. The Proposed Project, with its proposed 739 residential DUs, is therefore subject to the requirements of SB 221. A verification of sufficient water supply (SB 221) report will be required prior to final approvals.

## 3.3 Who is the Identified Public Water System?

Water Code sections 10910 and 10912 states:

> *10910(b) The city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources Code, shall identify any water system that is, or may become as a result of supplying water to the project identified pursuant to this subdivision, a public water system, as defined by Section 10912, that may supply water for the project.*
>
> *10912 (c) "Public water system" means a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections…*

The Proposed Project area is within the City's Sphere of Influence (SOI). Therefore, the City is the identified public water system for the Proposed Project.

## 3.4 Does the City have an adopted UWMP and does the UWMP include the projected water demand for the Proposed Project?

Water Code section 10910 states:

> *10910(c)(1) The city or county, at the time it makes the determination required under Section 21080.1 of the Public Resources Code, shall request each public water system identified pursuant to subdivision (b) to determine whether the projected water demand associated with a proposed project was included as part of the most recently adopted urban water management plan adopted pursuant to Part 2.6 (commencing with Section 10610).*

The City's 2015 UWMP is incorporated by reference into this WSA. The City's existing potable and raw water demand is 16,253 AFY[5], which may be greater than normal due to stay-at-home orders and mandated closure of non-essential businesses in response to the pandemic. West Yost estimated the City's projected water demand for the future land use areas of the General Plan Update.

According to the General Plan Update, the Proposed Project is located within the City's SOI. The Proposed Project is included in the General Plan Water Supply Report demand projections.

The City's ability to meet the projected water demands for the Proposed Project is described in Section 7.0 of this WSA.

[5] Provided by City. July 2021.

# 4.0 CITY OF MANTECA WATER SERVICE AREA

This section presents the City's water service area including history and growth information for the City.

## 4.1 City of Manteca Water Service Area

The City is located in the flat plain at the northern end of California's San Joaquin Valley in south San Joaquin County. The City is located approximately 10 miles south of Stockton and 15 miles north of Modesto. Rich agricultural lands abut Manteca on the north, east, and south, while areas to the west are used primarily for industry. The Southern Pacific Railroad cuts the City diagonally from southeast to northwest. State Highway 120 crosses the southern portion of the City and provides a connection between Interstate 5, located about four miles to the west of the City, and Highway 99 along the eastern boundary of the City. This location creates a good setting for Bay Area commuter housing, as well as new commercial and industrial locations.

The City's 2015 UWMP planning area corresponds with the City SOI established in the City's 2023 General Plan. The 2023 General Plan includes a designation of area planned to be developed by 2023. The City's current water distribution service area coincides with the City limits. It is assumed that the City's water distribution system will extend to areas within the SOI beyond the existing City limits as those areas are approved for development and annexed into the City.

Presently, the City limits encompass an area of about 13,746 acres. The total existing developed land is made up of approximately 64 percent residential land uses, 18 percent commercial, industrial, and institutional land uses, and 18 percent agriculture, parks, landscape, and other land uses. Water demands not served by the City (e.g., agriculture, schools) rely on private groundwater wells and the South San Joaquin Irrigation District (SSJID) groundwater for their supply.

## 4.2 Current and Projected Population

Between 1980 and 2020 the City experienced an average annual population growth rate of 3.1 percent, from 24,925 persons in 1980 to 84,800 persons in 2020. During this period, peak population growth occurred between 1980 and 1990 with an average growth rate of over 5 percent. Recent population growth since 2010 has averaged about 2.4 percent per year.

By comparison, the City's boundary area has grown from about 6,300 acres in 1990 to about 13,400 acres in 2015, an annual average area growth rate of about 3.1 percent. The greatest growth in area occurred between 1990 and 2000. Since 2000, the City's area has grown about 1.8 percent per year.

For purposes of this WSA, the City elected to use the 1980-2020 average annual population growth rate of 3.1 percent to project the population of the water service area through 2045. It is assumed that this population growth includes population acquired through City annexations of the surrounding area, as well as City infill development. The current and projected water service area populations for the City are summarized in Table 4-1. According to California Department of Finance, the City's population in 2020 was 84,800[6].

[6] California Department of Finance. Cities, Counties, and the State Population Estimates with Annual Percent Change. January 2021

| Table 4-1. Historical and Projected Population for City of Manteca Water Service Area | |
|---|---|
| Calendar Year | Estimated Population[b] |
| 2020[a] | 84,800 |
| 2025 | 98,833 |
| 2030 | 115,187 |
| 2035 | 134,248 |
| 2040 | 156,463 |
| 2045 | 182,354 |

(a) According to California Department of Finance, the City's 2020 population is estimated at 84,800.
(b) Population projected at the 1980-2020 average growth rate of 3.1%.

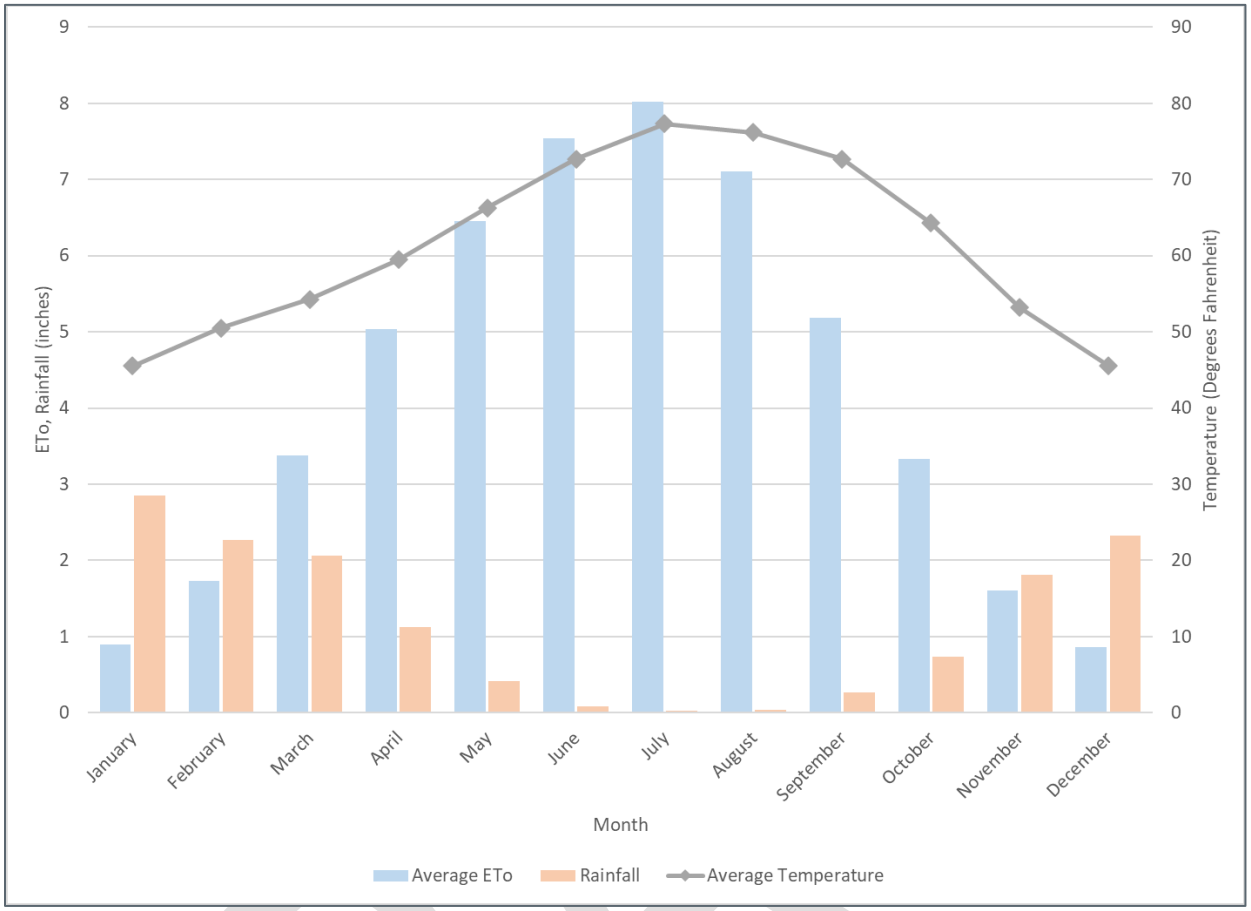
## 4.3 Climate

Climate and precipitation information are described in the City's 2015 UWMP. The City experiences hot summer temperatures with many days over 100°F during July and August. Nighttime temperatures during July and August drop into the fifties. The winter temperatures are much colder, with daytime highs in the forties and fifties. Winter lows are in the thirties and forties. Overnight freezes are infrequent. Spring and fall provide moderate temperature ranges. The mean annual precipitation is 14 inches.

Monthly climate data is provided in Figure 4-1. The evapotranspiration (ETo) data Figure 4-1 was obtained from the California Irrigation Management Information Service (CIMIS) for Station 70-Manteca in the San Joaquin Region. Rainfall and temperature data was obtained by City staff from the National Oceanic and Atmospheric Administration (NOAA) website.

As indicated by the data in Figure 4-1, a greater quantity of water is evaporated during May through August in correlation to high temperatures and low humidity, which results in high water demand for landscape irrigation.

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*Source: California Department of Water Resources, California Irrigation Management Information System, Station 70, November 1987 – 2015. Rainfall and temperature data were obtained by City staff from the NOAA website.*

**Figure 4-1. City of Manteca Average Monthly Climate Data**

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# 5.0 CITY OF MANTECA WATER DEMANDS

Water Code section 10910 states:

> *10910(c)(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g).*

As indicated in Section 3, the water demand for the Proposed Project was included in the City of Manteca General Plan Update Water Supply Report, attached as Appendix A The Water Supply Report has been updated to reflect the current (September 2021) understanding of the City's General Plan Update. The General Plan Update land use is being updated and a revised version of the Water Supply Report will be provided in the coming months as that land use data are evaluated.

The following topics are covered in this section:

- Existing and Projected Water Demand
- Dry Year Water Demand

## 5.1 Existing and Projected Water Demand

City potable and raw water demand in 2020 was approximately 16,253 AF, which may have been caused by a higher daytime population than normal due to stay-at-home orders and mandated closure of non-essential businesses in response to the COVID-19 pandemic.

The projected water demand for future land use area for the buildout of the General Plan areas, which includes the Proposed Project in the City's General Plan Update, was calculated by multiplying the projected land uses by the unit water demand factor. The resulting water demand projection was 17,971 AFY.

Therefore, the projected potable and raw water demand at buildout of the General Plan is 34,224 AFY (16,253 AFY existing plus 17,971 AFY projected). Buildout of the General Plan planning area is projected to occur shortly before 2050.

The City's existing and projected potable and raw water demand is shown in Table 5-1. The 2020 data reflect actual 2020 demand. The projected water demands shown in Table 5-1 will be used throughout this WSA.

**Table 5-1. City of Manteca Existing and Projected Total Water Demand in Normal Years, AFY**

| | 2020, Current | 2025 | 2030 | 2035 | 2040 | 2045 |
|---|---|---|---|---|---|---|
| Total Water Demand | 16,253 | 18,480 | 21,012 | 23,891 | 27,164 | 30,885 |

*Sources: 2020 Water demand per City of Manteca, projected growth from City of Manteca General Plan Water Supply Report. September 2021.*

The City's projected water demand at buildout (based on existing water demand and buildout of the General Plan Update, and the projected water demand of the Proposed Project) is summarized in Table 5-2. The City's preliminary water demand projections for future developments with approved water supply, as of March 2021, have been updated by West Yost to be based on water use factors that were adjusted for SB X7-7 (see Table 2-2). These revised demand projections for future developments within the City are included in Appendix A of this WSA.

**Table 5-2. City of Manteca Projected Buildout Water Demand, AFY**

| | Total |
|---|---|
| Existing 2020 Water Demand | 16,253 |
| 2040 General Plan Horizon Water Demand[(a)] | 10,911 |
| 2045 Water Demand[(b)] | 3,721 |
| Buildout of General Plan[(c)] | 3,339 |
| **Total Water Demand** | **34,224** |

*Sources: 2020 Water demand per City of Manteca, projected growth from West Yost, City of Manteca General Plan Water Supply Report. September 2021.*

(a) 2040 General Plan Horizon Water Demand represents incremental increase in water demand beyond existing demand.

(b) 2045 Water Demand represents incremental increase in water demand beyond existing and 2040 General Plan demand.

(c) General Plan Buildout represents incremental increase in water demand beyond the existing, 2040 General Plan, and 2045 water demand

## 5.2 Dry Year Water Demand

The City currently has a water conservation program in place, as described in Chapter 8 of the City's 2015 UWMP. The City's Water Shortage Contingency Plan includes a five-stage plan describing water conservation measures to reduce water demand by up to 50 percent in the event of a water supply shortage or emergency. The water shortage stages, and their respective anticipated reduction in potable water demand, are shown in Table 5-3.

**Table 5-3. Water Shortage Contingency Plan Projected Demand Reduction**

| Stage | Percent Supply Reduction |
|---|---|
| I | Up to 10 percent |
| II | 11 – 20 percent |
| III | 21 – 30 percent |
| IV | 31 – 40 percent |
| V | 41 – 50 percent |

*Source: City of Manteca 2015 UWMP, Table 8-1 Stages of WSCP*

When comparing potable water supply to demand in the City's 2015 UWMP and in this WSA, the dry year water demands are assumed to not include implementation of the City's Water Shortage Contingency Plan. This is a conservative assumption as additional water conservation will likely occur as a result of the City's implementation of its Water Shortage Contingency Plan in response to dry years or other water supply shortages. Table 5-4 presents the projected future dry year potable water demand.

**Table 5-4. Projected Future Dry Year Potable and Raw Water Demand**

| Hydrologic Condition | Demand Reduction[(a)] | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 |
|---|---|---|---|---|---|---|---|
| Single Dry Year, AFY | 0 | 16,253 | 18,480 | 21,012 | 23,891 | 27,164 | 30,885 |
| Multiple Dry Year 1 | 0 | 16,253 | 18,480 | 21,012 | 23,891 | 27,164 | 30,885 |
| Multiple Dry Year 2 | 0 | 16,253 | 18,480 | 21,012 | 23,891 | 27,164 | 30,885 |
| Multiple Dry Year 3 | 0 | 16,253 | 18,480 | 21,012 | 23,891 | 27,164 | 30,885 |
| Multiple Dry Year 4 | 0 | 16,253 | 18,480 | 21,012 | 23,891 | 27,164 | 30,885 |
| Multiple Dry Year 5 | 0 | 16,253 | 18,480 | 21,012 | 23,891 | 27,164 | 30,885 |

(a) Conservatively assumes no demand reduction in dry years.

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# 6.0 CITY OF MANTECA WATER SUPPLIES

Key topics addressed in this section include:

- Regulatory Background
- City's Surface Water Supply
- City's Groundwater Supply
- City's Potable Water Supply Availability and Reliability

## 6.1 Regulatory Background

Water Code section 10910 states:

> *10910(c)(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f) and (g).*
>
> *10910(d)(1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts.*
>
> *10910(d)(2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:*
>
> *(A) Written contracts or other proof of entitlement to an identified water supply.*
>
> *(B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.*
>
> *(C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.*
>
> *(D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.*
>
> *10910(e) If no water has been received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts, the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall also include in its water supply assessment pursuant to subdivision (c), an identification of the other public water systems or water service contract-holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has identified as a source of water supply within its water supply assessments.*

It is anticipated that water supply for the Proposed Project would be local groundwater and treated surface water from SSJID's South County Water Supply Program (SCWSP).

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Proponents of the Proposed Project will provide their proportionate share of required funding to the City for the acquisition and delivery of treated potable water supplies to the Proposed Project area through connection fees and other means. This arrangement will be outlined within the Conditions of Approval between the project applicant and the City. The Conditions of Approval will be completed as part of the City's formal land use actions.

The summaries of the City's water supplies provided below have been taken, for the most part, from the City's 2015 UWMP, South San Joaquin Irrigation District 2020 UWMP (2020), and the Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan (2019).

## 6.2 Surface Water Supply

The principal component of future water supply for the City is deliveries from the SCWSP. The City, along with three other cities/retail water suppliers (Escalon, Lathrop, and Tracy), signed water supply agreements with SSJID to supply treated potable water to the participating cities.

The Nick C. DeGroot Water Treatment Plant (WTP) is commissioned for the SCWSP and is currently operated by SSJID. The WTP has a total Phase 1 capacity of 31,522 AFY and the Phase 2 capacity is anticipated to be 43,090 AFY. Phase 2 has not yet been implemented but is expected by 2040, according to the SSJID 2020 UWMP. Currently, the City is allotted 11,500 AFY under Phase 1 and 18,500 AFY under Phase 2. The term of the City's water supply agreement with SSJID is through December 2029. The City and SSJID signed a new contract to extend this contract through 2049. Historically, the City has not utilized its full allocation of surface water due to system constraints and State and SSJID supply limits in response to the drought conditions.

## 6.3 Groundwater Supply

Water Code section 10910 states:

> *10910(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment.*
>
> *10910(f)(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.*
>
> *10910(f)(2) A description of any groundwater basin or basins from which the proposed project will be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as over drafted or has projected that the basin will become over drafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long term overdraft condition.*
>
> *10910(f)(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historical use records.*

*A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historical use records.*

*10910(f)(4) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project.*

*A water assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.*

The local groundwater basin and City groundwater use are described in the City's 2015 UWMP. A summary of the groundwater basin and historical and projected groundwater pumping are provided below.

#### 6.3.1.1 Basin Description

The City's wells are located in the Eastern San Joaquin (ESJ) Subbasin, which is a subbasin of the San Joaquin Valley Groundwater Basin. The groundwater aquifers underlying the City have been identified to include four geologic formations. In increasing depth from the surface, the identified aquifers are Victor Formation, Laguna Formation, Mehrten Formation, and Valley Springs Formation. Due to the alluvial generation of these aquifers, there is significant variation in grain size, with lenses and strata of high yield gravel, permeable sandy material and lower permeability clays. In general, the strata slope from the hills east of the City downward to the west, providing good recharge from hill runoff as well as from the Stanislaus River. The City's wells primarily withdraw water from the Laguna and Victor Formations.

The basin is not adjudicated; however, a basin management plan has been created. The Eastern San Joaquin Groundwater Basin Groundwater Management Plan (ESJGB-GMP) (NSJCGB, 2004) was prepared in September 2004. According to Department of Water Resources (DWR) Bulletin 118 (DWR, 2006), the ESJ Subbasin is in a critical condition of overdraft[7]. Groundwater levels have been historically declining at an average rate of 1.7 feet per year. Groundwater overdraft in the overall basin and the City's groundwater withdrawal rate is of vital concern to the City as this poses a long-term risk to the reliability of the groundwater supply.

In 2014, the Sustainable Groundwater Management Act (SGMA) was signed into law to provide a framework for management of groundwater supplies by local agencies and restricts state intervention, if required. SGMA provides an opportunity for local agencies overlying the basin to form a Groundwater Sustainability Agency (GSA), which is the primary agency responsible for achieving sustainability. As part of the region's compliance with SGMA, the Eastern San Joaquin Groundwater Authority was formed in 2017, and includes representatives from Calaveras County Water District / Stanislaus County, California Water Service Company, Central Delta Water Agency, Central San Joaquin Water Conservation District, City of Lathrop, City of Lodi, City of Manteca, City of Stockton, Linden County Water District, Lockeford Community Services District, North San Joaquin Water Conservation District, Oakdale Irrigation District, San Joaquin County, South Delta Water Agency, South San Joaquin Groundwater Sustainability Agency, Stockton East Water District, and the Woodbridge Irrigation District GSA. This GSA adopted a Groundwater

[7] The Eastern San Joaquin County Groundwater Subbasin was confirmed to be in critical condition of overdraft in the DWR Bulletin 118 Interim Update 2016.

Sustainability Plan (GSP) in late 2019, because the Eastern San Joaquin Groundwater Subbasin has been identified as being in a state of critical overdraft and is considered a high priority. Two projects for the City that were identified in the GSP are the implementation of AMI, mentioned above, and the transfer of recycled water to agricultural uses to offset groundwater pumping.

#### 6.3.1.2 Groundwater Production

The sustainable yield of the groundwater basin was estimated in the 2019 GSP[8] to be approximately 1 acre-foot per acre per year (715,000 AFY plus or minus 10 percent over the subbasin area of 1,195 square miles, an average of 0.935 AF/acre). In 2005, the City began receiving treated surface water from SCWSP and the City has had limited groundwater pumping since the implementation of the SCWSP. Although groundwater pumping in some years prior to 2005 has exceeded that rate, as part of the SCWSP, the City intends to limit groundwater pumping to that rate or less. Projected groundwater availability is therefore based on an assumption that 1 AFY of groundwater is available per acre of City service area.

The total groundwater pumping that occurs within the City boundaries include City-owned municipal wells and City-owned park irrigation wells, in addition to irrigation and domestic wells owned and operated by others. This section provides a summary of the estimated groundwater pumping that occurs within the current City limits and planning area. According to the City's 2015 UWMP, groundwater pumping data collection is on-going and there are potentially many groundwater pumping wells that are unmetered and unidentified.

##### *6.3.1.2.1 City-Produced Groundwater*

The City currently (2021) owns and operates 17 potable water wells and 31 irrigation wells. The City's annual potable groundwater production has steadily increased historically, reaching a peak of 14,900 acre-feet (AF) in 2004. Commissioning of the surface water treatment plant in 2005 decreased groundwater use considerably and currently supplies an average of 52 percent of the City's annual potable water supply. Since 2005, the City has constructed dedicated irrigation wells at many parks in an effort to reduce potable demand, which requires wellhead treatment at many wells for arsenic and other constituents to meet drinking water standards. In 2000, the City pumped about 1.2 AFY/acre, but this has since decreased to about 0.7 AFY/acre in 2010 and to about 0.5 AFY/acre in 2015. When the City annexes new areas, the safe yield remains unchanged; however, the volume of available groundwater increases with the annexation of land into the City. However, the 1 AFY/acre does not provide sufficient water supply for most projects.

##### *6.3.1.2.2 Pumping by Others*

Because there are numerous wells not owned by the City that are drawing from the ESJ Subbasin, this pumping could affect the amount of groundwater available to the City within the groundwater basin safe yield. Wells currently in operation not owned by the City include private domestic wells, agricultural wells, wells for school irrigation owned by the Manteca Unified School District (MUSD), and irrigation wells owned by SSJID, among others. Well completion reports obtained from DWR suggest that approximately 1,000 water wells have been constructed within the General Plan area since record keeping began in the

[8] "Eastern San Joaquin County Groundwater Subbasin. Groundwater Sustainability Plan." Eastern San Joaquin Groundwater Authority, November 2019.

1960s; however, many may not have been registered as abandoned. It is anticipated that most domestic wells are no longer in use, though further investigation would be needed to verify this assumption.

It is known that MUSD and others own and operate wells within the City and its planning area. It is also assumed that pumping by MUSD and other known pumpers within the City and its planning area should be included in the groundwater safe yield accounting for purposes of this evaluation. Groundwater pumping by others may also be included in future updates of this initial estimate.

Metered pumping records for MUSD have not yet been provided. The MUSD is assumed to irrigate 25 percent of its parcels at 4 AFY/acre. According to the City's 2015 UWMP, the groundwater pumping from other ESJ entities were estimated as follows:

- Given that the MUSD has approximately 500 total acres, the total annual water use is estimated at approximately 500 AFY.
- According to SSJID pumping records for 2010 through 2015, an average of 4,860 AFY groundwater was pumped from SSJID-leased wells. Of this, an average of 2,860 AFY was pumped within the City of Manteca and the City's Planning Area. Therefore, groundwater pumping from SSJID-leased wells is projected to be 2,860 AFY.
- Other known industrial groundwater pumpers include Eckerts Cold Storage. The City treats over 130 AF of wastewater produced by Eckerts each year. Based upon this average, groundwater pumping is estimated at over 150 AFY assuming a return-to-sewer ratio of approximately 85 percent.

#### 6.3.1.3 Historical Groundwater Pumping

Historically, the City extracted groundwater at a rate as high as 1.6 AFY/acre, based on the developed City area. As discussed previously, the SCWSP allowed the City to reduce local groundwater extraction to less than the estimated basin safe yield of 1 AFY/acre.

Since 2006, after the commissioning of the SCWSP, the total groundwater pumping for the City of Manteca has ranged from 8,062 AFY to 10,374 AFY averaging about 8,700 AFY. Pumping amounts were generally consistent over the years 2011 to 2015, with a decrease in 2014 and 2015, likely attributable to statewide mandatory demand reduction regulations. With this exception, there were no limitations or challenges for obtaining groundwater during the last 5 years, and the available groundwater quantity was sufficient. Groundwater pumping by City wells from 2011 to 2015 is summarized in Table 6-1.

**Table 6-1. Historical Groundwater Production, AFY**

| | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|
| Groundwater Supply | 9,156 | 10,374 | 9,922 | 6,546 | 7,249 |

*Source: City of Manteca 2015 UWMP, Table 6-2 Groundwater Volume Pumped.*

## 6.4 Potable Water Supply Availability and Reliability

The City's surface water and groundwater supply reliability as described in the City's 2015 UWMP is summarized below.

### *6.4.1 Surface Water Reliability*

SSJID has existing agreements to provide surface water to agricultural interests, federal and state agencies, and cities in the south San Joaquin area. Some of these agreements are long-term, while others are as short as one week for agricultural deliveries.

Surface water reliability is in part reliant on storage and releases from upstream dams along the Stanislaus River with respect to the Nick C. DeGroot WTP intake location. While SSJID has surface water rights to approximately 600,000 AFY jointly held with the Oakdale Irrigation District (OID), the full allocation to SSJID and OID is subject to runoff from the Stanislaus River and other constraints per the 1988 Stipulation and Agreement with the U.S. Bureau of Reclamation that constructed and operates New Melones Reservoir on the Stanislaus River.

According to the 1988 Agreement, SSJID is entitled to 300,000 AFY during normal water years, however drought conditions and seasonal variations have the potential to reduce the allocation to SSJID and the contracted cities it delivers water to, including the City. The New Melones Reservoir inflow has a direct effect on surface water availability to SSJID. The following equation governs water supply availability to SSJID when inflows are less than 600,000 AF:

New Melones Inflow + [(600,000 - New Melones Inflow) / 3]

Currently, SSJID is expected to provide total supplies (including irrigation and potable) ranging from 225,000 AFY to 300,000 AFY, though the lowest supply on record was 225,000 AF in both 2014 and 2015 (2015 UWMP). In the event that shortages do occur, SSJID and OID share the deficiencies equally.

As mentioned in Section 6.2, the City is allotted 11,500 AFY from SSJID under Phase 1 and a total of 18,500 AFY under Phase 2. It is anticipated that SSJID will implement Phase 2 of the SCWSP by 2040, providing an additional 7,000 AFY in surface water supply to the City.

#### 6.4.1.1 Reliability of SCWSP Deliveries

Under single-year and multiple-year dry period scenarios, deliveries to the City by SSJID could be reduced. The availability and reliability of the City's SCWSP surface water deliveries during dry years according to SSJID's 2015 UWMP are described below:

- For Single Dry Year reliability, the City has based its projected SSJID allocations on the single driest hydrologic year (Year 1977). With this assumption, it is anticipated that the City will receive between 79 and 100 percent of its normal year water supply during a single dry year.
- For Multiple Dry Years reliability, the City has based its projected SSJID allocations on the most recent five-year multiple dry year hydrologic cycle (Year 2012 through 2016). With this assumption, it is anticipated that the City will receive 100 percent of its normal year water supply during the first, second, and fifth years of a multiple dry year scenario and between 79 percent and 100 percent of its normal year supply during the third and fourth years of a multiple dry year scenario.

In December 2018, the State Water Resource Control Board (SWRCB) released an updated Water Quality Control Plan for the San Francisco Bay/Sacramento San Joaquin Delta Estuary with significant changes to the previous Bay Delta Water Quality Control Plan. The updated plan (Bay-Delta Plan Amendment) requires releases of approximately 40 percent of what would naturally flow in watersheds tributary to the San Joaquin River (including the Stanislaus River) during the February to June period. This means that surface water users on those watersheds would be restricted from using and storing water until 40 percent of unimpaired flows are rededicated for water quality and instream fishery purposes. For the Stanislaus River, the resulting surface water cutbacks would be significant. Because over a dozen lawsuits have been filed in both state and federal courts, the SSJID 2020 UWMP indicates that SSJID has opted to make no near-term planning assumptions related to the implementation of the Bay-Delta Plan Amendment for the purposes of its 2020 UWMP. Should conditions change or consequential resolution of the issues come to be, SSJID indicates it will revise and re-adopt a 2020 UWMP to reflect changes to its impacted water supply.

The projected surface water deliveries available to the City through 2045 as derived from the SSJID 2020 UWMP, are presented in Table 6-2. The City's 2020 UWMP is in progress and the water, sewer, recycled water, and stormwater master plans will be updated within the next one to two years.

The projected surface water deliveries available to the City are presented in Table 6-2.

**Table 6-2. SCWSP Surface Water Deliveries to the City of Manteca during Hydrologic Normal, Single Dry, and Multiple Dry Years, AFY**

| | 2025 | 2030 | 2035 | 2040 | 2045 |
|---|---|---|---|---|---|
| Normal Year[(a)] | 11,500 | 11,500 | 11,500 | 18,500 | 18,500 |
| Single Dry Year | 9,649 | 10,566 | 11,483 | 14,592 | 15,671 |
| Multiple Dry Year 1 | 11,500 | 11,500 | 11,500 | 18,500 | 18,500 |
| Multiple Dry Year 2 | 11,500 | 11,500 | 11,500 | 18,500 | 18,500 |
| Multiple Dry Year 3 | 9,649 | 10,566 | 11,483 | 14,592 | 15,671 |
| Multiple Dry Year 4 | 9,649 | 10,566 | 11,483 | 14,592 | 15,671 |
| Multiple Dry Year 5 | 11,500 | 11,500 | 11,500 | 18,500 | 18,500 |

(a) Source: Derived from SSJID 2020 UWMP, Table 7-2 Basis of Water Year Data.

### *6.4.2 Groundwater Reliability*

There are many factors that can affect groundwater supply reliability, including current storage conditions, water quality, seasonal groundwater level variations and climate change. Reduced use by the City, combined with seasonal variations such as intense wet seasons, can result in increased groundwater table elevation. Additionally, all wells are located in the western portion of the SSJID service area and draw from the Eastern San Joaquin Subbasin, the same basin that the City, the City of Lathrop, the City of Stockton and other groundwater users draw from. For the purposes of this evaluation, only groundwater pumping estimated to be occurring within the City General Plan Update area is included.

While seasonal fluctuations do have a noticeable effect on groundwater elevation, the overall trend showed a decline over time until the City began to use imported surface water in 2005. Historical trends from California Statewide Groundwater Elevation Monitoring (CASGEM) indicate that the basin has

experienced groundwater overdraft conditions. The introduction of surface water supply has helped groundwater elevation trends recover within the City by reducing pumping in the area.

Groundwater supply projections include approved proposed and entitled developments outside of the City boundaries, but within the planning area, and estimated groundwater pumping by others within the planning area. The projected groundwater supply reliability does not account for groundwater pumping outside the City planning area, nor undocumented privately owned domestic or irrigation wells. Groundwater use may increase as population increases, and groundwater use by others (including MUSD and agricultural users) may also increase in single-dry years and multiple-dry years (when surface water cutbacks occur). Constant groundwater demands from the MUSD and agricultural users have been assumed for all hydrologic scenarios.

The GSP indicates that the sustainable yield of the groundwater basin is approximately 1 AFY/acre (0.935 AFY/acre plus or minus 10 percent). For purposes of this WSA, West Yost assumes the City will limit groundwater use to approximately 24,877 AFY (the projected City area at Buildout of the General Plan planning area). The projected groundwater availability, assuming a constant growth rate through 2045, is shown in Table 6-3.

**Table 6-3. Projected Groundwater Production during Hydrologic Normal, Single Dry, and Multiple Dry Years, AFY**

| | 2020[a] | 2025[b] | 2030[b] | 2035[b] | 2040[b] | 2045[b] |
|---|---|---|---|---|---|---|
| Assumed Groundwater Supply | 10,060 | 11,760 | 13,747 | 16,069 | 18,784 | 21,957 |

(a) City of Manteca 2015 UWMP, Table 6-10.

(b) Based on 1 AFY of groundwater is available per acre of City surface area as discussed in Section 6.3 of this WSA. The projected groundwater production during 2025 to 2045 were interpolated using a constant growth rate and the 2020 (10,060) and General Plan Buildout (24,877) values. It is noted that General Plan Buildout is anticipated to occur between 2049 and 2050.

The 2020 value of 10,060 AFY accounts for the area within the City limits and then subtracts out other estimated groundwater uses within City limits. As development continues, the largest groundwater usage inside City limits, agricultural use, would decrease. The groundwater supply shown in Table 6-3 assumes the City's available ground water supply within the safe yield would increase as area outside the current City limits, and within the Planning Area, are annexed into the City for development.

## 6.5 Potable Water Infrastructure Evaluation

A technical memorandum describing the expected infrastructure that would be needed to serve the Project has been prepared by the project applicant. This infrastructure technical memorandum is included as Appendix B. The City's Water System Master Plan, currently in development, will identify infrastructure needed to serve buildout of the General Plan planning area.

# 7.0 DETERMINATION OF WATER SUPPLY SUFFICIENCY BASED ON THE REQUIREMENTS OF SB 610

Water Code section 10910 states:

> *10910(c)(4) If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.*

Pursuant to Water Code section 10910(c)(4) and based on the technical analyses described in this WSA, the total projected water supplies determined to be available for the Proposed Project during Normal, Single Dry, and Multiple Dry water years during a 20-year projection will meet the projected water demand associated with the Proposed Project, in addition to existing and planned future uses.

A comparison of the City's projected potable and raw water supplies and demands is shown in Table 7-1 for Normal, Single Dry, and Multiple Dry Years.

As shown in Table 7-1, demand within the City's service area is not expected to exceed the City's supplies in any normal year between 2020 and 2045.

For purpose of this WSA, no demand reductions are assumed during dry years. With this assumption, the City's water demands are not expected to exceed water supplies in Single Dry Years or Multiple Dry Years.

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**Table 7-1. Summary of Potable and Raw Water Demand Versus Supply During Hydrologic Normal, Single Dry, and Multiple Dry Years**

| Hydrologic Condition | | Supply and Demand Comparison, AFY | | | | |
|---|---|---|---|---|---|---|
| | | 2025 | 2030 | 2035 | 2040 | 2045 |
| Normal Year | | | | | | |
| Available Potable and Raw Water Supply[(a)] | | 23,260 | 25,247 | 27,569 | 37,284 | 40,457 |
| Total Water Demand[(b)] | | 18,480 | 21,012 | 23,891 | 27,164 | 30,885 |
| Potential Surplus (Deficit) | | 4,780 | 4,235 | 3,678 | 10,120 | 9,572 |
| Supply Shortfall, Percent of Demand | | - | - | - | - | - |
| Single Dry Year | | | | | | |
| Available Potable and Raw Water Supply[(a)] | | 23,260 | 25,247 | 27,569 | 37,284 | 40,457 |
| Total Water Demand[(b)] | | 18,480 | 21,012 | 23,891 | 27,164 | 30,885 |
| Potential Surplus (Deficit) | | 4,780 | 4,235 | 3,678 | 10,120 | 9,572 |
| Supply Shortfall, Percent of Demand | | - | - | - | - | - |
| Multiple Dry Year | | | | | | |
| Multiple Dry Year 1 | Available Potable and Raw Water Supply[(a)] | 23,260 | 25,247 | 27,569 | 37,284 | 40,457 |
| | Total Water Demand[(b)] | 18,480 | 21,012 | 23,891 | 27,164 | 30,885 |
| | Potential Surplus (Deficit) | 4,780 | 4,235 | 3,678 | 10,120 | 9,572 |
| | Supply Shortfall, Percent of Demand | - | - | - | - | - |
| Multiple Dry Year 2 | Available Potable and Raw Water Supply[(a)] | 23,260 | 25,247 | 27,569 | 37,284 | 40,457 |
| | Total Water Demand[(b)] | 18,480 | 21,012 | 23,891 | 27,164 | 30,885 |
| | Potential Surplus (Deficit) | 4,780 | 4,235 | 3,678 | 10,120 | 9,572 |
| | Supply Shortfall, Percent of Demand | - | - | - | - | - |
| Multiple Dry Year 3 | Available Potable and Raw Water Supply[(a)] | 21,409 | 24,313 | 27,552 | 33,376 | 37,628 |
| | Total Water Demand[(b)] | 18,480 | 21,012 | 23,891 | 27,164 | 30,885 |
| | Potential Surplus (Deficit) | 2,929 | 3,301 | 3,661 | 6,212 | 6,743 |
| | Supply Shortfall, Percent of Demand | - | - | - | - | - |
| Multiple Dry Year 4 | Available Potable and Raw Water Supply[(a)] | 21,409 | 24,313 | 27,552 | 33,376 | 37,628 |
| | Total Water Demand[(b)] | 18,480 | 21,012 | 23,891 | 27,164 | 30,885 |
| | Potential Surplus (Deficit) | 2,929 | 3,301 | 3,661 | 6,212 | 6,743 |
| | Supply Shortfall, Percent of Demand | - | - | - | - | - |
| Multiple Dry Year 5 | Available Potable and Raw Water Supply[(a)] | 23,260 | 25,247 | 27,569 | 37,284 | 40,457 |
| | Total Water Demand[(b)] | 18,480 | 21,012 | 23,891 | 27,164 | 30,885 |
| | Potential Surplus (Deficit) | 4,780 | 4,235 | 3,678 | 10,120 | 9,572 |
| | Supply Shortfall, Percent of Demand | - | - | - | - | - |

(a) Surface Water Supply from Table 6-2 plus Assumed Groundwater Supply from Table 6-3.
(b) Equals the City's total projected potable and raw water demand (from Table 5-1 and Table 5-4).

DRAFT

# 8.0 WATER SUPPLY ASSESSMENT APPROVAL PROCESS

Water Code sections 10910 and 10911 state:

> *10910 (g)(1) Subject to paragraph (2), the governing body of each public water system shall submit the assessment to the city or county not later than 90 days from the date on which the request was received. The governing body of each public water system, or the city or county if either is required to comply with this act pursuant to subdivision (b), shall approve the assessment prepared pursuant to this section at a regular or special meeting.*
>
> *10911 (b) The city or county shall include the water supply assessment provided pursuant to Section 10910, and any information provided pursuant to subdivision (a), in any environmental document prepared for the project pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.*

As indicated above, this WSA must be included in the Draft EIR being prepared for the Proposed Project.

In addition, SB 221 applies to residential subdivisions of over 500 DUs and requires that the water supplier provide a written verification that the water supply for the project is sufficient, prior to issuance of the final permits. Because the Proposed Project includes 739 residential DUs, it is subject to the requirements of SB 221 (Government Code section 66473.7) and a verification of sufficient water supply (SB 221) report will be required prior to final approvals.

DRAFT

# 9.0 REFERENCES

California Department of Water Resources (DWR), Bulletin 118, *California's Groundwater*, 2006 Update and Interim Update 2016.

Land use data, Richland Planned Communities, December 19, 2018.

City of Manteca 2015 Final Urban Water Management Plan, September 2016.

City of Manteca, Amendment to the Sphere of Influence, prepared by the Community Development Department, 2017.

City of Manteca 2005 Water Master Plan, May 2005.

City of Manteca General Plan 2023, adopted on October 6, 2003.

Eastern San Joaquin Groundwater Authority. Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan. November 2019.

Richland Planned Communities, Conceptual Site Plan, Hat Ranch, November 2018.South San Joaquin Irrigation District 2020 Urban Water Management Plan, June 2021.

West Yost. City of Manteca - General Plan Update Water Supply Report. September 2021.

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# Appendix A

## City of Manteca - General Plan Update
## Water Supply Report

DRAFT

WEST YOST
Water. Engineered.

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westyost.com

September 30, 2021

Project No.: 487-10-16-11
SENT VIA: EMAIL

Beth Thompson
Principal
De Novo Planning Group
1020 Suncast Lane #106
El Dorado Hills, CA 95762

**SUBJECT: City of Manteca - General Plan Update Water Supply Report – Working Draft**

Dear Beth:

The purpose of this letter report is to present the findings of the Water Supply Analysis of the City of Manteca (City) General Plan Update. In this letter report, we summarize the future land use currently being assumed in the on-going General Plan Update, project future demand at Buildout (projected to occur between 2049 and 2050) and compare the projected water demand to the water supply documented in the City's 2015 Urban Water Management Plan (UWMP), the 2019 Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan (GSP), and the South San Joaquin Irrigation District (SSJID) 2020 UWMP. The City is currently preparing the 2020 UWMP. As discussed, the future land use assumptions are subject to change and this letter report will be updated once the General Plan Land Use is final.

As indicated below, based on the assumptions presented in this letter report, the City would have sufficient water supplies to serve development of the proposed land uses.

## GENERAL PLAN UPDATE LAND USE

The City of Manteca is located in the flat plain at the northern end of California's San Joaquin Valley in south San Joaquin County. The City is located approximately 10 miles south of Stockton and 15 miles north of Modesto. The Planning Area for the Manteca General Plan includes the entire city limits and the Planning Area inside the City's Sphere of Influence (SOI).

The location of the General Plan planning area in relation to the current City limits and Sphere of Influence is shown on Figure 1.

The proposed General Plan buildout, if approved, consists of low density residential, medium density residential, and high-density residential land uses, as well as various business, commercial, commercial mixed use, industrial, and park land uses.

Proposed future land uses for buildout of the General Plan are summarized in Table 1 and shown on Figure 2.

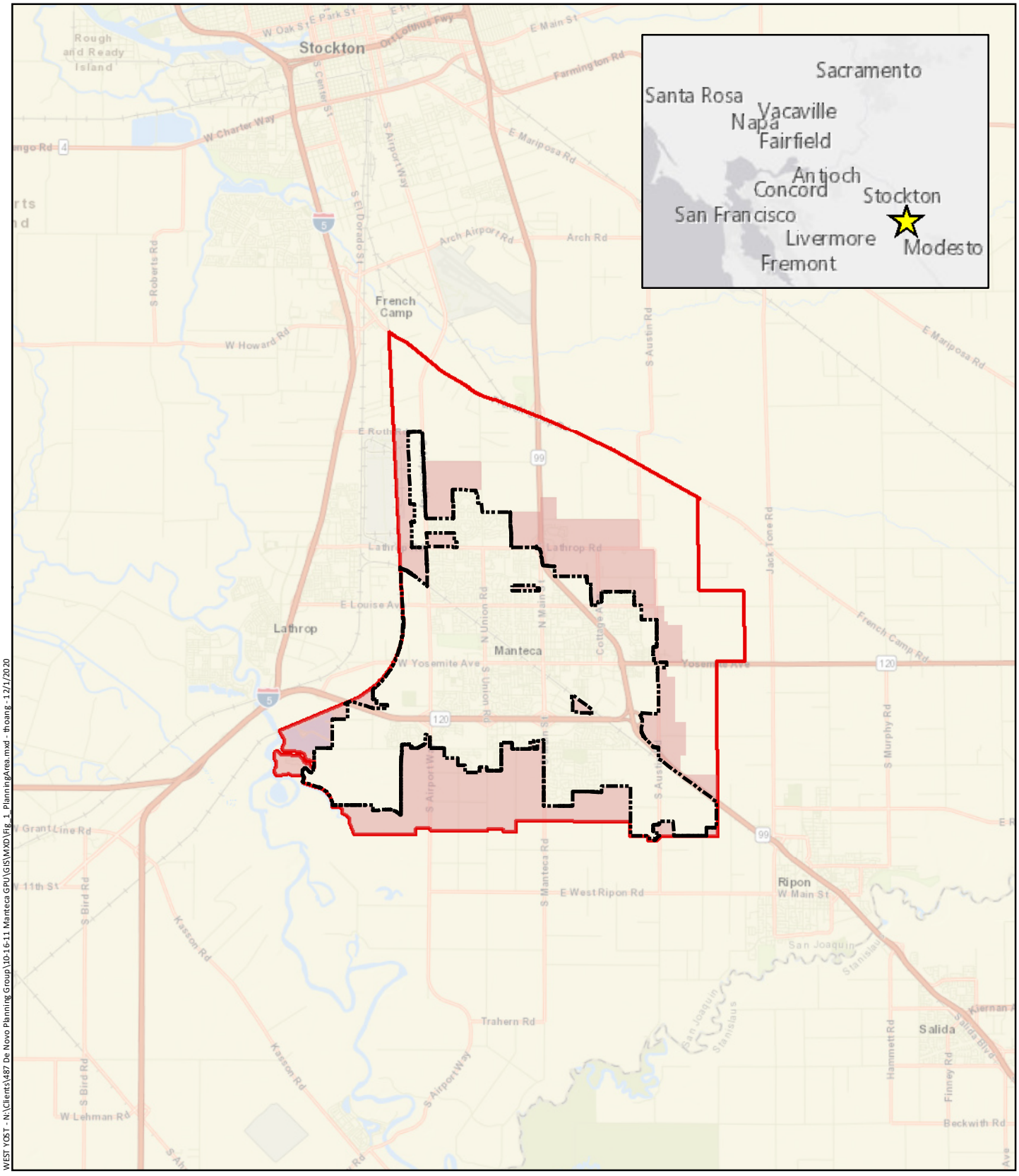
**Table 1. Proposed Future Land Uses for Buildout of the General Plan**

| Land Use | Development Projects, DU, SF | Development Projects, Acres | Remaining General Plan Buildout (less Development Projects), DU, SF | Remaining General Plan Buildout (less Development Projects), Acres | Full General Plan Buildout, DU, SF | Full General Plan Buildout, Acres |
|---|---|---|---|---|---|---|
| Residential Development | | | | | | |
| Single Family Residential[(a)] | 7,291 | 1,458 | 19,273 | 3,855 | 26,564 | 5,313 |
| Multifamily Residential[(b)] | 1,295 | 65 | 8,791 | 440 | 10,086 | 504 |
| Total Housing Units | 8,586 | 1,523 | 28,064 | 4,294 | 36,650 | 5,817 |
| Non-Residential Development | | | | | | |
| Commercial | 3,052,187 | 70 | 8,063,995 | 185 | 11,116,182 | 255 |
| Office | 1,114,694 | 26 | 3,853,950 | 88 | 4,968,634 | 114 |
| Industrial | 4,438,868 | 102 | 14,744,350 | 338 | 19,183,218 | 440 |
| Other (Agriculture) | 41,396 | 1 | 149,007 | 3 | 190,403 | 4 |
| Total Non-Residential | 8,647,145 | 199 | 26,811,302 | 616 | 35,458,437 | 814 |
| Total (Acres) | | 3,443 | | 9,819 | | 6,631 |

*Source: City of Manteca, Draft Environmental Impact Report – Manteca General Plan Update, December 2020.*

(a) Single Family Residential land use was assumed to be low density residential (2.1-8 du/ac).

(b) Multifamily Residential land use was assumed to be high density residential (15-25 du/ac).




WEST YOST - N:\Clients\487 De Novo Planning Group\10-16-11 Manteca GPU\GIS\MXD\Fig_1_PlanningArea.mxd - thoang - 12/1/2020

City Limits

Sphere of Influence

Planning Area

N

0 0.5 1

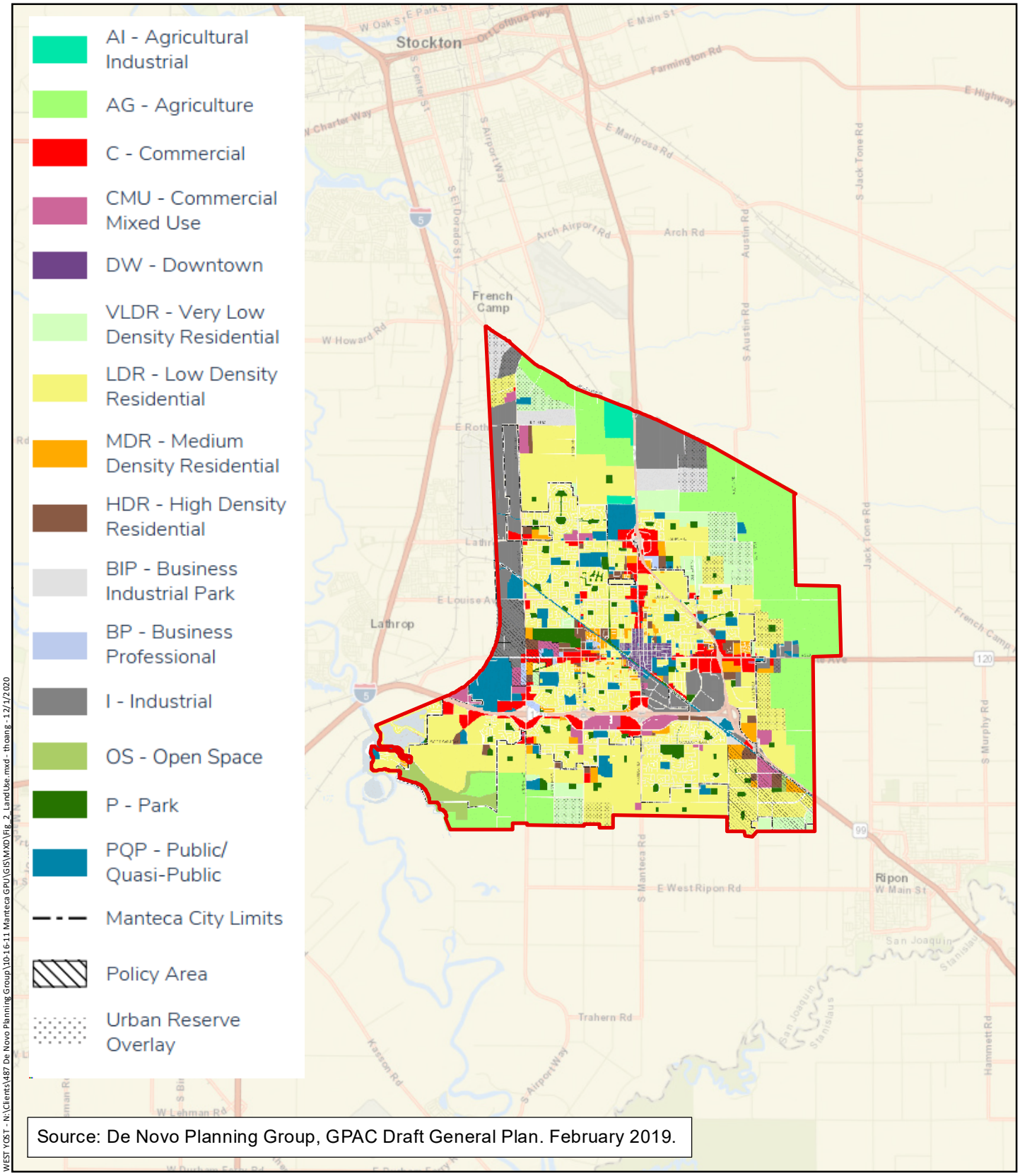
Scale in Miles

**Figure 1**

**Planning Area**

**De Novo Planning Group**
Manteca General Plan Update

WEST YOST




Planning Area

0 0.5 1
Scale in Miles

**Figure 2**

**Land Use**

**De Novo Planning Group**
Manteca General Plan Update

WEST YOST - N:\Clients\487 De Novo Planning Group\10-16-11 Manteca GPU\GIS\MXD\Fig_2_LandUse.mxd - thoang - 12/1/2020

# PROJECTED WATER DEMAND

The projected water demand for the future land use areas was calculated by multiplying the projected land uses from Table 1 by the land use-based water demand factors shown in Table 2.

**Table 2. Water Use Factors by Land Use Type**

| Land Use Designation | Water Use Factor, Gallons Per Day per Acre (gpd/acre) | |
|---|---|---|
| | 2005 Water Master Plan[a] | Adjusted for SBX7-7[b] |
| Very Low Density Residential (VLDR) | 1,700 | 1,360 |
| Low Density Residential (LDR) | 2,800 | 2,240 |
| Medium Density Residential (MDR) | 3500 | 2,800 |
| High Density Residential (HDR) | 6,500 | 5,200 |
| Industrial | 300 | 240 |
| Neighborhood Commercial | 2,200 | 1,760 |
| Business Industrial Park | 300 | 240 |
| Commercial Mixed-Use | 2,200 | 1,760 |
| General Commercial | 1,500 | 1,200 |
| Open Space | 4,000 | 3,200 |
| Parks | 4,000 | 3,200 |
| Public/Quasi-Public | 300 | 240 |

(a) Based on unit water demand factors established in the City of Manteca 2005 Water Master Plan. These factors assume a per capita water use of approximately 225 GPCD and do not account for conservation measures.

(b) Based on a 20 percent reduction of factors shown in the City of Manteca 2005 Water Master Plan. These factors assume that the City is able to meet its per capita water use target of 179 GPCD.

The resulting water demand projection is shown in Table 3.

**Table 3. Projected Water Demand of Future Land Uses at Buildout of the General Plan**

| Proposed Land Use | Area, acres[a] | Water Demand Factor, gpd per acre[b] | Water Demand, acre-feet |
|---|---|---|---|
| Single Family Residential | 5,313 | 2,240 | 13,330 |
| Multi-Family Residential | 504 | 5,200 | 2,937 |
| Industrial | 440 | 240 | 118 |
| Office | 114 | 1,760 | 225 |
| General Commercial | 255 | 1,200 | 343 |
| Agricultural | 4 | - | - |
| Subtotal | 6,631 | - | 16,954 |
| Unaccounted-for Water[c] | - | - | 1,017 |
| **Total** | - | - | **17,971** |

(a) See Table 1.

(b) See Table 2.

(c) Six percent of water demand per 2015 UWMP.

City potable and raw water demand in 2020 was approximately 16,253 AF, which may have been caused by a higher daytime population than normal due to stay-at-home orders and mandated closure of non-essential businesses in response to the COVID-19 pandemic. **Therefore, the projected potable and raw water demand at buildout of the General Plan is 34,224 AFY (16,253 AFY existing plus 17,971 AFY projected).**

## WATER SUPPLY SUMMARY

The City's water supplies are documented in the City's 2015 UWMP and the SSJID 2020 UWMP and are summarized below.

The projected surface water deliveries available to the City in 2045, near Buildout of the General Plan, as documented in the SSJID 2020 UWMP, are presented in Table 4.

**Table 4. SCWSP Surface Water Deliveries to the City of Manteca during Hydrologic Normal, Single-Dry, and Multiple-Dry Years in 2045**

| Hydrologic Condition | Percent of Normal Supply | Projected Water Delivery, AFY |
|---|---|---|
| Normal Year | 100 | 18,500 |
| Single Dry Year | 85 | 15,671 |
| Multiple Dry Year 1 | 100 | 18,500 |
| Multiple Dry Year 2 | 100 | 18,500 |
| Multiple Dry Year 3 | 85 | 15,671 |
| Multiple Dry Year 4 | 85 | 15,671 |
| Multiple Dry Year 5 | 85 | 18,500 |

*Source: Derived from SSJID 2020 UWMP, Table 7-2 Basis of Water Year Data.*

The GSP indicates that the sustainable yield of the groundwater basin is approximately 1 AFY/acre (715,000 AFY plus or minus 10 percent over the subbasin area of 1,195 square miles, an average of 0.935 AF/acre). For purposes of this Report, West Yost assumes the City will limit groundwater use to approximately 24,877 AFY (based on the projected City area at Buildout of the General Plan planning area). The projected groundwater availability is shown in Table 5. The groundwater pumping shown in Table 5 assumes the City would increase groundwater pumping as land is incorporated and removed from agricultural production.

**Table 5. Projected Groundwater Production during Hydrologic Normal, Single-Dry and Multiple-Dry Years in 2040[(a)]**

| Planning Area | Projected Groundwater Production, AFY |
|---|---|
| Current City Limits | 11,577 |
| Additional Future Planning Area | 13,300 |
| **Maximum Groundwater Supply** | **24,877** |

(a) Based on assumption that 1 AFY of groundwater is available per acre of City surface area from the Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan (November 2019). City area at Buildout of the General Plan Planning Area is from the City's Draft Environmental Impact Report – Manteca General Plan Update, December 2020.

The City's total potable and raw water supply is shown in Table 6.

**Table 6. Summary of Potable and Raw Water Supply During Hydrologic Normal, Single-Dry and Multiple-Dry Years[a]**

| Hydrologic Condition | Potable and Raw Water Supply at Buildout of the General Plan Area, AFY |
|---|---|
| Normal Year | 43,377 |
| Single Dry Year | 40,548 |
| Multiple Dry Year 1 | 43,377 |
| Multiple Dry Year 2 | 43,377 |
| Multiple Dry Year 3 | 40,548 |
| Multiple Dry Year 4 | 40,548 |
| Multiple Dry Year 5 | 43,377 |

(a) Surface Water Supply from Table 4 plus Assumed Groundwater Supply from Table 5.

The General Plan indicates that the City does not intend to expand recycled water use at this time. The City currently uses undisinfected secondary effluent to irrigate fodder crops in the land adjacent to the City's wastewater treatment plant. However, there is no infrastructure in place to deliver tertiary treated recycled water to retail customers. Although a Recycled Water Master Plan is being prepared with the intent that the City would use recycled water to offset potable water demands for outdoor uses in the future, recycled water infrastructure is not planned to be constructed in time to serve the buildout of the General Plan. Therefore, recycled water supplies are not assumed to be an available water supply for this letter report.

## COMPARISON OF WATER SUPPLY AND DEMAND AT BUILDOUT

A comparison of the available water supply and projected demands at buildout of the General Plan is shown in Table 7.

**Table 7. Comparison of Potable and Raw Water Demand Versus Supply During Hydrologic Normal, Single Dry, and Multiple Dry Years**

| Hydrologic Condition | Supply and Demand Comparison, AFY<br>Buildout of General Plan Area |
|---|---|
| Normal Year | |
| Available Potable and Raw Water Supply[a] | 43,377 |
| Total Water Demand[b] | 34,224 |
| Potential Surplus (Deficit) | 9,153 |
| Supply Shortfall, Percent of Demand | - |
| Single Dry Year | |
| Available Potable and Raw Water Supply[a] | 40,548 |
| Total Water Demand[b] | 34,224 |

**Table 7. Comparison of Potable and Raw Water Demand Versus Supply During Hydrologic Normal, Single Dry, and Multiple Dry Years**

| Hydrologic Condition | | Supply and Demand Comparison, AFY<br>Buildout of General Plan Area |
|---|---|---|
| Potential Surplus (Deficit) | | 6,324 |
| Supply Shortfall, Percent of Demand | | - |
| Multiple Dry Year | | |
| Multiple Dry Year 1 | Available Potable and Raw Water Supply[(a)] | 43,377 |
| | Total Water Demand[(b)] | 34,224 |
| | Potential Surplus (Deficit) | 9,153 |
| | Supply Shortfall, Percent of Demand | - |
| Multiple Dry Year 2 | Available Potable and Raw Water Supply[(a)] | 43,377 |
| | Total Water Demand[(b)] | 34,224 |
| | Potential Surplus (Deficit) | 9,153 |
| | Supply Shortfall, Percent of Demand | - |
| Multiple Dry Year 3 | Available Potable and Raw Water Supply[(a)] | 40,548 |
| | Total Water Demand[(b)] | 34,224 |
| | Potential Surplus (Deficit) | 6,324 |
| | Supply Shortfall, Percent of Demand | - |
| Multiple Dry Year 4 | Available Potable and Raw Water Supply[(a)] | 40,548 |
| | Total Water Demand[(b)] | 34,224 |
| | Potential Surplus (Deficit) | 6,324 |
| | Supply Shortfall, Percent of Demand | - |
| Multiple Dry Year 5 | Available Potable and Raw Water Supply[(a)] | 43,377 |
| | Total Water Demand[(b)] | 34,224 |
| | Potential Surplus (Deficit) | 9,153 |
| | Supply Shortfall, Percent of Demand | - |

(a) From Table 6.
(b) Existing plus projected demand. See paragraph under Projected Water Demand.

As indicated in Table 7, based on the assumptions presented in this report, the City would have sufficient water supplies to serve development of the proposed land uses.

Thank you for this opportunity to be of continued service to you and the City of Manteca. Please let us know if you have any questions or require further information.

Sincerely,
WEST YOST

Jim Connell, PE
Principal Engineer
RCE #63052

Appendix B

# Hat Ranch Water Supply Assessment – Proposed Water System Reference Analysis

DRAFT

MACKAY & SOMPS
ENGINEERS PLANNERS SURVEYORS

**Project Number**: 25224.000

# MEMORANDUM

**Date:** 10/28/2021

**Subject:** Hat Ranch Water Supply Assessment – Proposed Water System Reference Analysis

## I. Project Site and Description

The Project Site is located adjacent to the Manteca City limits and within the Manteca Sphere of Influence (SOI). The City of Manteca will be the water purveyor for the proposed Project. The City's water system service area includes all areas within the City limits. The proposed Tentative Map and associated documents were designed utilizing the City of Manteca's 2005 Water Master Plan and the most current version of the City of Manteca Standard Plans and Specifications. The proposed Project Site project will extend the existing water system in accordance with these documents.

## II. Proposed Potable Water System

The Project Site would be served by a new potable water distribution system. Development of the proposed potable water system will require the installation of additional water mains within the proposed roadways to comply with the 2005 City of Manteca Master Water Plan. The proposed on-site water distribution system will have various points-of-connection to existing City mains. The Project will install an internal looped system and connect to the existing water main lines in Manteca Rd (Main St), Atherton Dr, Pillsbury Rd, and at various stub streets from the existing Pillsbury Estates and Atherton Estates subdivisions to the north and Evans Estates to the west. (See Attached "Hat Ranch Potable Water System Exhibit" for further reference).

## III. Proposed Phasing and Modeling Analysis

A water system analysis will be prepared during future design of the Construction Documents to ensure that the final designs are compliant with City of Manteca fire flow and pressure standards for the Project Site. The proposed design and modeling analysis will verify that adequate fire flow and peak domestic demands are met in accordance with City Standards for each individual phase of the Project. The following design scenarios will be analyzed and included with the future construction documents for the Project:

- Fire Flow Design Scenario
- Fire Flow plus Peak Hour Domestic Demand Design Scenario

IV. Future Potable Well Site Details, Timing, and PFIP Fees

A designated potable well site area has been provided within the East Park of Hat Ranch as shown in the attached exhibits. The potable well site has been sized per direction of City staff to provide sufficient area for the potable well facilities that may be required.

All potable wells in the City of Manteca are designed and constructed under the direction of City staff. The timing and need for the potable well are to be determined by City staff in in accordance with the current City of Manteca Water System Master Plans and Models. Additionally, the Project Site will pay all applicable City of Manteca Water PFIP fees and receive credits/reimbursements where applicable.

V. Conclusion

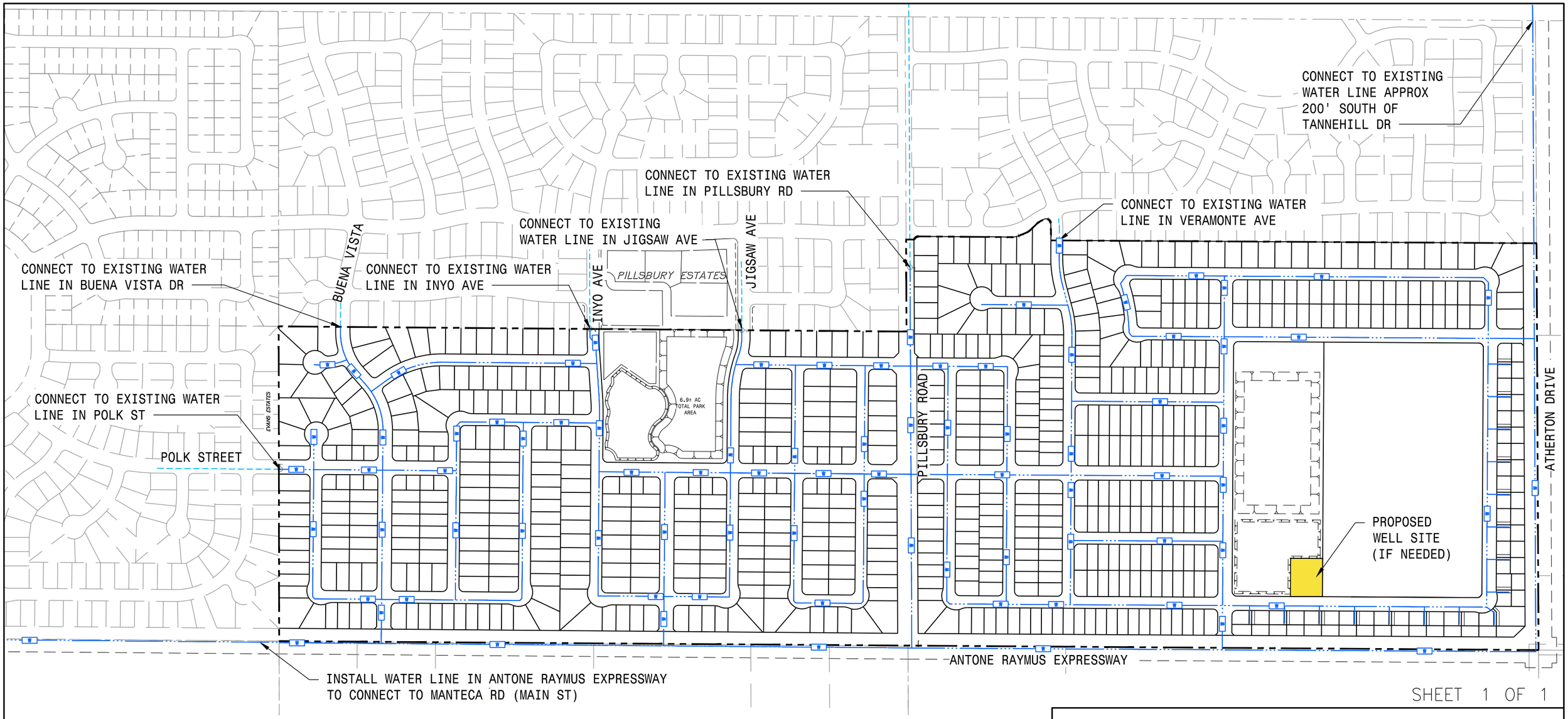
The proposed Project Site will provide an adequate potable distribution system in accordance with City of Manteca Standards and Specification and provide a lot to facilitate the construction of a future potable well.

Best Regards,

**MacKay & Somps Civil Engineers, Inc.**

**By:** 

Christian T. Ragan




SHEET 1 OF 1

LEGEND

PROPOSED WATER LINE

EXISTING WATER LINE

NOTE: PIPE SIZES TO BE DETERMINED AT TIME OF FINAL DESIGN/PREPARATION OF IMPROVEMENT PLANS

0 200 400 800

SCALE: 1"=400'

# HAT RANCH

## POTABLE WATER SYSTEM EXHIBIT

CITY OF MANTECA CALIFORNIA

MACKAY & SOMPS
ENGINEERS PLANNERS SURVEYORS
5142B FRANKLIN DR, PLEASANTON, CA 94588 (925)225-0690

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| PLEASANTON | 1" = 400' | 10/28/2021 | 25224.000 |
|---|---|---|---|
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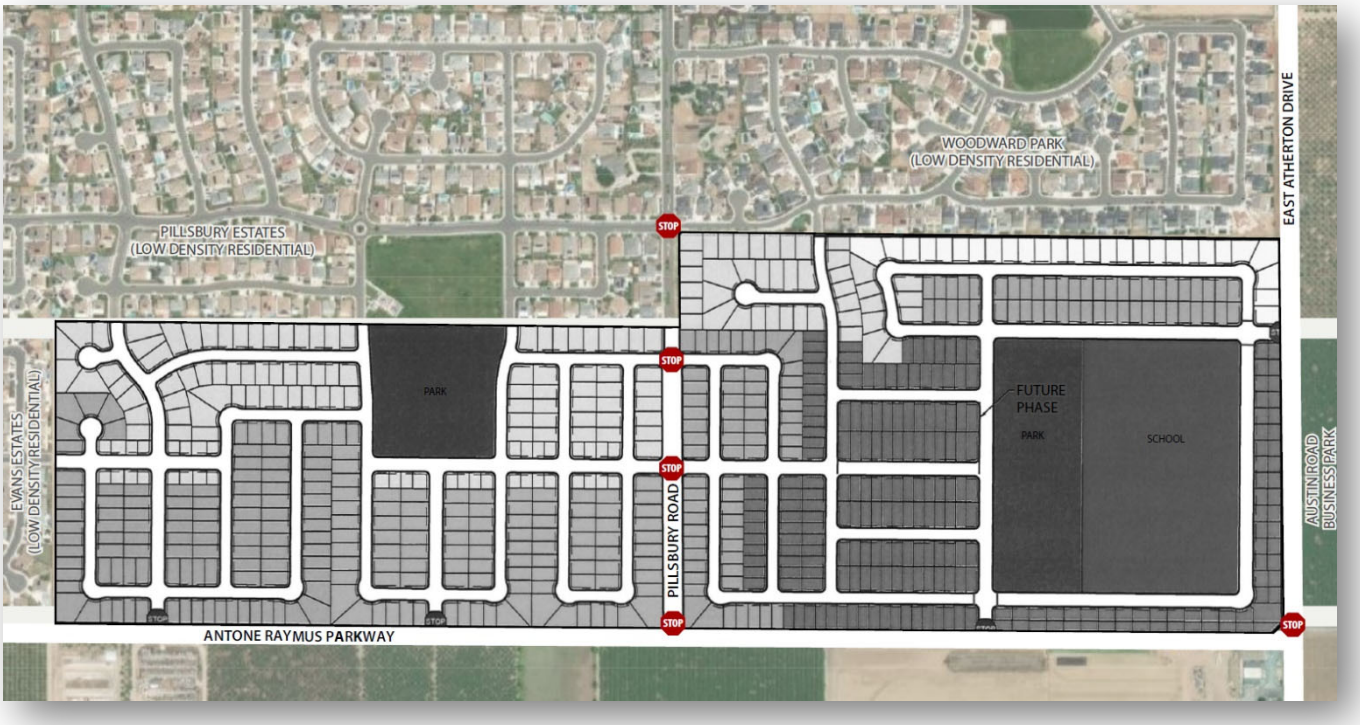
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Santa Rosa, CA 95407
707-543-8506

WEST YOST
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# APPENDIX K

# Hat Ranch Project – Transportation Analysis




Prepared for:
Raney Planning & Management
City of Manteca
J.B. Anderson Land Use Planning

July 19, 2022
RS13-3161

FEHR PEERS

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# 1. Introduction

This study addresses the potential transportation impacts associated with the proposed Hat Ranch Project located in the currently unincorporated area of San Joaquin County, south-east of the City of Manteca. Vehicle Miles Traveled (VMT), intersection operations, site access, and access to bicycle, pedestrian and transit facilities are analyzed. This report documents the methodologies, inputs, and results of the analysis.

## 1.1 Project Site Location

The project site consists of four (4) parcels, encompasses 184.4 acres in the currently unincorporated area of San Joaquin County, south-east of the City of Manteca. The City of Manteca limits currently comprise the proposed Hat Ranch Project's western, northern, and eastern boundaries. The project site is located within the 20-Year planning Horizon of the City of Manteca's Sphere of Influence (SOI), and is identified as San Joaquin County Assessor's Parcel Numbers (APNs) 226-120-10, 226-120-11, and 226-140-04

**Figure 1** shows the location of the project site south of State Route 120 and Woodward Avenue and west of State Route 99 and Austin Road and the 27 study intersections that were analyzed.

## 1.2 Project Description

The proposed Hat Ranch Project would be composed of the following land uses:

- Hat Ranch West – 331 Single-Family and Single-Family Attached Dwelling Units;
- Hat Ranch West – 6.9 acre community serving park;
- Hat Ranch East - 407 Single-Family and Single-Family Attached Dwelling Units;
- Hat Ranch East – 9.3 acre community serving park; and
- K-8 School – 16.1 acre school with up to 675 students.

Primary access to the development would be provided via Antone Raymus Parkway that would be constructed between Main Street / Manteca Road to the west and Atherton Drive / Sedan Avenue to the east. It should be noted that the Hat Ranch Project will construct one through lane in each direction with turn pockets at specific intersections within the north half of the ultimate Antone Raymus Parkway right-of-way and improvements within the west half of the ultimate Atherton Drive right-of-way, based on design plans reviewed and approved by the Engineering Department and City Engineer.

In the near future, Antone Raymus Parkway would be extended west through the Griffin Park Specific Plan and connect Main Street / Manteca Road to the east with Tinnin Road to the west. Additional access would be provided via Pillsbury Road that would bisect the Hat Ranch Project (West and East). The proposed school would be located in the Hat Ranch East area, near Atherton Road.

As part of a future development project, and included in the Cumulative No Project and Cumulative Plus Project Conditions, Antone Raymus Parkway would be widened to the south to provide two through lanes in each direction, with a center median and turn pockets.

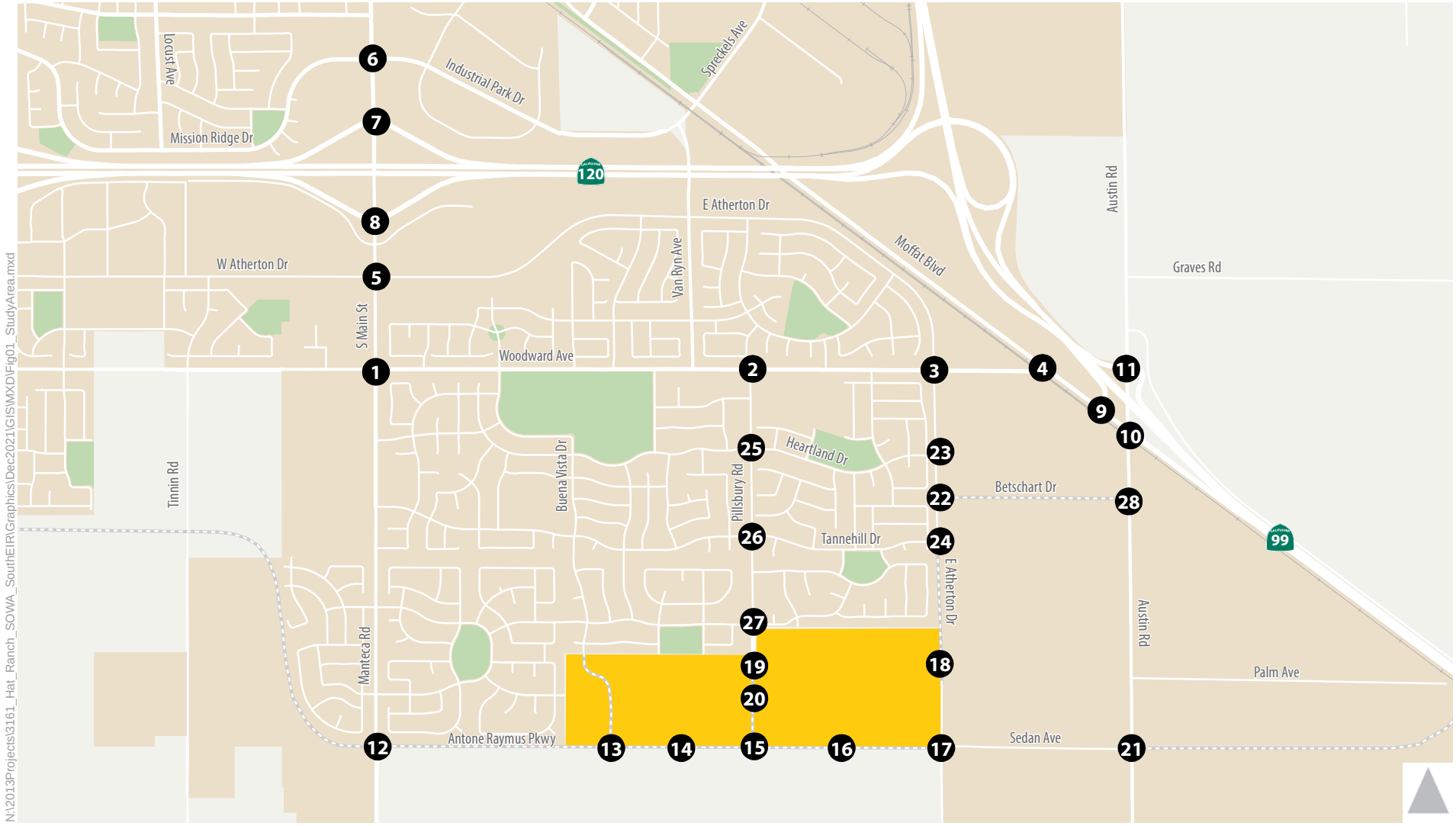



Figure 1

## Study Area

## 1.3 Study Area

The study area was selected based on the development project's location, site access, and projected trip distribution and assignment. The study area captures the potential impacts of the proposed Hat Ranch project. The analysis considers traffic operations at the following 27 intersections:

### Study Intersections

1. Woodward Avenue / Main Street;
2. Woodward Avenue / Pillsbury Road;
3. Woodward Avenue / Atherton Drive;
4. Woodward Avenue / Moffat Boulevard;
5. Main Street / Atherton Drive;
6. Main Street / Mission Ridge Drive / Industrial Park Drive;
7. SR 120 WB Ramps / Main Street;
8. SR 120 EB Ramps / Main Street;
9. SR 99 SB Off-Ramp / Moffat Boulevard;
10. Moffat Boulevard / Austin Road / SR 99 SB On-Ramp;
11. Austin Road / SR 99 NB Ramps.
12. Antone Raymus Parkway / Manteca Road (Main Street);
13. Antone Raymus Parkway / Project Intersection #1 ;
14. Antone Raymus Parkway / Project Intersection #2;
15. Antone Raymus Parkway / Pillsbury Road;
16. Antone Raymus Parkway / Project Intersection #3;
17. Antone Raymus Parkway / Atherton Drive;
18. Project Intersection #4 / Atherton Drive;
19. Project Intersection #5 / Pillsbury Road;
20. Project Intersection #6 / Pillsbury Road;
21. Antone Raymus Parkway / Austin Road (future intersection);
22. Betschart Drive / Atherton Drive (future intersection);
23. Heartland Drive / Atherton Drive;
24. Tannehill Drive / Atherton Drive;
25. Heartland Drive / Pillsbury Road;
26. Tannehill Drive / Pillsbury Road; and
27. Mono Street / Pillsbury Road.

## 1.4 Study Scenarios

The study intersections were evaluated for the following four scenarios:

- **Existing Conditions** – Analyzes operations as they exist today.

- **Existing Plus Project Conditions** – Analyzes existing operations with the addition of trips generated from the proposed Hat Ranch Project.

- **Cumulative No Project Conditions** - Analyzes Cumulative Year (2040) volumes based on the City of Manteca / San Joaquin Council of Governments Travel Forecasting Model (hereafter, City of Manteca TFM), assuming the project area remains in its current state with a single 20,000 square foot residential mansion.

- **Cumulative Plus Project Conditions** – Analyzes Cumulative Year (2040) volumes with the addition of trips generated from the proposed Hat Ranch Project.

# 2. Significance Criteria and Analysis Methodology

This chapter describes the significance criteria used to evaluate project impacts and the methodology used to analyze the study intersections described above, to develop traffic forecasts for study intersections, and to complete the vehicle miles traveled analysis.

## 2.1 Applicable Policies and Significance Criteria

### Senate Bill (SB) 743 Vehicle Miles Traveled

Senate Bill (SB) 743 was signed into law in 2013 and is mandating substantial changes in the way transportation impact analyses are being prepared. Notably, it precludes the use of level of service (LOS) to identify significant transportation impacts in CEQA documents for land use projects, requiring instead that Vehicle Miles Traveled (VMT) be used as the preferred metric to determine a project's potential impacts on transportation. On December 28, 2018, the CEQA Guidelines were amended to add Section 15064.3, Determining the Significance of Transportation Impacts, which states that generally, VMT is the most appropriate measure of transportation impacts. According to 15064.3(a), "Except as provided in subdivision (b)(2) (regarding roadway capacity), a project's effect on automobile delay shall not constitute a significant environmental impact." Beginning on July 1, 2020, the provisions of 15064.3 applied statewide.

To aid in SB 743 implementation, in December 2018, the California Office of Planning and Research (OPR) released a *Technical Advisory on Evaluating Transportation Impacts in CEQA* (Technical Advisory). The Technical Advisory provides advice and recommendations to CEQA lead agencies on how to implement the SB 743 changes. This includes technical recommendations regarding the assessment of VMT, thresholds of significance, VMT mitigation measures, and screening thresholds for certain land use projects. Lead agencies may consider and use these recommendations at their discretion and with the provision of substantial evidence to support alternative approaches.

In July 2021, Fehr & Peers prepared the *Senate Bill 743 Implementation for the City of Manteca Memorandum* (SB 743 Memorandum) and submitted to City of Manteca. The SB 743 Memorandum identifies the thresholds of significance for VMT that Manteca may apply when analyzing the transportation impacts of land use projects that are subject to CEQA. The City of Manteca is in process of reviewing and finalizing the final thresholds. For the purpose of this study, methodology and thresholds identified in the SB 743 Memorandum are applied.

The Technical Advisory identifies "screening thresholds" to identify when a project should be expected to cause a less-than-significant impact without conducting a detailed study. The Technical Advisory suggests that projects meeting one or more of the following criteria should be expected to have a less-than-significant impact on VMT.

- Small projects – projects consistent with a Sustainable Communities Strategy and local general plan that generate or attract fewer than 110 trips per day.

- Projects near major transit stops – certain projects (residential, retail, office, or a mix of these uses) proposed within ½ mile of an existing major transit stop or an existing stop along a high-quality transit corridor.

- Affordable residential development – a project consisting of a high percentage of affordable housing may be a basis to find a less-than-significant impact on VMT.

- Local-serving retail – local-serving retail development tends to shorten trips and reduce VMT. The Technical Advisory encourages lead agencies to decide when a project will likely be local-serving, but generally acknowledges that retail development including stores larger than 50,000 square feet might be considered regional-serving. The Technical Advisory suggests lead agencies analyze whether regional-serving retail would increase or decrease VMT (i.e., not presume a less-than-significant).

- Projects in low VMT areas – residential and office projects that incorporate similar features (i.e., density, mix of uses, transit accessibility) as existing development in areas with low VMT will tend to exhibit similarly low VMT.

The Technical Advisory also identifies recommended numeric VMT thresholds for residential, office, and retail projects. The residential threshold is described below.

- Residential development that would generate vehicle travel exceeding 15 percent below existing (baseline) residential VMT per capita may indicate a significant transportation impact. Existing VMT per capita may be measured as a regional VMT per capita or as city VMT per capita.

The SB 743 Memorandum identifies the recommended numeric VMT thresholds for residential projects. Based on the VMT thresholds, a residential project would result in a less-than-significant transportation impact if:

- Under existing (baseline) conditions, the residential development would generate home-based VMT per dwelling unit equal or below 85 percent of the existing (baseline) City of Manteca average for the same housing category (single-family, multi-family, or age-restricted); AND
- Under cumulative conditions, the residential development would generate home-based VMT per dwelling equal or below 85 percent of the cumulative City of Manteca average for the same housing category (single-family, multi-family, or age-restricted).

Alternatively, the project would result in a less-than-significant transportation impact if:

- The residential development would result in the total city-wide VMT in the City of Manteca travel forecasting model area to decrease under existing (baseline) conditions AND cumulative conditions.

### Vehicle Miles Traveled (VMT)

The Travel Forecasting Model (TFM) developed for the City of Manteca General Plan Update was used to develop baseline (2021) VMT per single family residential household. The established baseline (2021) VMT per single family household is 103.7. Therefore, single family residential projects that exceed 88.1 VMT per household (a 15% reduction compared to the baseline 103.7 VMT) would be considered to have a significant transportation impact. Projects that generate less than 88.1 VMT per household would be considered to have a less than significant transportation impact.

The established Cumulative VMT per single family household is 91.4. Therefore, single family residential projects that exceed 77.7 VMT per household (a 15% reduction compared to the cumulative 91.4 VMT) would be considered to have a significant transportation impact. Projects that generate less than 77.7 VMT per household would be considered to have a less than significant transportation impact.

### Level of Service (LOS)

As previously noted, level of service (LOS) may no longer be used to identify significant transportation impacts in CEQA documents for land use projects. However, this analysis includes a LOS analysis to determine if the proposed project would result in unacceptable intersection operations per the City of Manteca General Plan policies and standards. Policy C-P-2 of the 2023 General Plan strives for LOS D or better while LOS E or worse is considered unacceptable to the extend when raising the LOS above E is not feasible.

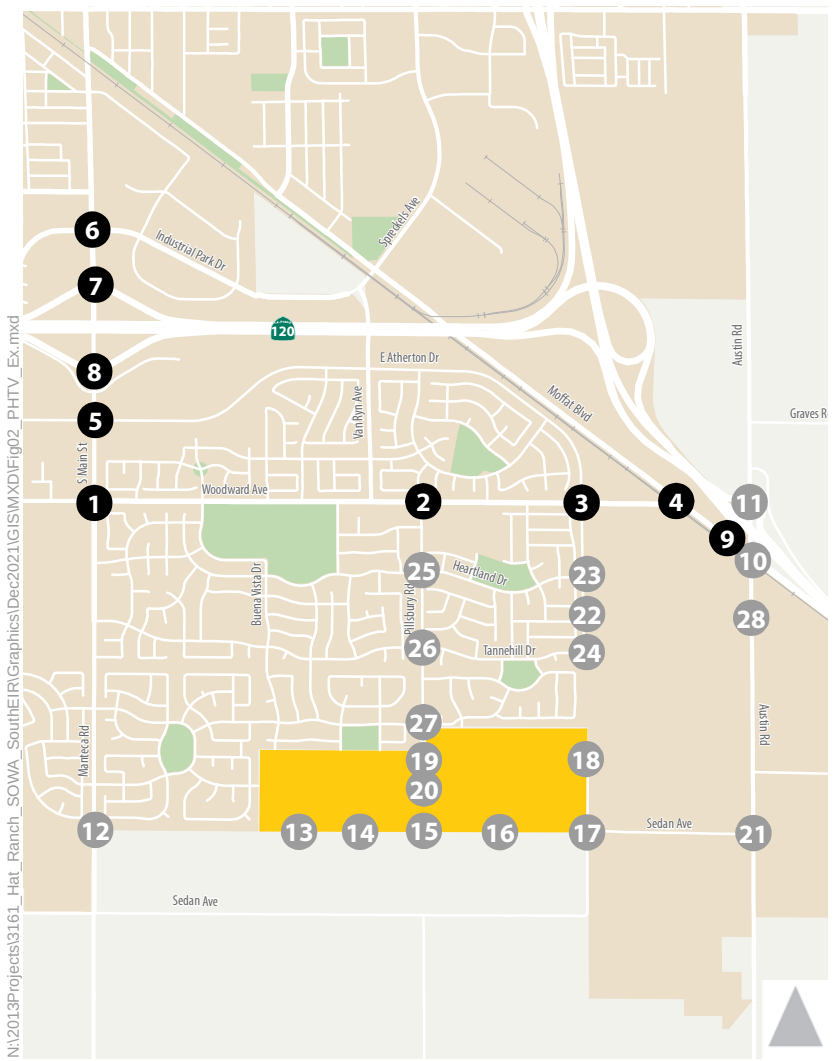
## 2.2 Data Collection

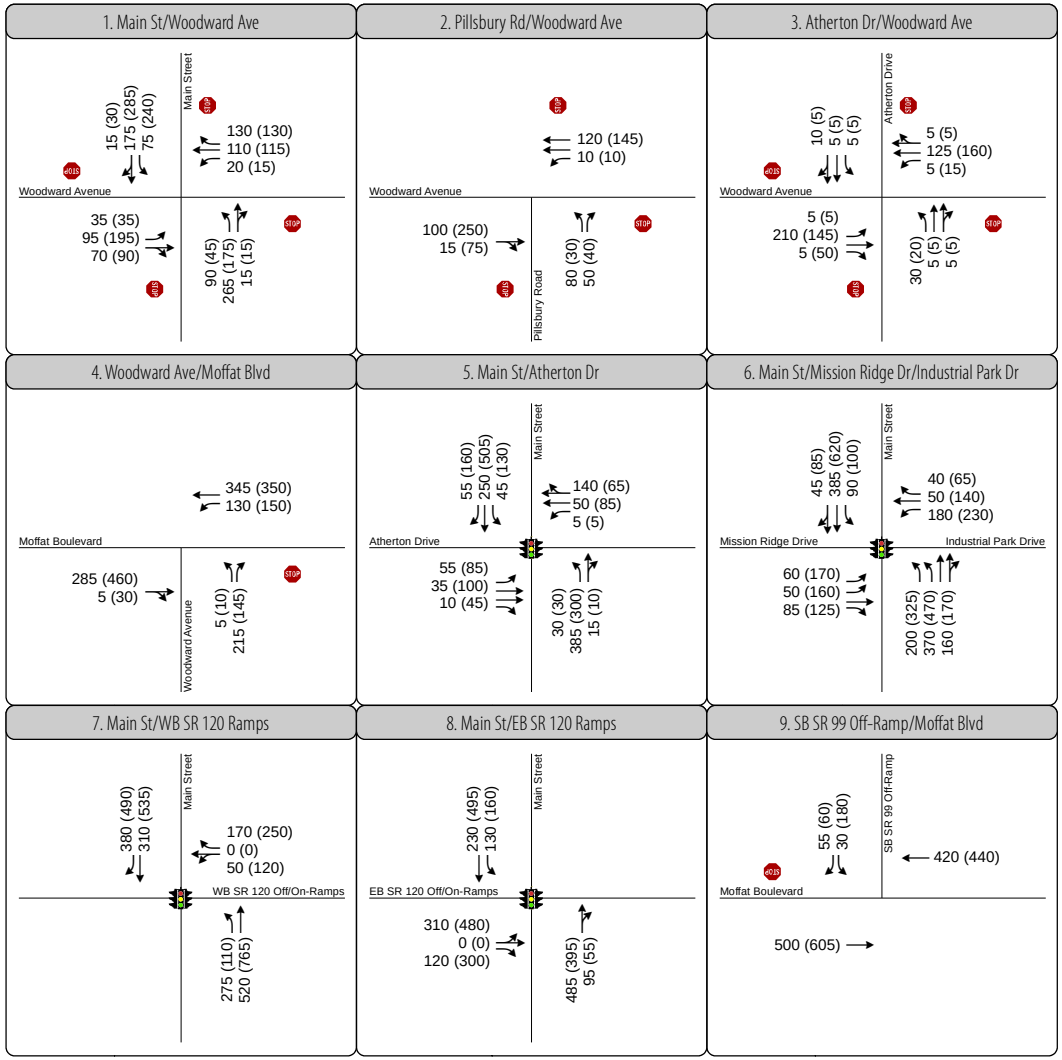
**Figures 2a, 2b, and 2c** displays the existing intersection turning movement counts at the study intersections. Figure 2a presents intersections #1 through #9, Figure 2b presents intersections #10 through #18, and Figure 2c presents intersections #19 through #28.

Figures 2a and 2b presents the project site plan and the six (6) project access point from Antone Raymus Parkway, Atherton Drive, and Pillsbury Road.

- Antone Raymus Parkway / Hat Ranch Access # 1 (Study intersection #13);
- Antone Raymus Parkway / Hat Ranch Access # 2 (Study intersection #14);
- Antone Raymus Parkway / Hat Ranch Access # 3 (Study intersection #16);
- Atherton Drive / Hat Ranch Access # 4 (Study intersection #18);
- Pillsbury Road / Hat Ranch Access # 5 (Study intersection #19); and
- Pillsbury Road / Hat Ranch Access # 6 (Study intersection #20).

Traffic count data collected in 2019 (pre-COVID) were adjusted to represent existing (2021) AM and PM peak hour conditions based on growth factors derived from the City of Manteca General Plan Update Travel Forecasting Model.




1 Study Intersection

Project Site

Turn Lane

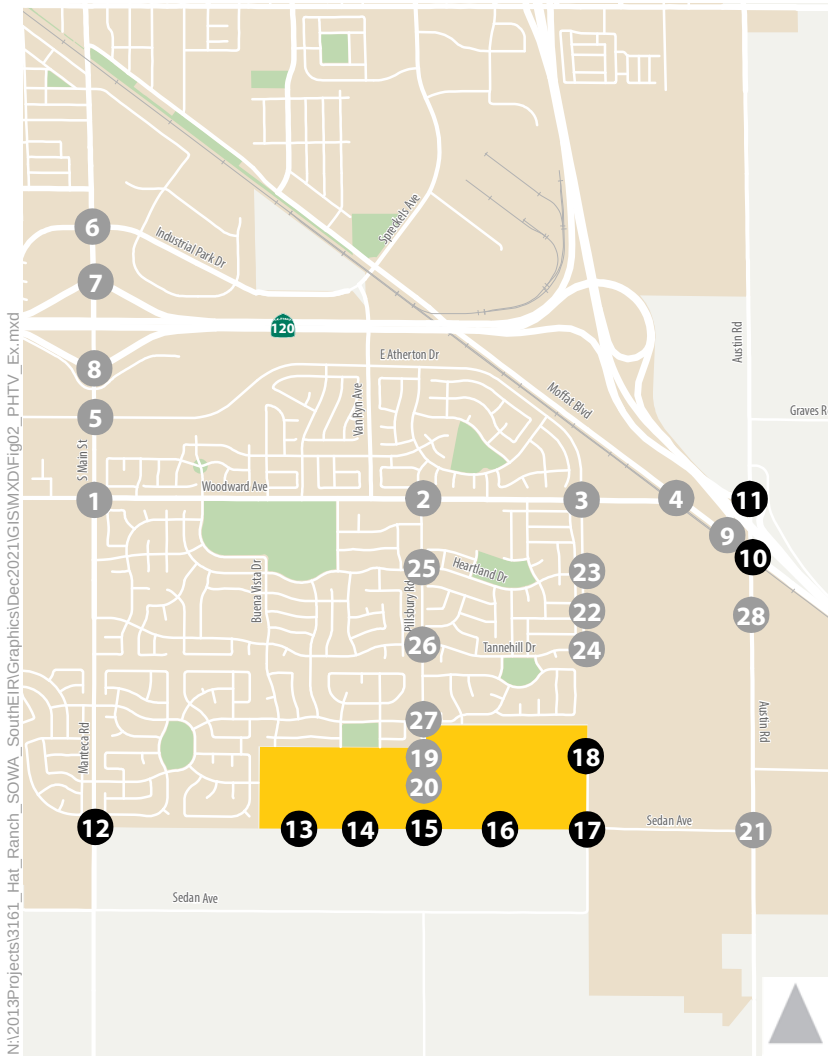
AM (PM) Peak Hour Traffic Volume

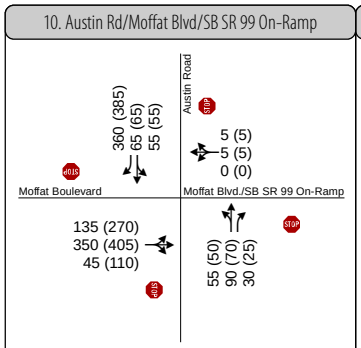
Traffic Signal

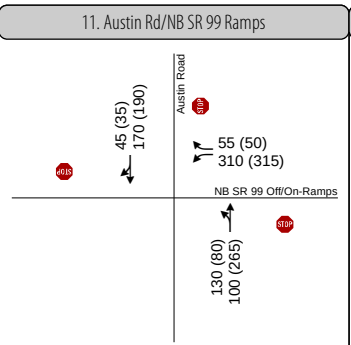
Stop Sign

Figure 2a

# Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions



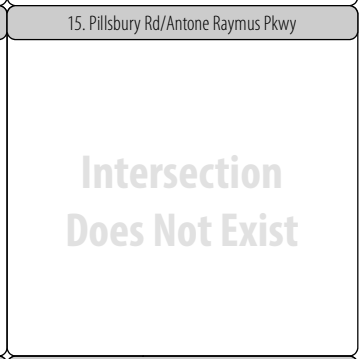








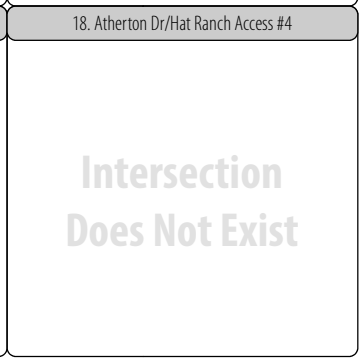











1 Study Intersection

Project Site

Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Stop Sign

Figure 2b

# Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions

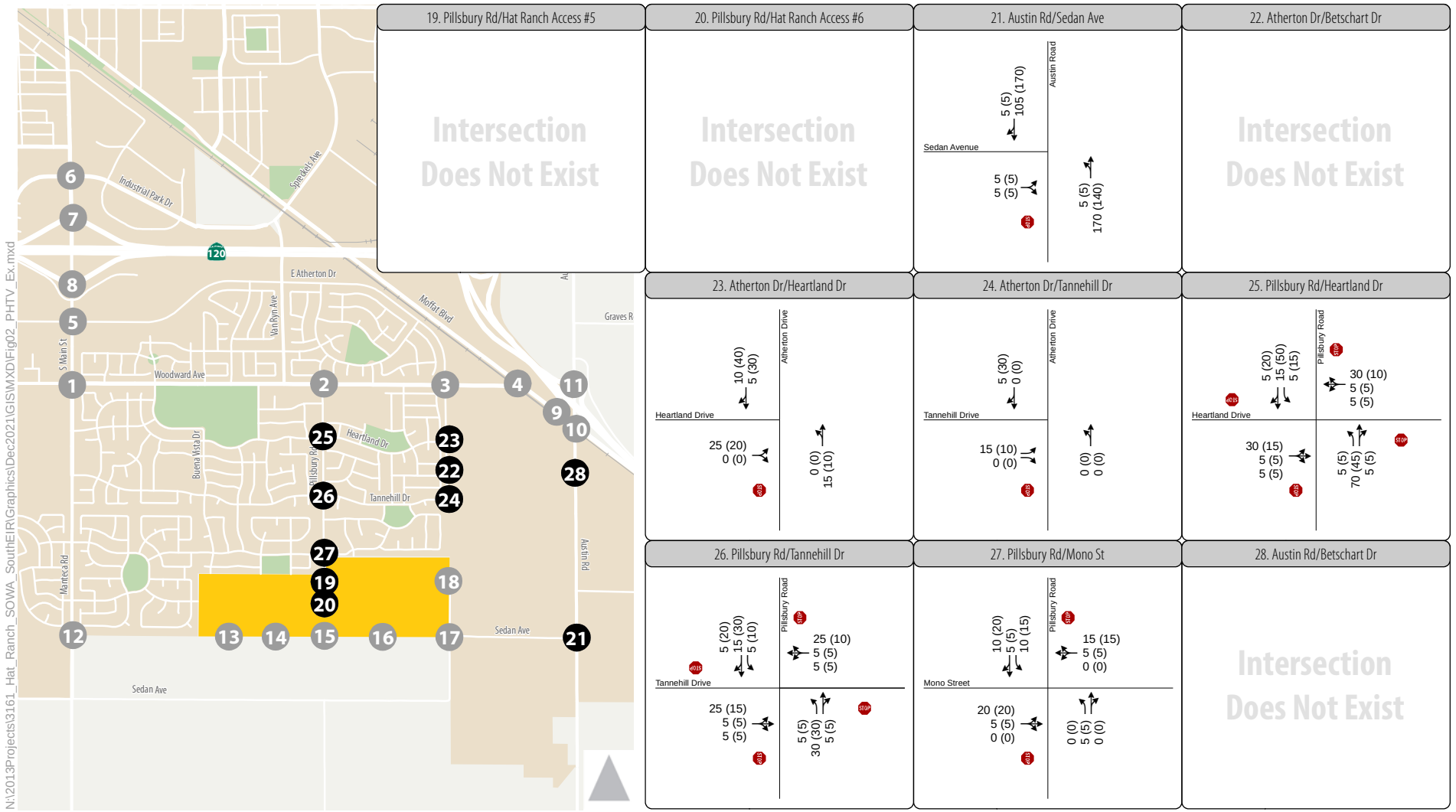



Figure 2c

# Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions

## 2.3 Travel Demand and VMT Forecasting

Fehr & Peers recently developed an Interim General Plan Year 2040 TFM for the City of Manteca, encompassing adjacent areas. The City of Manteca, Lathrop, and Ripon Travel Forecasting Model (TFM) is a modified version of the Three-County RTP/SCS Air Quality Conformity Model, but improved all major components of the model. The development of the TFM is described below.

### Baseline (Existing) TFM

The Base Year TFM incorporates Base Year land use data for dwelling units (single family and multi-family) and employment (food, retail, office, industrial, medical, government, and school), as well as the roadway network (lanes, speed, capacity class), based on existing (i.e., 2019) data. The TFM Trip generation rates were derived from the Institute of Transportation Engineer's Trip Generation Manual and include appropriate inbound/outbound trip generation rates for residential and employment land uses for AM and PM Peak Hour Conditions. The TFM was calibrated to reflect more accurate trip distribution for Internal-to-Internal Trips, Internal-to-External Trips, External-to-Internal Trips and External-to-External (i.e., Through) Trips based on a combination of the Caltrans Household Travel Survey (CHTS), the American Community Survey (ACS), and California Statewide Model to replicate the majority of vehicle trips to and from the west (San Francisco Bay Area) and a smaller percentage to and from the north (including Stockton and Sacramento) and lastly to and from the south.

### Interim General Plan Year 2040 Model

The Cumulative Year 2040 TFM was developed based on expected future land use and transportation network for the City of Manteca and adjacent areas in 2040. Similar to other cities in the Central Valley region, the City of Manteca is projecting large amount of growth for both housing and employment in the next 20 years. The Cumulative Year 2040 model scenario was developed in coordination with both Manteca and Lathrop to ensure that the TFM represents market-based demand for future growth in both housing (population) and employment, and therefore does not underestimate or overestimate traffic demand volumes. The City of Manteca 2040 land use inputs were developed based on the City of Manteca's approved and anticipated projects that will be constructed and occupied by year 2040. The City of Lathrop 2040 land use inputs were developed based on the City's historic rate of growth in households and employment for the past 5 years (2016 to 2020). The location of the growth was allocated across the city where future growth is anticipated, including the area west of I-5 and along the SR 120 corridor.

The TFM also includes projects identified in the City of Manteca Public Facilities Implementation Plan (PFIP) and the San Joaquin Council of Government (SJCOG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Project List for:

- Mainline Highway Improvements (Table 6-1 from SJCOG RTP);
- Interchange Improvements (Table 6-1 from SJCOG RTP); and
- Regional Roadway Improvements (Table 6-3 from SJCOG RTP).

Opening year construction dates have been identified in the SJCOG RTP/SCS.

It should be noted that these three major infrastructure projects rely on a combination of regional Measure K and local PFIP funds and are currently not fully funded.

The Base Year and Cumulative Year 2040 TFM was updated to detail out the street system in and near the Project site. The Base Year Plus Project and Cumulative Plus Project scenarios of the model incorporate the proposed Hat Ranch residential developments.

The traffic forecasting adjustment procedure known as the "difference method" was used to develop Cumulative Year (2040) AM and PM Peak Hour traffic forecasts. For a given intersection, this forecasting procedure is calculated as follows for every movement at the study intersections:

*Cumulative Year Forecast =*
*Existing Volume + (Cumulative Year TFM Volume – Base Year TFM Volume)*

In addition to developing intersection turning movement forecasts, the Base Year and Cumulative Year scenarios were used to develop trip distribution for Existing Plus Project and Cumulative Plus Project Conditions.

## 2.4 VMT Analysis Methodology

As previously described, VMT is used as the primary metric for significant transportation impacts. A proposed residential development would result in a significant transportation impact if it would:

1). Generate vehicle travel exceeding 15 percent below the established baseline VMT under existing (baseline) or cumulative conditions, or

2). Result in an increase in total VMT in the model area. This section describes the methodology used for the Baseline and Cumulative Vehicle Miles Traveled (VMT) Analysis.

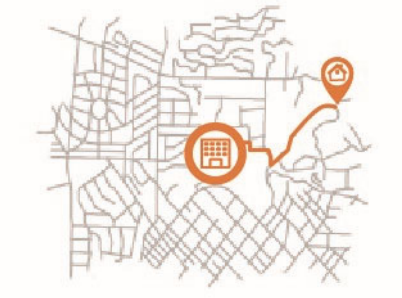
### VMT Defined

To help explain the different forms of VMT in Table 1 "Vehicle Miles Traveled", a basic lexicon and accompanying visual representation is provided below. These metrics are directly related to how land use and transportation infrastructure influence future vehicle travel.

### Baseline (Existing) TFM

The Base Year TFM developed for the General Plan Update was used to develop Baseline Average Weekday Daily home-based VMT per single family household, The Base Year TFM was also used to develop trip distribution under Existing Plus Project Conditions. The Base Year model represents 2019/2020 Pre-COVID AM peak hour, PM peak hour, and Average Daily Traffic conditions.

Baseline home-based VMT was calculated by taking the total home-based VMT generated by all households of the same housing category (single-family, multi-family, or age-restricted) in the City of Manteca and dividing it by the total number of households in the respective housing category.

| Table 1: Vehicle Miles Traveled Lexicon | | |
|---|---|---|
| Home-Based VMT per Resident | • All automobile (i.e., passenger cars and light-duty trucks) vehicle-trips are traced back to the residence of the trip-maker. Non-home-based trips are excluded |  |
| Home-based-work VMT per employee | • All automobile trips<br>All automobile trips between home and work are counted.<br>• Commercial vehicle trips are not included. |  |
| Total VMT in the model area | • All vehicle-trips (i.e., passenger and commercial vehicles) assigned on the network within a specific geographic boundary (i.e., model-wide). Vehicle volume on each link is multiplied by link distance. |  |

## Interim General Plan Year 2040 Model

The Cumulative Year 2040 TFM was used to estimate the Development Area's Cumulative Average Weekday Daily VMT.

Cumulative City of Manteca average home-based VMT was calculated by taking the total home-based VMT generated by all households of the same housing category (single-family, multi-family, or age-restricted) in the City of Manteca under Cumulative Conditions and dividing it by the total number of households in the respective housing category under Cumulative Conditions.

## 2.5 Intersection Analysis Methodology

Study intersections were analyzed using procedures and methodologies contained in the *Highway Capacity Manual – 6th Edition* (Transportation Research Board, 2016). These methodologies were applied using Synchro 10 software which considers traffic volumes, lane configurations, signal timings, signal coordination, and other pertinent parameters of intersection operations.

### Level of Service Definition

Study intersections were analyzed using the concept of Level of Service (LOS). LOS is a qualitative measure of traffic operating conditions whereby a letter grade, from A (the best) to F (the worst), is assigned. These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving. In general, LOS A represents free-flow conditions with no congestion, and LOS F represents severe congestion and delay under stop-and-go conditions. For signalized intersections, roundabouts and all way stop control intersections, LOS is based on the average delay experienced by all vehicles passing through the intersection. For side-street stop-controlled intersections, the delay and LOS for the overall intersection is reported along with the delay for the worst-case movement. **Table 2** displays the delay range associated with each LOS category for signalized and unsignalized intersections.

**Table 2: Intersection Level of Service (LOS) Criteria**

| LOS | Description (for Signalized Intersections) | Average Delay (Seconds/Vehicle) at Signalized Intersections | Average Delay (Seconds/Vehicle) at Unsignalized Intersections |
|---|---|---|---|
| A | Operations with very low delay occurring with favorable traffic signal progression and/or short cycle lengths. | < 10.0 | < 10.0 |
| B | Operations with low delay occurring with good progression and/or short cycle lengths. | > 10.0 to 20.0 | > 10.0 to 15.0 |
| C | Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear. | > 20.0 to 35.0 | > 15.0 to 25.0 |
| D | Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable. | > 35.0 to 55.0 | > 25.0 to 35.0 |
| E | Operations with high delay values indicating poor progression, and long cycle lengths. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay. | > 55.0 to 80.0 | > 35.0 to 50.0 |
| F | Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths. | > 80.0 | > 50.0 |

Note: LOS = level of service; V/C ratio = volume-to-capacity ratio
Source: Transportation Research Board, 2016

# 3. Vehicle Miles Traveled Analysis

As of Winter 2021/2022, the City of Manteca has not yet completed developing and adopting VMT thresholds that are based on SB 743 guidelines. Therefore, in order to determine potential SB 743 impacts to transportation, the following VMT analysis for the proposed Hat Ranch project was evaluated against the screening criteria in OPR's Technical Advisory. The following criteria is applicable to residential developments.

- Small projects – projects consistent with a Sustainable Communities Strategy and local general plan that generate or attract fewer than 110 trips per day.

- Projects near major transit stops – certain projects (residential, retail, office, or a mix of these uses) proposed within ½ mile of an existing major transit stop or an existing stop along a high-quality transit corridor.

- Affordable residential development – a project consisting of a high percentage of affordable housing may be a basis to find a less-than-significant impact on VMT.

- Projects in low VMT areas – residential and office projects that incorporate similar features (i.e., density, mix of uses, transit accessibility) as existing development in areas with low VMT will tend to exhibit similarly low VMT.

The proposed Hat Ranch Project is not eligible to be screened out based on the following:

- Does not constitute a small project because it is projected to generate 7,437 vehicle trips per day (Table 7 – Hat Ranch Project Trip Generation Analysis );
- Is not located within ½ mile of an existing major transit stop (Manteca Transit Routes #2 proves service on Woodward Avenue (Woodward community Park and near Atherton Drive) that are about one mile north); and
- Does not include a high percentage of affordable housing units.

It should also be noted that the City of Manteca has not developed low VMT areas; therefore, this criterion is not applicable at this time. Therefore, a detailed VMT analysis was conducted using methodology discussed in Chapter 2 of this report based on the following significance criteria:

- The proposed development would result in a significant impact under Existing Plus Project Conditions if it were to generate VMT per single family household exceeding 88.1 (15 percent below the established Baseline VMT of 103.7); and
- The proposed development would result in a significant impact under Cumulative Plus Project Conditions if it were to generate VMT per single family household exceeding 77.7 (15 percent below the established Cumulative VMT of 91.4).

**Table 3** presents the established Baseline Citywide VMT per single family residential household and the Hat Ranch Project VMT per household. As displayed, the proposed Hat Ranch Project would generate an estimated average of 114.6 VMT per single family household, resulting in a total daily project VMT of 84,575. The development is anticipated to generate a total of 6,967 daily trips, indicating the average trip length would be approximately 12.1 miles.

The Hat Ranch Project Baseline (Existing) Daily VMT of 114.6 represents an approximately 10 percent increase from Baseline conditions. Because the development would generate vehicle travel exceeding 15 percent below the established baseline, this is a **significant transportation impact**.

| **Table 3: Project Vehicle Miles Traveled Analysis (Existing Conditions)** | | | |
|---|---|---|---|
| **Citywide Baseline (Existing) VMT Per Single Family Household** | **Hat Ranch Project Baseline (Existing) VMT Per Single Family Household** | **VMT Reduction / Increase (-/+)** | **Percentage Reduction / Increase (-/+)** |
| 103.7 | 114.6 | +10.9 | +10 % |
| Source: City of Manteca Travel Demand Model - Fehr & Peers, 2021 | | | |

**Table 4** presents the projected Cumulative (2040) Citywide VMT per single family residential household and the Hat Ranch Project Cumulative (2040) VMT per household. As displayed, the proposed Hat Ranch Project would generate an estimated average of 83.0 VMT per single family household, resulting in a total daily project VMT of 61,254. The development is anticipated to generate a total of 6,967 daily trips, indicating the average trip length would be approximately 8.8 miles. The reduction in both Citywide and Project VMT are due to the fact that in the Cumulative Year, the number of jobs and the amount of commercial, retail, and recreational development in the City is anticipated to increase and residents would be able to travel shorter distances to access these types of land uses.

The Hat Ranch Project Cumulative (2040) Daily VMT of 83.0 represents an approximately 6 percent increase from Cumulative (2040) conditions. Because the development would generate vehicle travel exceeding 15 percent below the established baseline, this is a **significant transportation impact**.

| Table 4: Project Vehicle Miles Traveled Analysis (Cumulative 2040 Conditions) | | | |
|---|---|---|---|
| **Citywide Cumulative (2040) VMT Per Single Family Household** | **Hat Ranch Project Cumulative (2040) VMT Per Single Family Household** | **VMT Reduction / Increase (-/+)** | **Percentage Reduction / Increase (-/+)** |
| 77.7 | 83.0 | + 5.3 | + 6.8% |
| Source: City of Manteca Travel Demand Model - Fehr & Peers, 2021 | | | |

# Mitigation Measures for the Residential Hat Ranch Project

The VMT generation of a project is largely dictated by the combination of land use proximity and transportation infrastructure. Transportation Demand Management (TDM) strategies are designed to increase the transportation system efficiency and reduce vehicle demand on the multi-modal transportation system. Common TDM strategies are based on discouraging single-occupancy vehicle travel; encouraging transit, carpooled, and active modes of travel (i.e., bicycling, walking, scooter); shifting travel patterns from congested peak to less congested off-peak hours, and proximity to closer complimentary destinations. But most importantly, the biggest of effect of TDM strategies on VMT derive from regional policies related to land use location efficiency, jobs/housing/activity balance, and infrastructure investments that support transit, walking, and bicycling. Of these strategies, only a few are likely to be effective in a suburban or rural setting such as the City of Manteca.

In August 2021, the California Air Pollution Control Officers Association (CAPCOA) released the *Draft Handbook for Analyzing Greenhouse Gas (GHG) Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity*[1] (GHG Handbook). Mitigation Measure **MM-TRA-1** summarizes transportation measures with VMT-reducing benefits that may be applicable at project or community level in the City of Manteca. However, it should be noted that some of these strategies such as increased land use density or diversity may not be feasible for the project site because it would change the nature of the project.

**MM-TRA-1 : Implement VMT mitigation options**

Potential measures for individual development include, but are not limited to:

- Increase residential density;
- Limit residential parking supply;
- Unbundle residential parking cost from property cost;
- Provide access to transit (Transit Oriented Development);
- Improve street connectivity;
- Provide ride-share program;
- Implement subsidized or discounted transit program;
- Provide end-of-trip bicycle facilities;

[1] http://www.airquality.org/ClimateChange/Documents/Handbook%20Public%20Draft_2021-Aug.pdf

- Provide community-based travel planning;
- Implement market price public on-street parking;
- Provide pedestrian network improvement;
- Construct or improve bike facility;
- Construct or improve bike boulevard;
- Expand bikeway network;
- Implement conventional or electric carshare program;
- Implement pedal or electric bikeshare program;
- Implement scooter-share program;
- Extend transit network coverage or hours;
- Increase transit service frequency;
- Implement transit-supportive roadway treatments; and
- Reduce transit fares.

It should be noted that two recent studies that included an evaluation of VMT per capita trends in California.

- *2018 Progress Report, California's Sustainable Communities and Climate Protection Act*, California Air Resources Board, November 2018[2] (Progress Report).
- *California Air Resources Board Improved Program Measurement Would Help California Work More Strategically to Meet Its Climate Change Goals*, Auditor of the State of California, February 2021[3] (Audit Report).

The Progress Report measures the effect of SB 375 revealing that VMT and GHG per capita increased in California between 2010 and 2016 and are trending upward.

The Audit Report is a more recent assessment of California's Air Resources Board GHG reduction programs, which also found that VMT and its associated GHG emissions were trending upward through 2018. Per the Audit Report, the state is not on track to achieve 2030 GHG reduction goals, and emissions from transportation have not been declining as anticipated.

The monitoring of statewide VMT performance noted above indicates that the state needs to take further action to meet its own VMT and GHG reduction goals. Doing so would alleviate the need for further actions by local agencies. To date, the state has not increased the cost of driving, made driving less convenient, or reduced the barriers or constraints that prevent more efficient use of vehicles and greater use of transit, walking, and bicycling.

The City of Manteca can reduce future VMT generation through the TDM actions listed above, especially those related to increasing land use density and increasing multi-modal accessibility to key destinations. However, given the suburban land use context of the City the effectiveness of these TDM measures cannot

[2] https://ww2.arb.ca.gov/resources/documents/tracking-progress
[3] http://auditor.ca.gov/pdfs/reports/2020-114.pdf

be guaranteed to reduce the project VMT or total VMT impacts to a less-than-significant level. Therefore, the proposed Hat Ranch Project VMT impact would remain **significant and unavoidable**.

In addition to transportation impacts, VMT is one of the many key inputs in quantifying other environmental impacts related to air quality, greenhouse gases, and energy. Analysis and mitigation measures related to each of these topics are discussed in a dedicated chapter in this EIR.

# 4. Existing Conditions

This chapter presents the existing bicycle, pedestrian, and transit facilities as well as intersection operations under Existing Conditions.

## 4.1 Existing Bicycle and Pedestrian Facilities

The City of Manteca Active Transportation Plan (adopted September 1, 2020) defines the following bicycle facility types:

### Class I Bikeway: Bike Path

Bike paths, often referred to as shared-use paths or trails, are off-street facilities that provide exclusive use for non-motorized travel, including bicyclists and pedestrians. Bike paths have minimal cross flow with motorists and are typically located along landscaped corridors.

### Class II Bikeway: Bike Lane

Class II bike lanes are on-street facilities that use striping, stencils, and signage to denote preferential or exclusive use by bicyclists. On-street bike lanes are located adjacent to motor vehicle traffic.

### Class III Bikeway: Bike Route

Class III bike routes are streets with signage and optional pavement markings where bicyclists travel on the shoulder or share a lane with motor vehicles. Class III bike routes are utilized on low-speed and low-volume streets to connect bike lanes or paths along corridors that do not provide enough space for dedicated lanes.

### Class III Bikeway: Bicycle Boulevard

Class III bicycle boulevards are similar to Class III bike routes, in that they are primarily utilized on low-speed and low-volume streets, and can close important gaps in the bicycle network where there may be insufficient space for dedicated lanes. Bicycle boulevards provide further enhancements to bike routes to encourage slow speeds and discourage non-local vehicle traffic via traffic diverters, chicanes, traffic circles, and/or speed tables.

### Class IV Bikeway: Separated Bikeway

Class IV separated bikeways, commonly known as cycle tracks, are physically separated bicycle facilities that are distinct from the sidewalk and designed for exclusive use by bicyclists. They are located within the street right-of-way, but provide comfort similar to Class I bike paths.

**Figure 3** presents the existing bicycle and pedestrian network in the study area. As displayed, sidewalks are present along both the east and west sides of Pillsbury Road from Woodward Avenue to the north and Mono Street to the south. South of Mono Street, sidewalks are provided on the west side of Pillsbury Road to the northern boundary of the Hat Ranch Project Site. On Main Street / Manteca Road, sidewalks are provided on the west side of the roadway from Woodward Avenue to south of Rina Drive. Immediately north and west of the Hat Ranch Project site, sidewalks are provided in the adjacent residential subdivisions and along internal roadways within those subdivisions.

Class II bike lanes are also present along segments of Mono Street, Tannehill Drive, Heartland Drive, Buena Vista Drive, Pear, Ivory Lace Avenue and Woodbine Avenue. Further north of the project site, Class I multi-use paths are provided on the north (east) side of Atherton Drive and west side of Wellington Avenue.

## 4.2 Existing Transit Facilities

**Figure 4** presents the existing transit network in the study area. Manteca Transit operates a fixed-route and Dial-a-Ride bus service with stops throughout the City. Route 2 provides weekday fixed route service to the study area on eastbound Woodward Avenue. The nearest stop is approximately one half mile north of the proposed project and is located at the Woodward Community Park (near Wellington Avenue) and at the intersection of Woodward Avenue / Memorial Lane (west of Atherton Drive).

In addition to Manteca Transit, the San Joaquin Regional Transportation District provides both weekday and weekend service to the City via the Manteca Transit Center located at the south-east corner of the Main Street / Moffat Boulevard intersection.

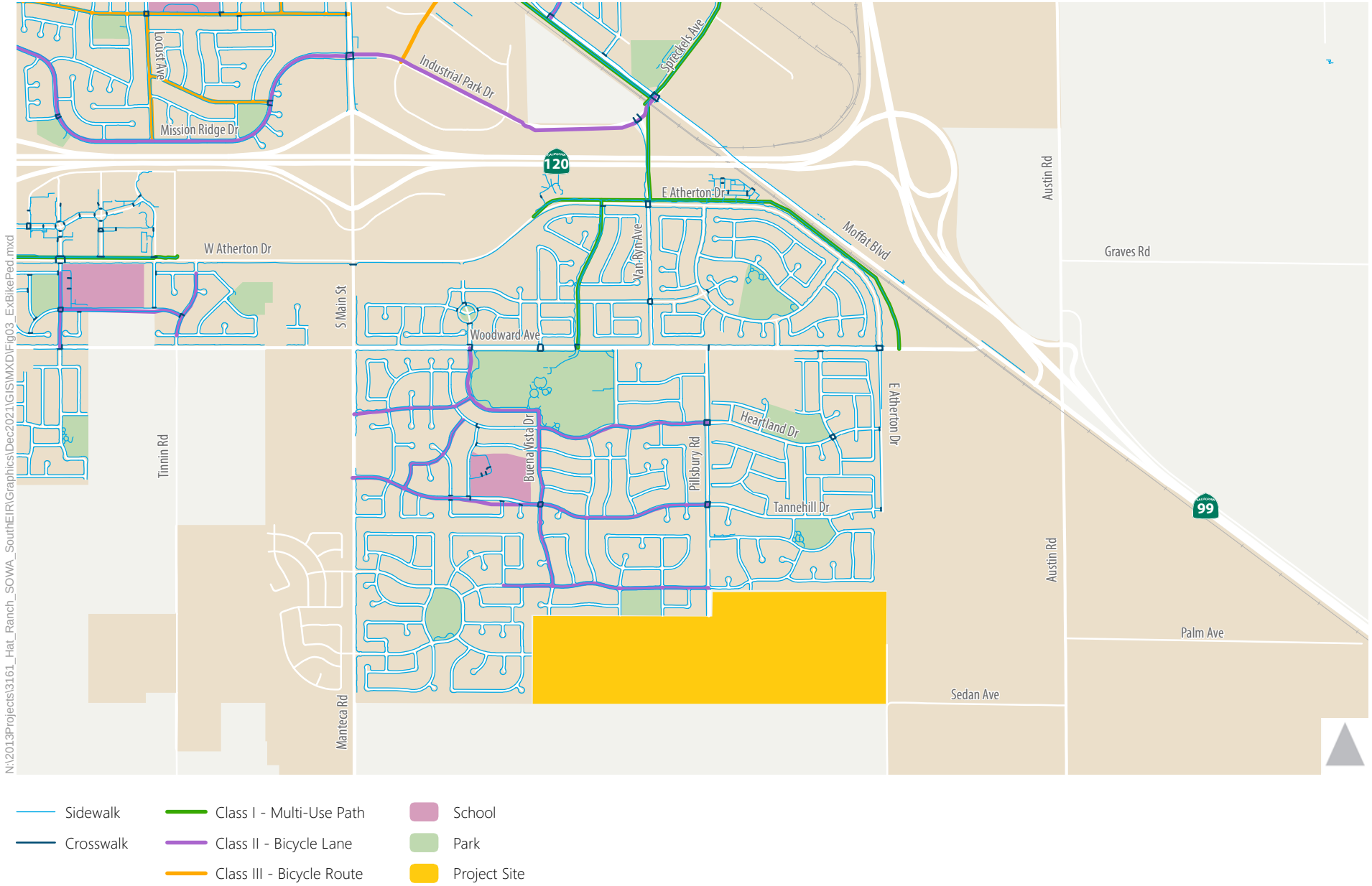
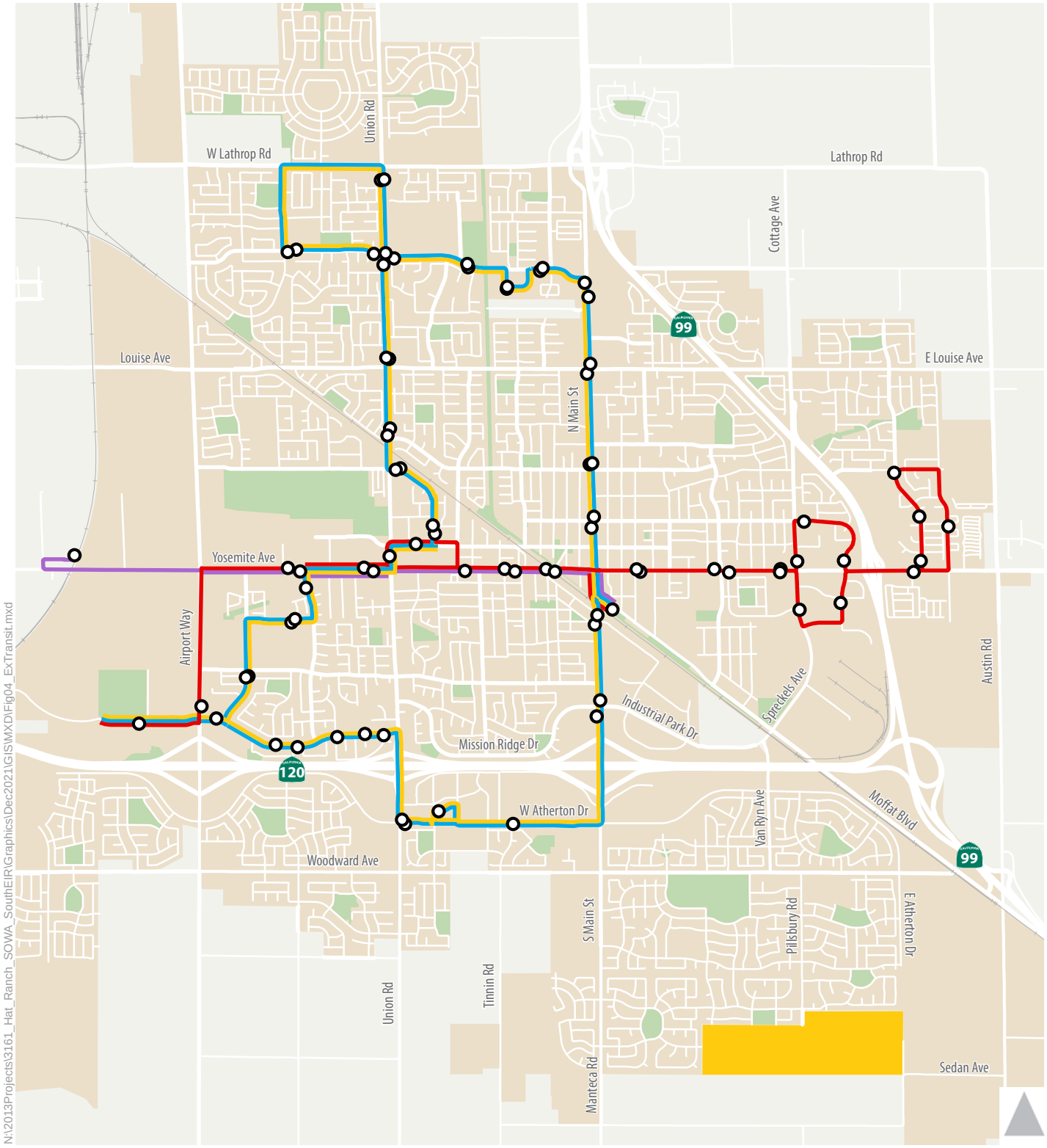



Figure 3

## Existing Bicycle and Pedestrian Facilities




Source: City of Manteca Geographic Information Systems, April 2019

Figure 4

## Existing Transit Facilities

## 4.3 Existing Intersection Operations

**Table 5** displays the existing AM and PM peak hour operations at the study intersections. Technical calculations are displayed in **Appendix A (AM)** and **Appendix B (PM)**.

| Table 5: Intersection Operations – Existing Conditions | | | | |
|---|---|---|---|---|
| **Intersection** | **Control Type** | **Peak Hour** | **Delay[1]** | **LOS** |
| 1. Woodward Avenue / Main Street | AWSC | AM<br>PM | 15.9<br>26.7 | C<br>D |
| 2. Woodward Avenue / Pillsbury Road | AWSC | AM<br>PM | 8.2<br>10.4 | A<br>B |
| 3. Woodward Avenue / Atherton Drive | AWSC | AM<br>PM | 9.4<br>8.7 | A<br>A |
| 4. Woodward Avenue / Moffat Boulevard | SSSC | AM<br>PM | 3.9 (12.5)<br>3.2 (14.9) | A (B)<br>A (B) |
| 5. Main Street / Atherton Drive | Signal | AM<br>PM | 17.6<br>18.6 | B<br>B |
| 6. Main Street / Mission Ridge Drive / Industrial Park Drive | Signal | AM<br>PM | 25.6<br>35.3 | C<br>D |
| 7. SR 120 WB Ramps / Main Street; | Signal | AM<br>PM | 12.3<br>11.1 | B<br>B |
| 8. SR 120 EB Ramps / Main Street | Signal | AM<br>PM | 22.3<br>26.8 | C<br>C |
| 9. SR 99 SB Off-Ramp / Moffat Boulevard | SSSC | AM<br>PM | 1.2 (14.6)<br>**11.5 (61.5)** | A (B)<br>**B (F)** |
| 10. Moffat Boulevard / Austin Road / SR 99 SB On-Ramp | AWSC | AM<br>PM | 30.3<br>**121.1** | D<br>**F** |
| 11. Austin Road / SR 99 NB Ramps | SSSC | AM<br>PM | 18.4 (37.9)<br>**20.8 (51.5)** | A (E)<br>**C (F)** |

Notes:
AWSC = All-Way Stop Control; SSSC = Side-Street Stop Control; LOS = Level of Service
[1] For signalized intersections and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side street stop-controlled intersections, intersection delay is reported in seconds per vehicle for the overall intersection and (worst-case) movement. Intersection delay is calculated based on the procedures and methodology contained in the Highway Capacity Manual 6th Edition (Transportation Research Board, 2016).
Source: Fehr & Peers, 2021

| Table 5 (Continued): Intersection Operations – Existing Conditions | | | | |
|---|---|---|---|---|
| **Intersection** | **Control Type** | **Peak Hour** | **Delay[1]** | **LOS** |
| 12. Antone Raymus Parkway / Manteca Road (Main Street) | Does Not Exist | | | |
| 13. Antone Raymus Parkway / Project Intersection #1 | Does Not Exist | | | |
| 14. Antone Raymus Parkway / Project Intersection #2 | Does Not Exist | | | |
| 15. Antone Raymus Parkway / Pillsbury Road | Does Not Exist | | | |
| 16. Antone Raymus Parkway / Project Intersection #3 | Does Not Exist | | | |
| 17. Antone Raymus Parkway / Atherton Drive | Does Not Exist | | | |
| 18. Project Intersection #4 / Atherton Drive | Does Not Exist | | | |
| 19. Project Intersection #5 / Pillsbury Road | Does Not Exist | | | |
| 20. Project Intersection #6 / Pillsbury Road | Does Not Exist | | | |
| 21. Sedan Avenue / Austin Road | SSSC | AM<br>PM | 0.4 (9.6)<br>0.4 (10.0) | A (B)<br>A (B) |
| 22. Betschart Drive / Atherton Drive | Does Not Exist | | | |
| 23. Heartland Drive / Atherton Drive | SSSC | AM<br>PM | 4.0 (8.7)<br>1.8 (8.9) | A (A)<br>A (A) |
| 24. Tannehill Drive / Atherton Drive | SSSC | AM<br>PM | 6.5 (8.6)<br>2.2 (8.6) | A (A)<br>A (A) |
| 25. Heartland Drive / Pillsbury Road | AWSC | AM<br>PM | 7.6<br>7.7 | A<br>A |
| 26. Tannehill Drive / Pillsbury Road | AWSC | AM<br>PM | 7.3<br>7.4 | A<br>A |
| 27. Mono Street / Pillsbury Road | AWSC | AM<br>PM | 6.3<br>5.7 | A<br>A |

Notes:
AWSC = All-Way Stop Control; SSSC = Side-Street Stop Control; LOS = Level of Service
[1] For signalized intersections and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side street stop-controlled intersections, intersection delay is reported in seconds per vehicle for the overall intersection and (worst-case) movement. Intersection delay is calculated based on the procedures and methodology contained in the Highway Capacity Manual 6th Edition (Transportation Research Board, 2016).
Source: Fehr & Peers, 2021

# 5. Existing Plus Project Conditions

This chapter presents the results of the Existing Plus Project transportation impact analysis.

## 5.1 Project Trip Generation

**Table 6** presents the trip generation rates used to estimate the trip generating characteristics of the proposed Hat Ranch Project for Weekday Daily, AM Peak Hour, and PM Peak Hour Conditions. The estimated vehicle trips are based on trip rates from the *Trip Generation Manual 10th Edition* (Institute of Transportation Engineers, 2018) and the City of Manteca Travel Forecasting Model (TFM).

**Table 6: Hat Ranch Project Trip Generation Rates**

| Land Use | Quantity | Daily | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|
| | | | In | Out | Total | In | Out | Total |
| Single-Family Detached Housing (ITE Land Use Code 210) | 738 DU | 9.44 | 0.18 | 0.56 | 0.74 | 0.63 | 0.36 | 0.99 |
| Ripon Unified School District K-8 School Site (ITE Land Use Code 520) | Maximum of 675 students | 1.95 | 0.35 | 0.30 | 0.65 | 0.08 | 0.09 | 0.17 |

Notes:
Trip generation is based on trip rates published in *Trip Generation Manuel 10th Edition* (Institute of Transportation Engineers, 2017).
Source: Fehr & Peers, 2021

**Table 7** presents the vehicle trips generated by the proposed Hat Ranch Project for Weekday Daily, AM Peak Hour, and PM Peak Hour Conditions. As shown in Table 6, with 738 single family dwelling units and a K-8 school located within the Hat Ranch Project site, a reduction for school related trips was taken to represent students walking / biking and parents dropping off and picking up kids on their way to work or other activities (i.e. a linked vehicle trip). The proposed Hat Ranch Project is projected to generate 7,428 daily vehicle trips, 701 AM Peak Hour (with 217 inbound and 484 outbound), and 771 PM Peak Hour (with 484 inbound and 287 outbound) vehicle trips.

| Table 7: Hat Ranch Project Trip Generation Analysis | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Land Use | Quantity | Daily | AM Peak | | | PM Peak | | |
| | | | Total | In | Out | Total | In | Out |
| Single-Family Detached Housing (ITE Land Use Code 210) | 738 DU | 6,967 | 547 | 134 | 413 | 731 | 465 | 266 |
| Ripon Unified School District K-8 School Site (ITE Land Use Code 520) | 675 students | 1,316 | 439 | 236 | 203 | 115 | 54 | 61 |
| Reduction for School Related Trips (Walk, Bike and Linked Trips) | | -855 | -285 | -153 | -132 | -75 | -35 | -40 |
| Net New Vehicle Trip Generation | | 7,428 | 701 | 217 | 484 | 771 | 484 | 287 |
| Notes:<br>Trip generation is based on trip rates published in *Trip Generation Manuel 10th Edition* (Institute of Transportation Engineers, 2017).<br>Source: Fehr & Peers, 2021 | | | | | | | | |

## 5.2 Project Trip Distribution

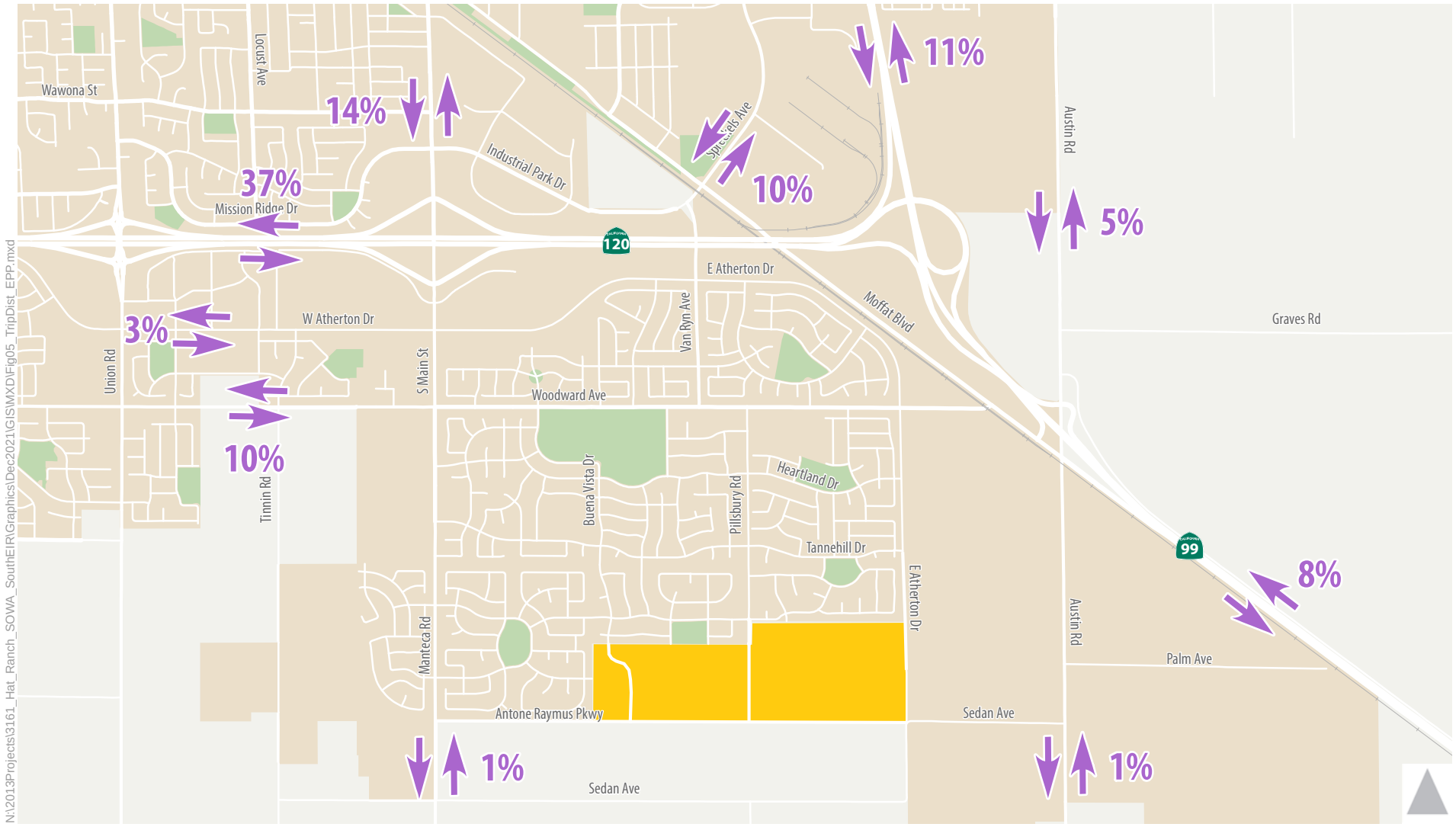
Project trips were distributed throughout the study area based the location of roadways that would be constructed by the Hat Ranch Project, existing directional patterns and output from the base year Manteca Travel Demand Forecasting Model. **Figure 5** presents the trip distribution under Existing Plus Project conditions.

**Figures 6a, 6b, and 6c** displays the traffic volumes under Existing Plus Project conditions. Figure 6a presents intersections #1 through #9, Figure 6b presents intersections #9 through #128, and Figure 6c presents intersections #19 through #28.

## 5.3 Existing Plus Project Intersection Operations

Primary access to the proposed development project would be provided by five access intersections located Antone Raymus Parkway (3), Atherton Drive (1) and Pillsbury Road (2), as displayed on **Figure 7**.

**Table 8** displays the AM and PM peak hour intersection operations under Existing Plus Project conditions. Technical calculations are displayed in **Appendix C (AM)** and **Appendix D (PM)**.

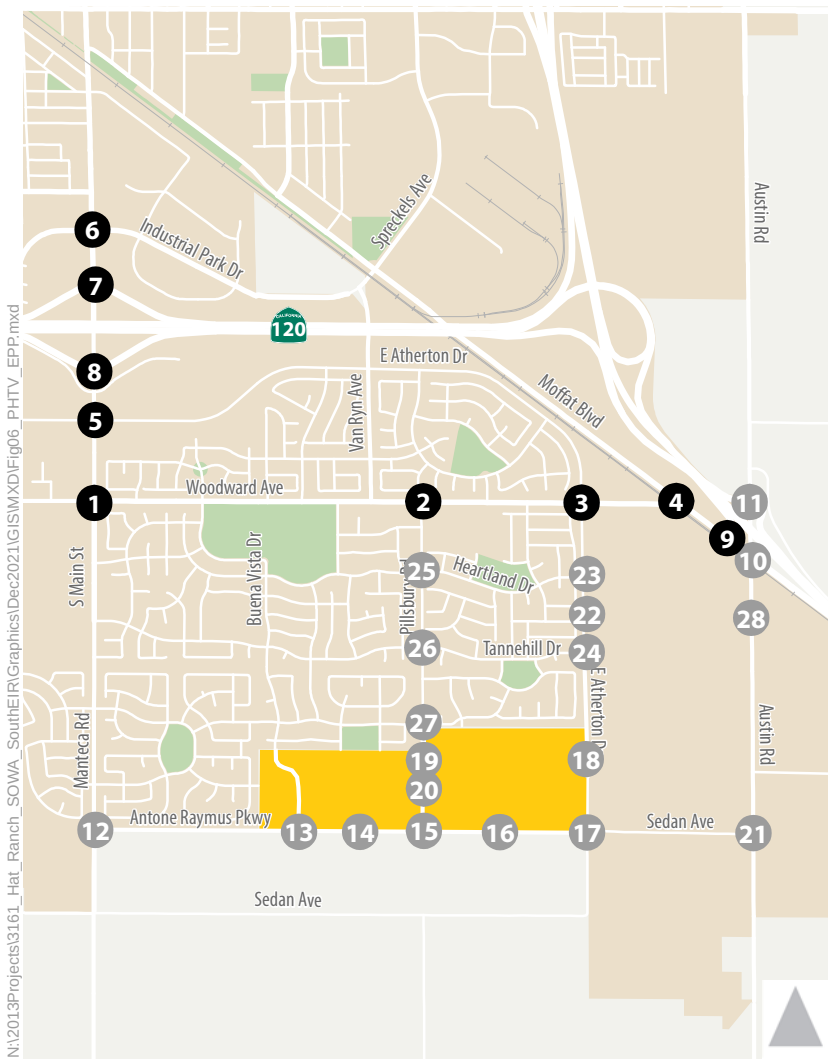


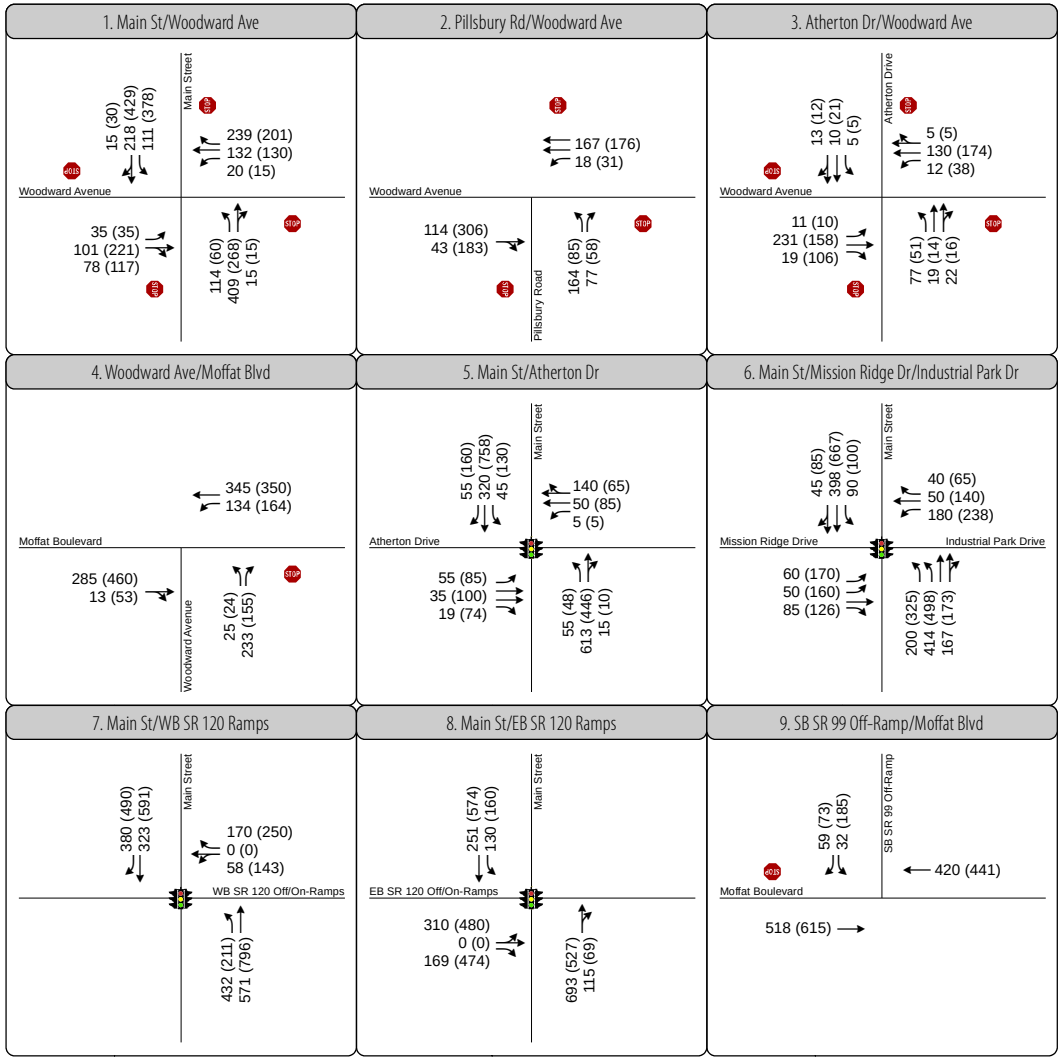

XX% Trip Distribution Percentage

Project Site

Figure 5

## Trip Distribution - Existing Plus Project Conditions




1 Study Intersection

Project Site

Turn Lane

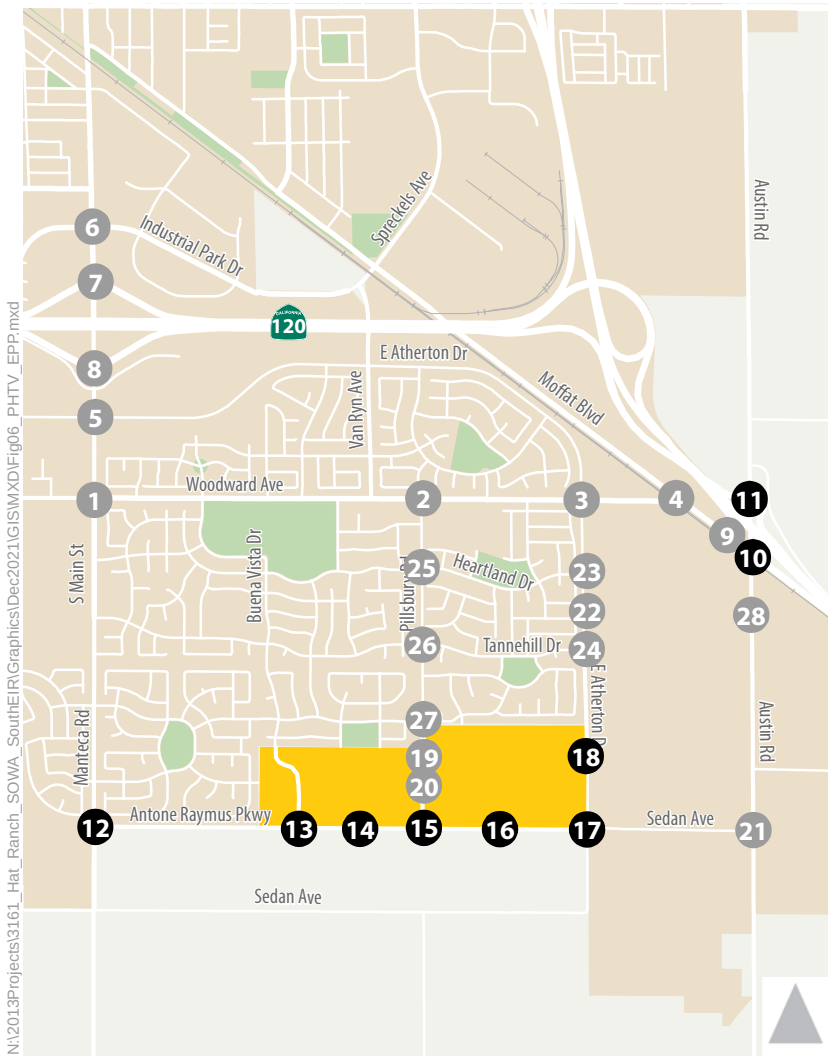
AM (PM) Peak Hour Traffic Volume

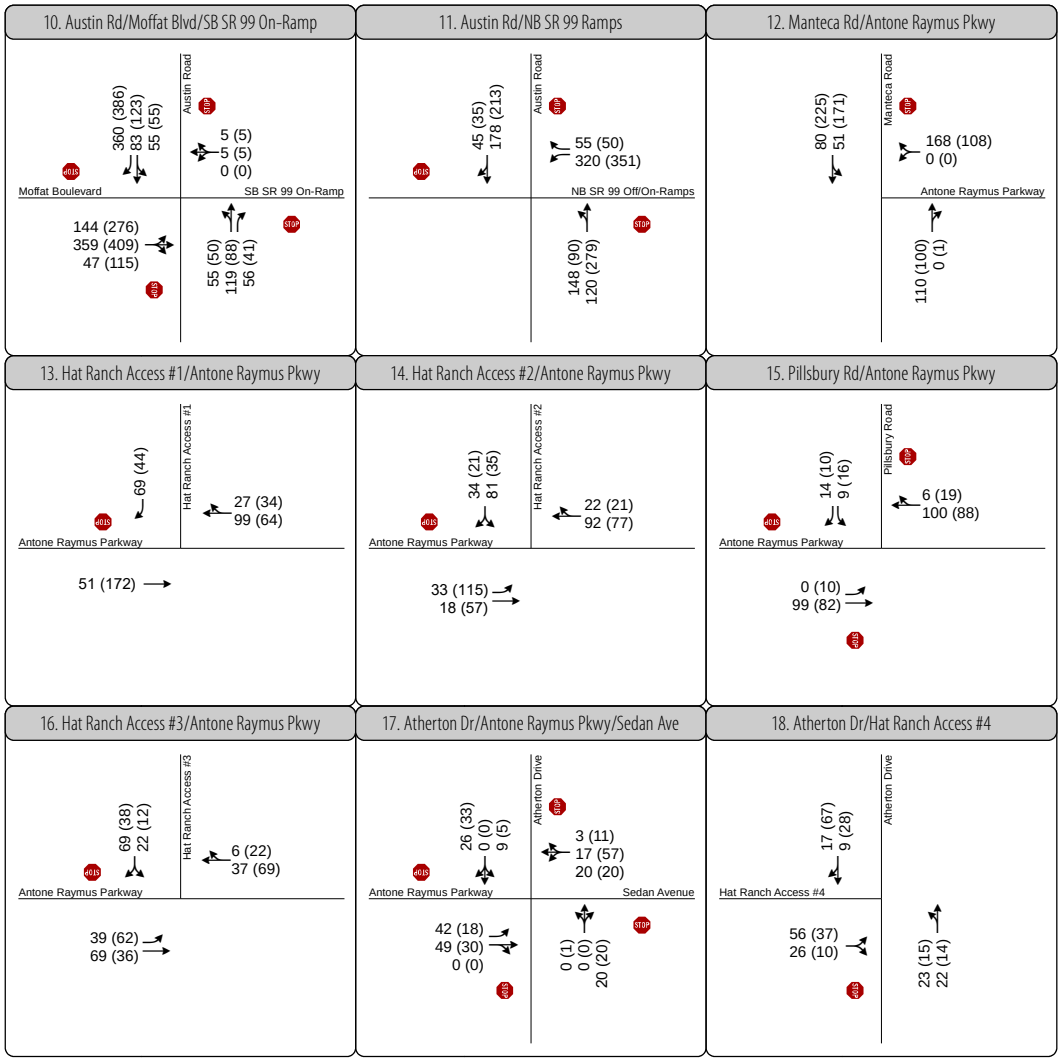
Traffic Signal

Stop Sign

Figure 6a

# Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions

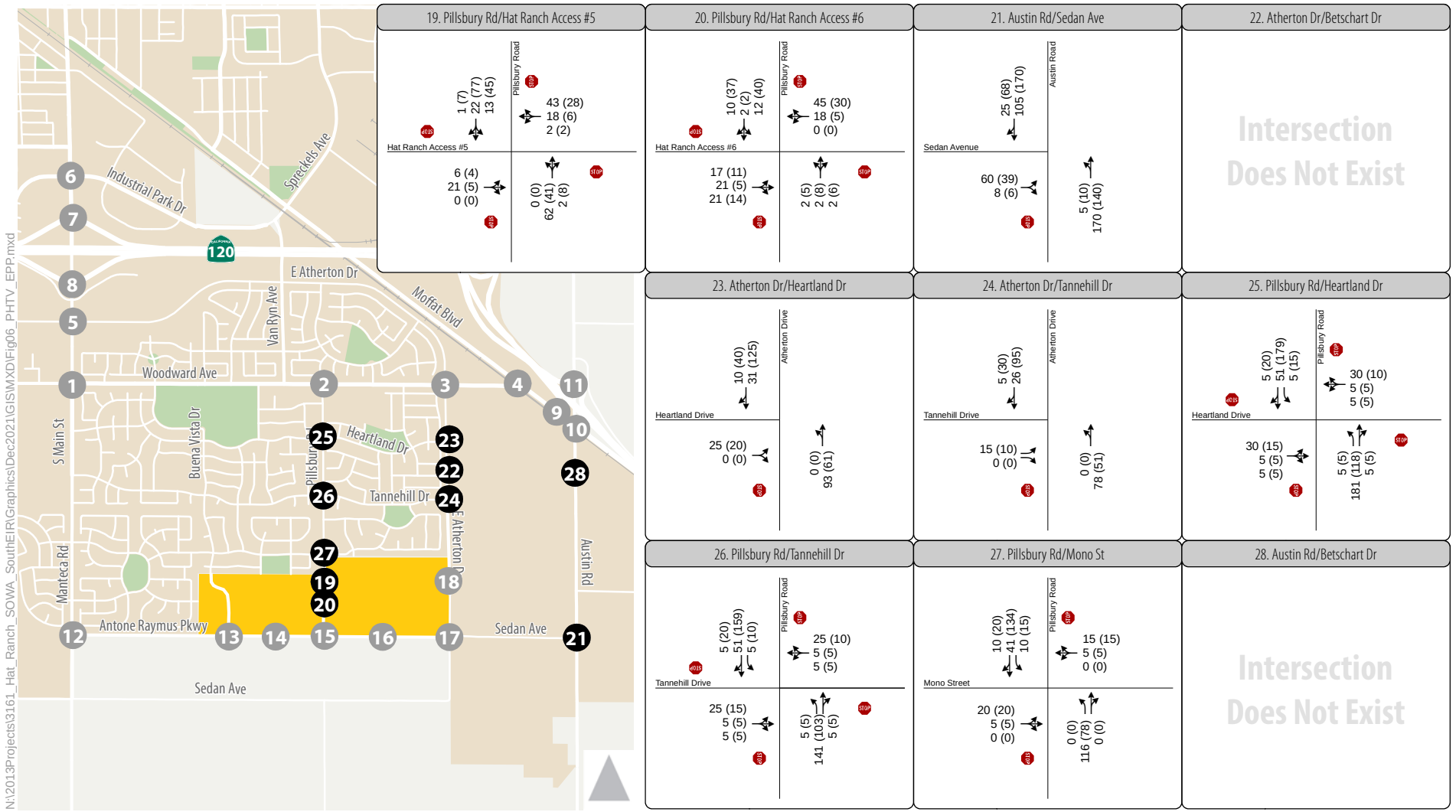



1 Study Intersection
Project Site
Turn Lane
AM (PM) Peak Hour Traffic Volume
Traffic Signal
Stop Sign

Figure 6b

# Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions




1 Study Intersection
Project Site
Turn Lane
AM (PM) Peak Hour Traffic Volume
Traffic Signal
Stop Sign

Figure 6c

# Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions

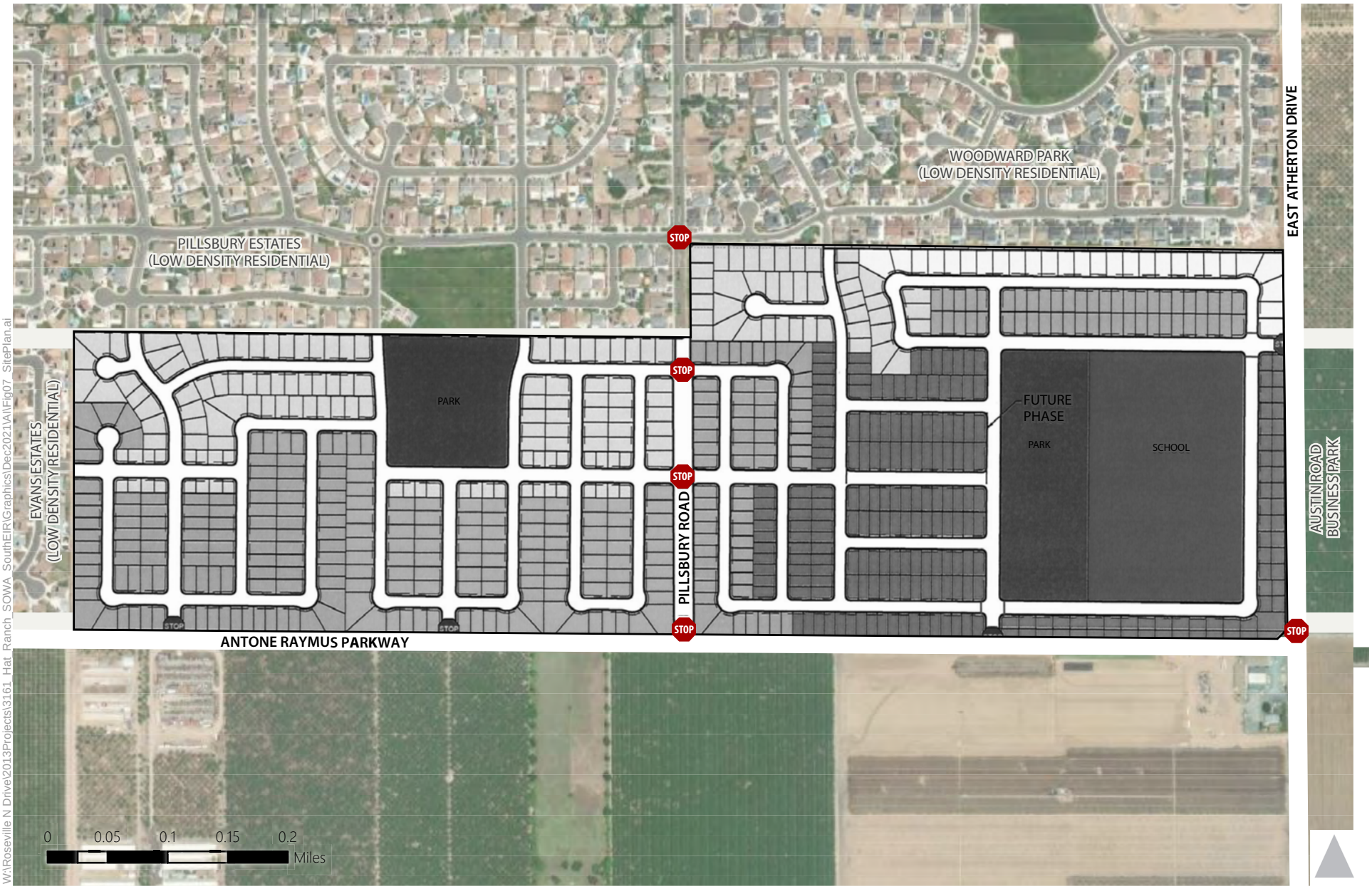



Figure 7

## Project Site Plan

| Table 8: Intersection Operations – Existing + Project Conditions | | | | | | |
|---|---|---|---|---|---|---|
| Intersection | Control Type | Peak Hour | Existing Conditions | | Existing Plus Project Conditions | |
| | | | Delay[1] | LOS | Delay[1] | LOS |
| 1. Woodward Avenue / Main Street | AWSC | AM<br>PM | 15.9<br>26.7 | C<br>D | **47.3**<br>**113.4** | **E**<br>**F** |
| 2. Woodward Avenue / Pillsbury Road | AWSC | AM<br>PM | 8.2<br>10.4 | A<br>B | 9.5<br>18.1 | A<br>C |
| 3. Woodward Avenue / Atherton Drive | AWSC | AM<br>PM | 9.4<br>8.7 | A<br>A | 10.0<br>9.3 | A<br>A |
| 4. Woodward Avenue / Moffat Boulevard | SSSC | AM<br>PM | 3.9 (12.5)<br>3.2 (14.9) | A (B)<br>A (B) | 4.4 (13.5)<br>3.8 (16.9) | A (B)<br>A (C) |
| 5. Main Street / Atherton Drive | Signal | AM<br>PM | 17.6<br>18.6 | B<br>B | 22.8<br>39.5 | C<br>D |
| 6. Main Street / Mission Ridge Drive / Industrial Park Drive | Signal | AM<br>PM | 25.6<br>35.3 | C<br>D | 25.4<br>36.0 | C<br>D |
| 7. SR 120 WB Ramps / Main Street; | Signal | AM<br>PM | 12.3<br>11.1 | B<br>B | 31.9<br>16.4 | C<br>B |
| 8. SR 120 EB Ramps / Main Street | Signal | AM<br>PM | 22.3<br>26.8 | C<br>C | **61.2**<br>48.0 | **E**<br>D |
| 9. SR 99 SB Off-Ramp / Moffat Boulevard | SSSC | AM<br>PM | 1.2 (14.6)<br>**11.5 (61.5)** | A (B)<br>**B (F)** | 1.3 (14.9)<br>**12.8 (65.3)** | A (B)<br>**B (F)** |
| 10. Moffat Boulevard / Austin Road / SR 99 SB On-Ramp | AWSC | AM<br>PM | 30.3<br>**121.1** | D<br>**F** | **37.3**<br>**131.0** | **E**<br>**F** |
| 11. Austin Road / SR 99 NB Ramps | SSSC | AM<br>PM | 18.4 **(37.9)**<br>**20.8 (51.5)** | A **(E)**<br>**C (F)** | **27.4 (60.1)**<br>**40.9 (>100)** | **D (F)**<br>**E (F)** |

Notes: **Bold** indicates unacceptable operations.
AWSC = All-Way Stop Control; SSSC = Side-Street Stop Control; LOS = Level of Service
[1] For signalized intersections, roundabouts, and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side street stop-controlled intersections, intersection delay is reported in seconds per vehicle for the overall intersection and (worst-case) movement. Intersection delay is calculated based on the procedures and methodology contained in the Highway Capacity Manual 6th Edition (Transportation Research Board, 2016).
[2] Intersection was analyzed as a SSSC under Existing Conditions and a roundabout under Existing Plus Project conditions.
Source: Fehr & Peers, 2021

| Table 8 (Continued): Intersection Operations – Existing + Project Conditions | | | | | | |
|---|---|---|---|---|---|---|
| **Intersection** | **Control Type** | **Peak Hour** | **Existing Conditions** | | **Existing Plus Project Conditions** | |
| | | | **Delay[1]** | **LOS** | **Delay[1]** | **LOS** |
| 12. Antone Raymus Parkway / Manteca Road (Main Street) | SSSC | AM<br>PM | Does Not Exist | | 5.0 (9.8)<br>3.9 (9.4) | A (A)<br>A (A) |
| 13. Antone Raymus Parkway / Project Intersection #1 | SSSC | AM<br>PM | Does Not Exist | | 2.6 (9.2)<br>1.2 (8.9) | A (A)<br>A (A) |
| 14. Antone Raymus Parkway / Project Intersection #2 | SSSC | AM<br>PM | Does Not Exist | | 5.1 (10.3)<br>4.6 (11.1) | A (B)<br>A (B) |
| 15. Antone Raymus Parkway / Pillsbury Road | AWSC | AM<br>PM | Does Not Exist | | 8.1<br>8.0 | A<br>A |
| 16. Antone Raymus Parkway / Project Intersection #3 | SSSC | AM<br>PM | Does Not Exist | | 4.7 (9.2)<br>3.9 (9.3) | A (A)<br>A (A) |
| 17. Antone Raymus Parkway / Atherton Drive | AWSC | AM<br>PM | Does Not Exist | | 7.6<br>7.5 | A<br>A |
| 18. Project Intersection #4 / Atherton Drive | SSSC | AM<br>PM | Does Not Exist | | 6.0 (9.2)<br>3.2 (9.3) | A (A)<br>A (A) |
| 19. Project Intersection #5 / Pillsbury Road | AWSC | AM<br>PM | Does Not Exist | | 7.4<br>7.6 | A<br>A |
| 20. Project Intersection #6 / Pillsbury Road | AWSC | AM<br>PM | Does Not Exist | | 7.1<br>7.1 | A<br>A |
| 21. Sedan Avenue / Austin Road | SSSC | AM<br>PM | 0.4 (9.6)<br>0.4 (10.0) | A (B)<br>A (B) | 2.1 (10.8)<br>1.3 (11.2) | A (B)<br>A (B) |
| 22. Betschart Drive / Atherton Drive | Does Not Exist | | | | | |

Notes: **Bold** indicates unacceptable operations.
AWSC = All-Way Stop Control; SSSC = Side-Street Stop Control; LOS = Level of Service
[1] For signalized intersections, roundabouts, and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side street stop-controlled intersections, intersection delay is reported in seconds per vehicle for the overall intersection and (worst-case) movement. Intersection delay is calculated based on the procedures and methodology contained in the Highway Capacity Manual 6th Edition (Transportation Research Board, 2016).
[2] Intersection was analyzed as a SSSC under Existing Conditions and a roundabout under Existing Plus Project conditions.
Source: Fehr & Peers, 2021

| Table 8 (Continued): Intersection Operations – Existing + Project Conditions | | | | | | |
|---|---|---|---|---|---|---|
| Intersection | Control Type | Peak Hour | Existing Conditions | | Existing Plus Project Conditions | |
| | | | Delay[1] | LOS | Delay[1] | LOS |
| 23. Heartland Drive / Atherton Drive | SSSC | AM<br>PM | 4.0 (8.7)<br>1.8 (8.9) | A (A)<br>A (A) | 1.5 (9.4)<br>0.8 (9.9) | A (A)<br>A (A) |
| 24. Tannehill Drive / Atherton Drive | SSSC | AM<br>PM | 6.5 (8.6)<br>2.2 (8.6) | A (A)<br>A (A) | 1.1 (9.2)<br>0.5 (9.5) | A (A)<br>A (A) |
| 25. Heartland Drive / Pillsbury Road | AWSC | AM<br>PM | 7.6<br>7.7 | A<br>A | 8.6<br>8.8 | A<br>A |
| 26. Tannehill Drive / Pillsbury Road | AWSC | AM<br>PM | 7.3<br>7.4 | A<br>A | 8.2<br>8.6 | A<br>A |
| 27. Mono Street / Pillsbury Road | AWSC | AM<br>PM | 6.3 (9.1)<br>5.7 (9.2) | A (A)<br>A (A) | 2.3 (10.2)<br>2.0 (10.9) | A (B)<br>A (B) |

Notes: **Bold** indicates unacceptable operations.
AWSC = All-Way Stop Control; SSSC = Side-Street Stop Control; LOS = Level of Service
[1] For signalized intersections, roundabouts, and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side street stop-controlled intersections, intersection delay is reported in seconds per vehicle for the overall intersection and (worst-case) movement. Intersection delay is calculated based on the procedures and methodology contained in the Highway Capacity Manual 6th Edition (Transportation Research Board, 2016).
[2] Intersection was analyzed as a SSSC under Existing Conditions and a roundabout under Existing Plus Project conditions.
Source: Fehr & Peers, 2021

As shown in Figure 6b, primary access to the development would be provided via Antone Raymus Parkway that would be constructed between Main Street / Manteca Road to the west and Atherton Drive / Sedan Avenue to the east. It should be noted that the Hat Ranch Project will construct one through lane in each direction with turn pockets at specific intersections within the north half of the ultimate Antone Raymus Parkway right-of-way and improvements within the west half of the ultimate Atherton Drive right-of-way, based on design plans reviewed and approved by the Engineering Department and City Engineer.

As shown in Table 8, the results of the Existing + Project Conditions analysis show that all five (5) new intersections (#13 through #17) would all operate at acceptable LOS A/B during both AM and PM Peak Hour Conditions.

Also shown in Table 8, the following study intersections would be impacted under Existing + Project Conditions.

1) Woodward Avenue / Main Street – The addition of project-generated traffic would result in this all-way stop controlled intersection to degrade from LOS C to LOS E during the AM peak hour and from LOS D to LOS F during the PM peak hour.

   The City of Manteca PFIP identifies a traffic signal to be constructed at this intersection. The construction of a traffic signal under Existing + Project Conditions would improve traffic operations to LOS B during the AM peak hour and LOS C during the PM peak hour.

   - **Traffic COA #1** – The developer shall install a traffic signal at the Woodward Avenue / Main Street intersection prior to issuance of the 100th building permit, unless otherwise directed by the City Engineer. The design of the traffic signal and associated intersection improvements shall be reviewed and approved by the Engineering Department or City Engineer.

     The developer shall pay for the total cost for the design and installation of the traffic signal, and will be reimbursed by the City of Manteca for the cost less their fair share using available PFIP funds. The proposed Hat Ranch project contributes to approximately 12 percent of volumes at this intersection under Existing + Project Conditions. Therefore, the project's fair share would be 12 percent of the cost of signalizing the Woodward Avenue / Main Street intersection.

2a) SR 120 EB Ramps / Main Street – The addition of project-generated traffic would result in this signalized intersection to degrade from LOS C to LOS E during the AM peak hour.

2b) SB SR 99 Off-Ramp / Moffat Boulevard – The addition of project-generated traffic would result in this side-street stop controlled intersection to continue to operate at LOS F during the AM peak hour.

2c) Moffat Boulevard / Austin Road / SB SR 99 On-Ramp – The addition of project-generated traffic would result in this all-way stop controlled intersection to degrade from LOS D to LOS E during the AM peak hour and continue to operate at LOS F during the PM peak hour.

2d) Austin Road / NB SR 99 Off-Ramp– The addition of project-generated traffic would result in this side-street stop controlled intersection to continue to degrade from LOS E to LOS F during the AM peak hour and continue to operate at LOS F during the PM peak hour.

   The City of Manteca is working with the San Joaquin Council of Governments (SJCOG) and the California Department of Transportation (Caltrans) to improve the SR 120 / SR 99 freeway-to-freeway interchange. The proposed improvements to each of the study intersections would improve intersection operations to LOS C conditions or better during both AM and PM peak hour conditions.

- **Traffic COA #2** – With the Improvement Plans for the first unit of the project, the developer shall submit plans to the City of Manteca which propose improvements at the intersections below to mitigate the impacts to the General Plan mandated LOS requirements. The proposed improvements shall be reviewed and approved by the City Engineer prior to approval of the Improvement Plans. Developer shall install the traffic improvements with the improvements for the first unit of the project:

  i. SR 120 EB Ramps / Main Street;
  ii. SB SR 99 Off-Ramp / Moffat Boulevard;
  iii. Moffat Boulevard / Austin Road / SB SR 99 On-Ramp; and
  iv. Austin Road / NB SR 99 Off-Ramp.

3) As shown in Figure 7, the proposed Hat Ranch Project would also include connections to the following existing neighborhood:

   a. Evans Estates (to and from the west);
   b. Pillsbury Estates (to and from the north-west via Pillsbury Road);
   c. Atherton Homes at Woodward Park Subdivision (to and from the north-west); and
   d. Woodward Park Subdivision (to and from the north-east via Pillsbury Road).

   In order to reduce the amount of Hat Ranch traffic traveling through these adjacent neighborhoods, the project is being required to construct the following roadways:

   - Antone Raymus Parkway (from Main Street / Manteca Road to Atherton Drive;
   - Pillsbury Road (from south of Mono Street to Antone Raymus Parkway); and
   - Atherton Drive (from south of Tannehill Drive to Antone Raymus Parkway).

   With these required improvements, the vast majority of project-generated traffic would use these roadways to travel to and from the proposed Hat Ranch Project, therefore minimizing the number of vehicles driving through the existing neighborhoods.

   - **Traffic COA #3** – The developer shall install traffic calming measures as determined by the City of Manteca prior to issuance of building permits to reduce travel speeds on Buena Vista Drive between the northern limits of the Hat Ranch Project and Woodward Community Park. The locations and design shall be reviewed and approved by the City Engineer as part of the Improvement Plan process, prior to installation.

# 6. Cumulative Conditions Analysis

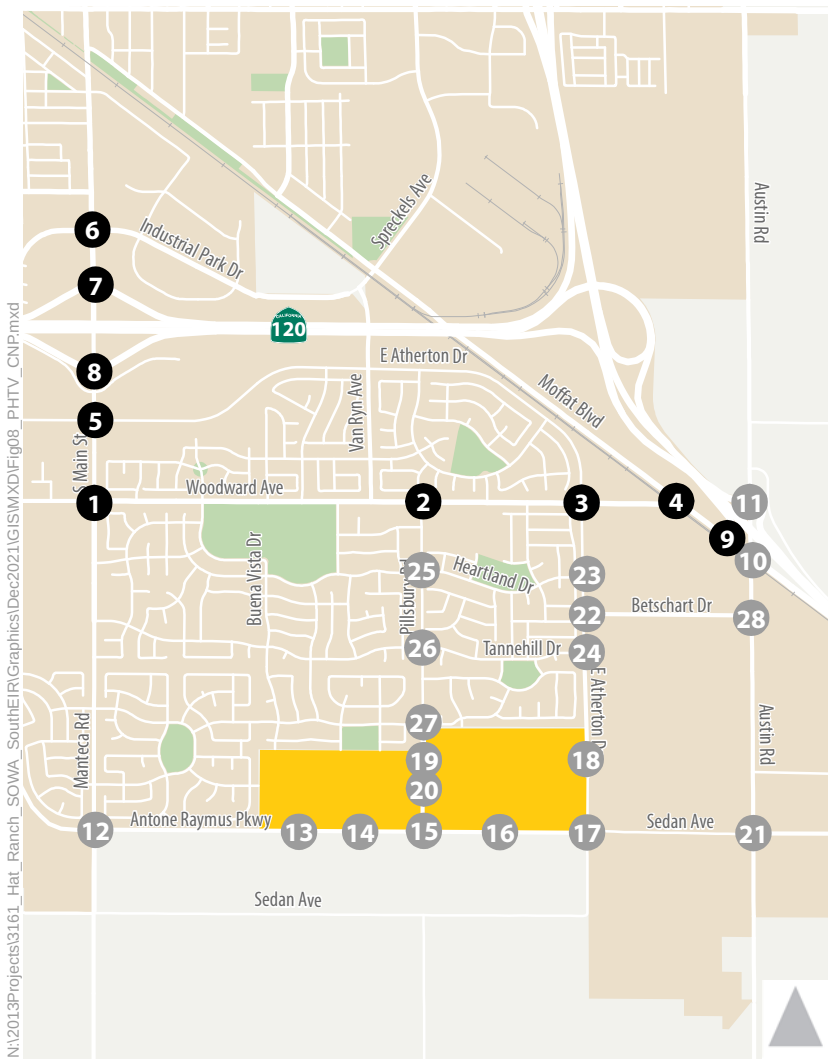
This chapter analyzes the impacts of the project under Cumulative (2040) Conditions. The analysis reflects long-term development in the City of Manteca and other nearby jurisdictions using the original Manteca Travel Forecasting Model previously described. **Figures 8a, 8b, and 8c** displays AM and PM peak hour turning movements and lane configurations and includes following improvements:

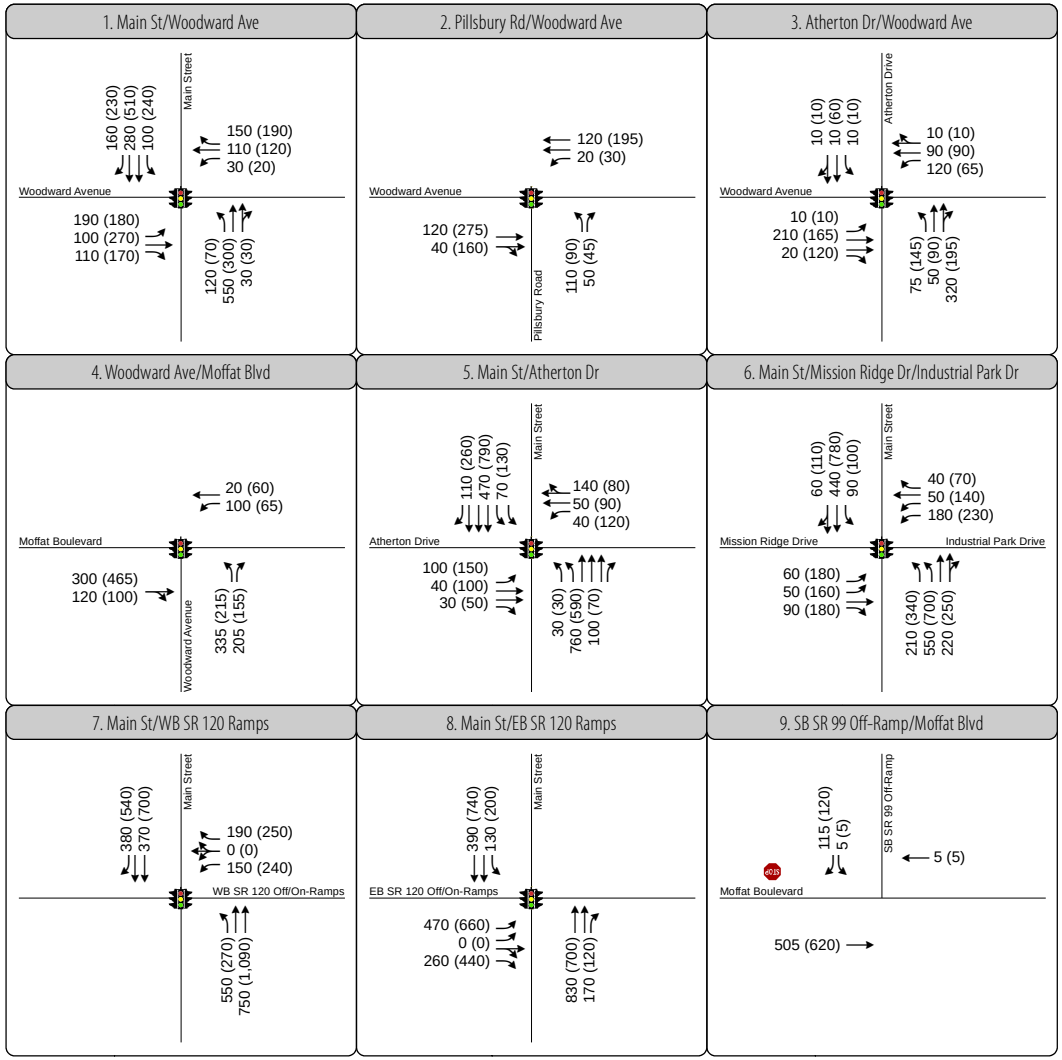
- **State Route 120 / State Route 99 Interchange Project:** The City of Manteca, California Department of Transportation District 10 and the San Joaquin Council of Governments Are working together to improve the existing freeway-to-freeway interchange. This project will add an additional lane to increase capacity on two connector ramps (eastbound SR 120 to southbound SR 99 and from northbound SR 99 to westbound SR 120), add auxiliary lanes on SR 99 and 120 to improve merging traffic movements, upgrade the existing interchange ramps at Austin Road, replace the Austin Road structure over SR 99 with a four-lane structure over both SR 99 and Union Pacific Railroad (UPRR), remove the existing at-grade crossing of the UPRR tracks at Austin Road and construct a new connector road from Austin Road to Woodward to Moffat Boulevard and widen the existing Woodward Avenue gated railroad crossing, and install new improvements at the following intersections:

    - Woodward Avenue / Moffat Boulevard;
    - SR 99 SB Off-Ramp / Moffat Boulevard;
    - Austin Road / SR 99 NB Ramps; and
    - Betschart Drive / Atherton Drive.

- **PFIP Improvements**: Intersection lane configurations and traffic controls identified in the City of Manteca PFIP were assumed to be constructed. This results in modifications to the following intersections:
    - Woodward Avenue / Main Street;
    - Woodward Avenue / Atherton Drive;
    - Main Street / Atherton Drive;
    - Antone Raymus Parkway / Manteca Road (Main Street);
    - Antone Raymus Parkway / Atherton Drive; and
    - Antone Raymus Parkway / Austin Road.

- **SR 120 / Main Street Interchange:** Appendix F of the SJCOG Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) indicates reconstruction of the SR 120/Main Street Interchange. The design has not been formalized; therefore, we assumed the reconstruction would result in a configuration similar to the Union Road Interchange, which was constructed as a diverging diamond interchange.

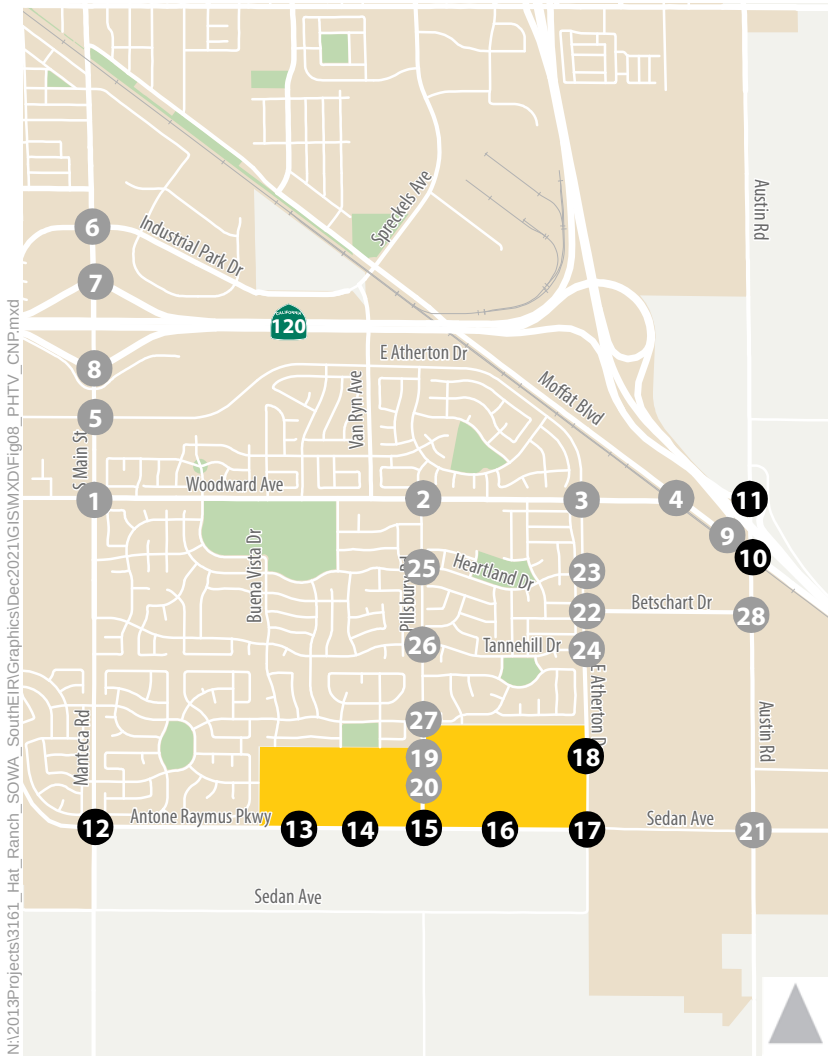


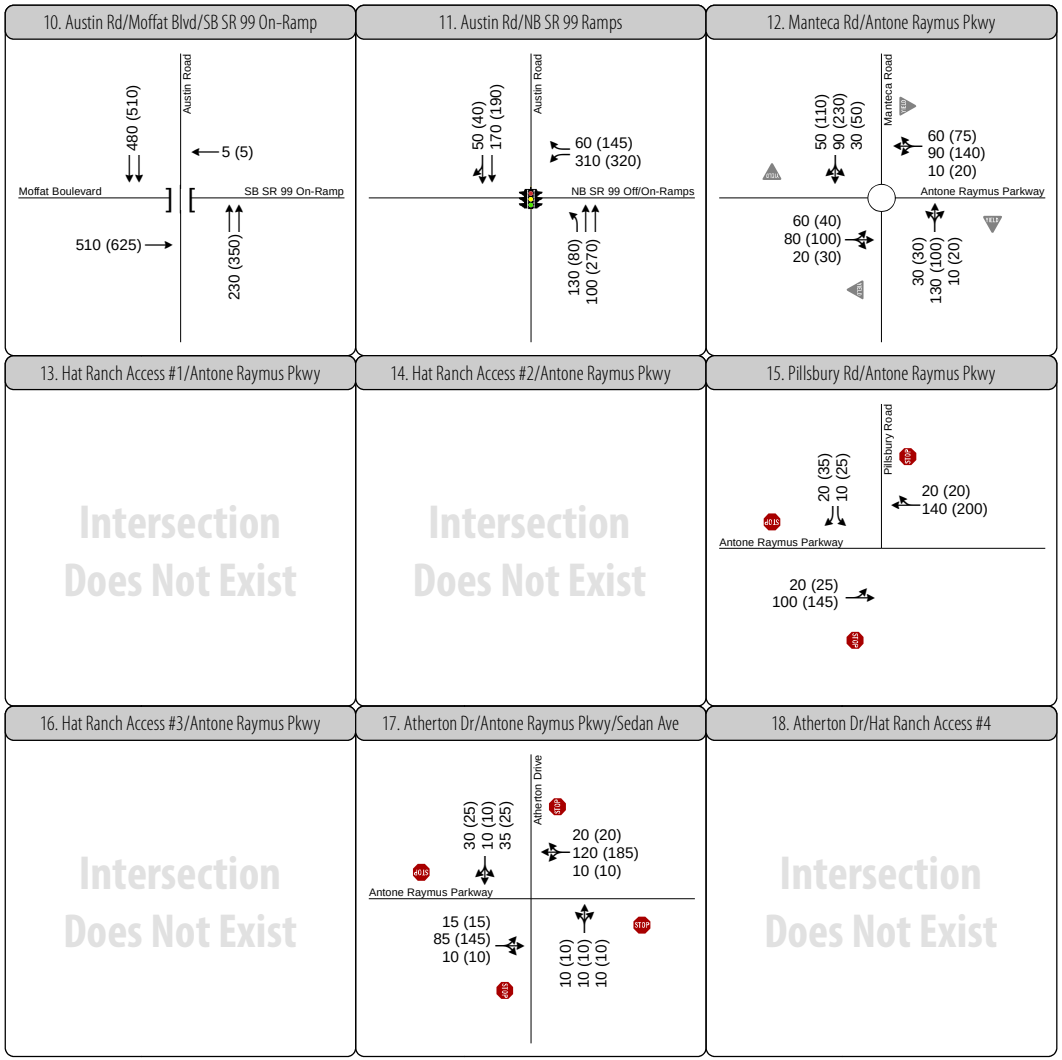




1 Study Intersection
Project Site
] [ Grade-Separation
Turn Lane
AM (PM) Peak Hour Traffic Volume
Traffic Signal
Stop Sign
Yield Sign
Roundabout

Figure 8a

# Peak Hour Traffic Volumes and Lane Configurations - Cumulative No Project Conditions




1 Study Intersection
Project Site
] [ Grade-Separation
Turn Lane
AM (PM) Peak Hour Traffic Volume
Traffic Signal
Stop Sign
Yield Sign
Roundabout

Figure 8b

# Peak Hour Traffic Volumes and Lane Configurations - Cumulative No Project Conditions

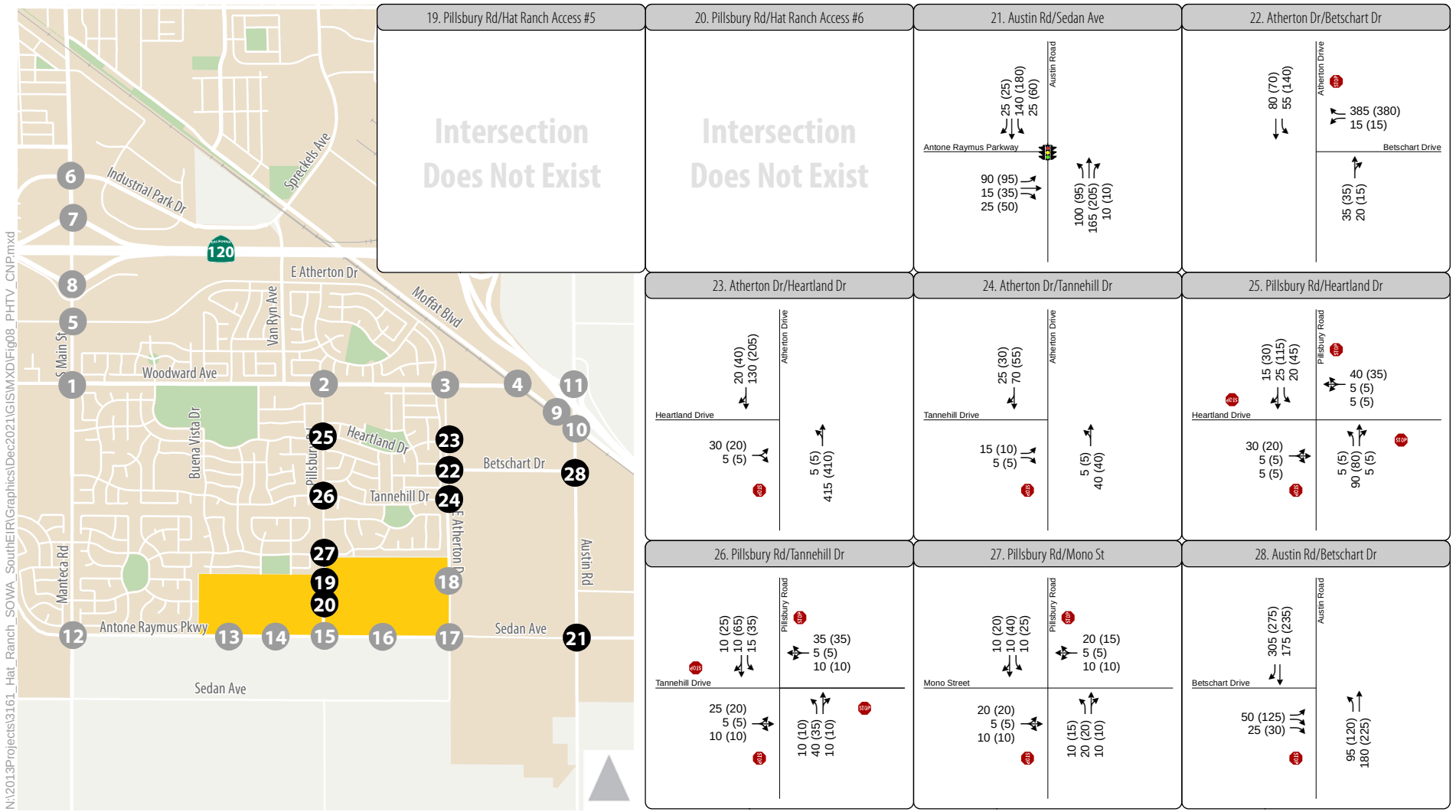



Figure 8c

# Peak Hour Traffic Volumes and Lane Configurations - Cumulative No Project Conditions

## 6.1 Cumulative No Project Intersection Operations

**Table 9** displays the AM and PM peak hour intersection operations. Technical calculations are displayed in **Appendix E (AM)** and **Appendix F (PM)**.

| Table 9: Intersection Operations – Cumulative (2040) No Project Conditions | | | | |
|---|---|---|---|---|
| **Intersection** | **Control Type** | **Peak Hour** | **Delay[1]** | **LOS** |
| 1. Woodward Avenue / Main Street | Signal | AM<br>PM | 20.4<br>21.0 | C<br>C |
| 2. Woodward Avenue / Pillsbury Road | Signal | AM<br>PM | 7.7<br>8.2 | A<br>A |
| 3. Woodward Avenue / Atherton Drive | Signal | AM<br>PM | 16.9<br>15.0 | B<br>B |
| 4. Woodward Avenue / Moffat Boulevard | Signal | AM<br>PM | 17.0<br>15.3 | B<br>B |
| 5. Main Street / Atherton Drive | Signal | AM<br>PM | 16.7<br>18.0 | B<br>B |
| 6. Main Street / Mission Ridge Drive / Industrial Park Drive | Signal | AM<br>PM | 22.8<br>33.2 | C<br>C |
| 7. SR 120 WB Ramps / Main Street; | Signal | AM<br>PM | 19.4<br>17.0 | B<br>B |
| 8. SR 120 EB Ramps / Main Street | Signal | AM<br>PM | 19.7<br>23.9 | B<br>C |
| 9. SR 99 SB Off-Ramp / Moffat Boulevard | SSSC | AM<br>PM | 1.7 (12.4)<br>1.5 (13.7) | A (B)<br>A (B) |
| 10. Moffat Boulevard / Austin Road / SR 99 SB On-Ramp | Does Not Exist (Grade-Separated as part of SR 120 / SR 99 Project) | | | |
| 11. Austin Road / SR 99 NB Ramps | Signal | AM<br>PM | 11.6<br>9.9 | B<br>A |
| 12. Antone Raymus Parkway / Manteca Road (Main Street) | Roundabout | AM<br>PM | 4.6<br>6.1 | A<br>A |

Notes:
AWSC = All-Way Stop Control; SSSC = Side-Street Stop Control; LOS = Level of Service
[1] For signalized intersections and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side street stop-controlled intersections, intersection delay is reported in seconds per vehicle for the overall intersection and (worst-case) movement. Intersection delay is calculated based on the procedures and methodology contained in the Highway Capacity Manual 6th Edition (Transportation Research Board, 2016).
Source: Fehr & Peers, 2021

| Table 9 (Continued): Intersection Operations – Cumulative (2040) No Project Conditions | | | | |
|---|---|---|---|---|
| **Intersection** | **Control Type** | **Peak Hour** | **Delay[1]** | **LOS** |
| 13. Antone Raymus Parkway / Project Intersection #1 | AWSC | AM<br>PM | Does Not Exist | |
| 14. Antone Raymus Parkway / Project Intersection #2 | AWSC | AM<br>PM | Does Not Exist | |
| 15. Antone Raymus Parkway / Pillsbury Road | AWSC | AM<br>PM | 8.0<br>8.7 | A<br>A |
| 16. Antone Raymus Parkway / Project Intersection #3 | AWSC | AM<br>PM | Does Not Exist | |
| 17. Antone Raymus Parkway / Atherton Drive | AWSC | AM<br>PM | 8.1<br>8.5 | A<br>A |
| 18. Project Intersection #4 / Atherton Drive | AWSC | AM<br>PM | Does Not Exist | |
| 19. Project Intersection #5 / Pillsbury Road | AWSC | AM<br>PM | Does Not Exist | |
| 20. Project Intersection #6 / Pillsbury Road | AWSC | AM<br>PM | Does Not Exist | |
| 21. Antone Raymus Parkway / Austin Road | Signal | AM<br>PM | 14.5<br>16.1 | B<br>B |
| 22. Betschart Drive / Atherton Drive | SSSC | AM<br>PM | 8.1 (11.0)<br>8.2 (12.0) | A (B)<br>A (B) |
| 23. Heartland Drive / Atherton Drive | SSSC | AM<br>PM | 0.8 (13.0)<br>0.6 (13.6) | A (B)<br>A (B) |
| 24. Tannehill Drive / Atherton Drive | SSSC | AM<br>PM | 1.4 (9.3)<br>1.2 (8.7) | A (A)<br>A (A) |
| 25. Heartland Drive / Pillsbury Road | AWSC | AM<br>PM | 7.8<br>8.3 | A<br>A |
| 26. Tannehill Drive / Pillsbury Road | AWSC | AM<br>PM | 7.5<br>7.8 | A<br>A |
| 27. Mono Street / Pillsbury Road | AWSC | AM<br>PM | 5.6<br>4.7 | A<br>A |

Notes: AWSC = All-Way Stop Control; SSSC = Side-Street Stop Control; LOS = Level of Service

[1] For signalized intersections and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side street stop-controlled intersections, intersection delay is reported in seconds per vehicle for the overall intersection and (worst-case) movement. Intersection delay is calculated based on the procedures and methodology contained in the Highway Capacity Manual 6th Edition (Transportation Research Board, 2016).

Source: Fehr & Peers, 2021

## 6.2 Cumulative Plus Project Intersection Operations

Project trips were added to Cumulative No Project volumes to develop Cumulative Plus Project turning movements. **Figure 9** presents the trip distribution under Cumulative Plus Project conditions. **Figures 10a, 10b, and 10c** displays the intersection turning movements under Cumulative Plus Project conditions.

And **Table 10** presents the results of the Cumulative Plus Project intersection operations analysis. Technical calculations are displayed in **Appendix G (AM)** and **Appendix H (PM)**. Under Cumulative Plus Project conditions, all 27 study intersections would operate at LOS D conditions or better during both AM and PM peak hour conditions.

**Table 10: Intersection Operations – Cumulative (2040) + Project Conditions**

| Intersection | Control Type | Peak Hour | Cumulative Conditions | | Cumulative Plus Project Conditions | |
|---|---|---|---|---|---|---|
| | | | Delay[1] | LOS | Delay[1] | LOS |
| 1. Woodward Avenue / Main Street | Signal | AM<br>PM | 20.4<br>21.0 | C<br>C | 26.1<br>28.5 | C<br>C |
| 2. Woodward Avenue / Pillsbury Road | AWSC | AM<br>PM | 7.7<br>8.2 | A<br>A | 8.2<br>8.8 | A<br>A |
| 3. Woodward Avenue / Atherton Drive | Signal | AM<br>PM | 16.9<br>15.0 | B<br>B | 17.9<br>16.4 | B<br>B |
| 4. Woodward Avenue / Moffat Boulevard | Signal | AM<br>PM | 17.0<br>15.3 | B<br>B | 17.3<br>16.1 | B<br>B |
| 5. Main Street / Atherton Drive | Signal | AM<br>PM | 16.7<br>18.0 | B<br>B | 16.8<br>17.9 | B<br>B |
| 6. Main Street / Mission Ridge Drive / Industrial Park Drive | Signal | AM<br>PM | 22.8<br>33.2 | C<br>C | 24.5<br>39.1 | C<br>D |
| 7. SR 120 WB Ramps / Main Street; | Signal | AM<br>PM | 19.4<br>17.0 | B<br>B | 18.4<br>18.6 | B<br>B |

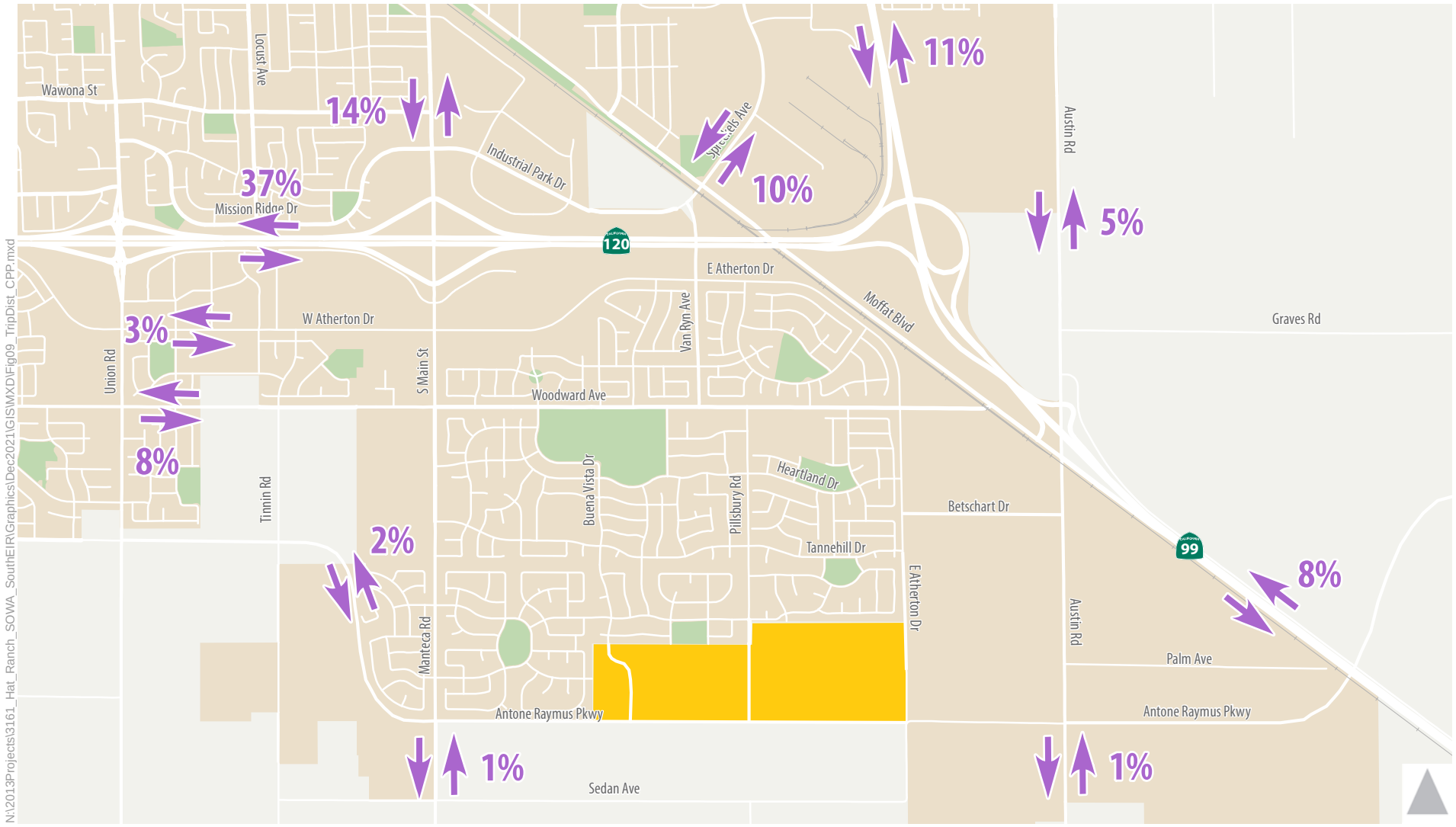
Notes: **Bold** indicates unacceptable operations.
AWSC = All-Way Stop Control; SSSC = Side-Street Stop Control; LOS = Level of Service
[1] For signalized intersections, roundabouts, and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side street stop-controlled intersections, intersection delay is reported in seconds per vehicle for the overall intersection and (worst-case) movement. Intersection delay is calculated based on the procedures and methodology contained in the Highway Capacity Manual 6th Edition (Transportation Research Board, 2016).
[2] Intersection was analyzed as a SSSC under Existing Conditions and a roundabout under Existing Plus Project conditions.
Source: Fehr & Peers, 2021

| Table 10 (Continued): Intersection Operations – Cumulative (2040) + Project Conditions | | | | | | |
|---|---|---|---|---|---|---|
| Intersection | Control Type | Peak Hour | Cumulative Conditions | | Cumulative Plus Project Conditions | |
| | | | Delay[1] | LOS | Delay[1] | LOS |
| 8. SR 120 EB Ramps / Main Street | Signal | AM<br>PM | 19.7<br>23.9 | B<br>C | 19.8<br>23.7 | B<br>C |
| 9. SR 99 SB Off-Ramp / Moffat Boulevard | SSSC | AM<br>PM | 1.7<br>(12.4)<br>1.5<br>(13.7) | A (B)<br>A (B) | 1.7 (12.7)<br>1.6 (14.0) | A (B)<br>A (B) |
| 10. Moffat Boulevard / Austin Road / SR 99 SB On-Ramp | Does Not Exist (Grade-Separated as part of SR 120 / SR 99 Project) | | | | | |
| 11. Austin Road / SR 99 NB Ramps | Signal | AM<br>PM | 11.6<br>9.9 | B<br>A | 12.5<br>11.4 | B<br>B |
| 12. Antone Raymus Parkway / Manteca Road (Main Street) | Roundabout | AM<br>PM | 4.6<br>6.1 | A<br>A | 4.6<br>6.1 | A<br>A |
| 13. Antone Raymus Parkway / Project Intersection #1 | SSSC | AM<br>PM | Does Not Exist | | 1.7 (9.7)<br>1.4 (9.7) | A (A)<br>A (A) |
| 14. Antone Raymus Parkway / Project Intersection #2 | SSSC | AM<br>PM | Does Not Exist | | 1.0 (9.4)<br>0.8 (9.5) | A (A)<br>A (A) |
| 15. Antone Raymus Parkway / Pillsbury Road | AWSC | AM<br>PM | 8.0<br>8.7 | A<br>A | 9.2<br>9.6 | A<br>B |
| 16. Antone Raymus Parkway / Project Intersection #3 | SSSC | AM<br>PM | Does Not Exist | | 2.0 (9.4)<br>1.3 (9.7) | A (A)<br>A (A) |
| 17. Antone Raymus Parkway / Atherton Drive | AWSC | AM<br>PM | 8.1<br>8.5 | A<br>A | 8.9<br>9.9 | A<br>A |

Notes: **Bold** indicates unacceptable operations.
AWSC = All-Way Stop Control; SSSC = Side-Street Stop Control; LOS = Level of Service
[1] For signalized intersections, roundabouts, and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side street stop-controlled intersections, intersection delay is reported in seconds per vehicle for the overall intersection and (worst-case) movement. Intersection delay is calculated based on the procedures and methodology contained in the Highway Capacity Manual 6th Edition (Transportation Research Board, 2016).
[2] Intersection was analyzed as a SSSC under Existing Conditions and a roundabout under Existing Plus Project conditions.
Source: Fehr & Peers, 2021

| Table 10 (Continued): Intersection Operations – Cumulative (2040) + Project Conditions | | | | | | |
|---|---|---|---|---|---|---|
| Intersection | Control Type | Peak Hour | Cumulative Conditions | | Cumulative Plus Project Conditions | |
| | | | Delay[1] | LOS | Delay[1] | LOS |
| 18. Project Intersection #4 / Atherton Drive | SSSC | AM<br>PM | Does Not Exist | | 3.8 (10.0)<br>2.2 (9.8) | A (B)<br>A (A) |
| 19. Project Intersection #5 / Pillsbury Road | AWSC | AM<br>PM | Does Not Exist | | 7.7<br>8.0 | A<br>A |
| 20. Project Intersection #6 / Pillsbury Road | AWSC | AM<br>PM | Does Not Exist | | 7.5<br>7.7 | A<br>A |
| 21. Antone Raymus Parkway / Austin Road | Signal | AM<br>PM | 14.5<br>16.1 | B<br>B | 15.1<br>16.4 | B<br>B |
| 22. Betschart Drive / Atherton Drive | SSSC | AM<br>PM | 8.1 (11.0)<br>8.2 (12.0) | A (B)<br>A (B) | 7.7 (12.0)<br>7.5 (13.7) | A (B)<br>A (B) |
| 23. Heartland Drive / Atherton Drive | SSSC | AM<br>PM | 0.8 (13.0)<br>0.6 (13.6) | A (B)<br>A (B) | 0.8 (14.1)<br>0.5 (15.2) | A (B)<br>A (C) |
| 24. Tannehill Drive / Atherton Drive | SSSC | AM<br>PM | 1.4 (9.3)<br>1.2 (8.7) | A (A)<br>A (A) | 0.9 (10.0)<br>0.7 (10.1) | A (B)<br>A (B) |
| 25. Heartland Drive / Pillsbury Road | AWSC | AM<br>PM | 7.8<br>8.3 | A<br>A | 8.9<br>9.4 | A<br>A |
| 26. Tannehill Drive / Pillsbury Road | AWSC | AM<br>PM | 7.5<br>7.8 | A<br>A | 8.4<br>8.8 | A<br>A |
| 27. Mono Street / Pillsbury Road | AWSC | AM<br>PM | 5.6<br>4.7 | A<br>A | 3.0<br>2.7 | A<br>A |

Notes: **Bold** indicates unacceptable operations.
AWSC = All-Way Stop Control; SSSC = Side-Street Stop Control; LOS = Level of Service
[1] For signalized intersections, roundabouts, and all-way stop controlled intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side street stop-controlled intersections, intersection delay is reported in seconds per vehicle for the overall intersection and (worst-case) movement. Intersection delay is calculated based on the procedures and methodology contained in the Highway Capacity Manual 6th Edition (Transportation Research Board, 2016).
[2] Intersection was analyzed as a SSSC under Existing Conditions and a roundabout under Existing Plus Project conditions.
Source: Fehr & Peers, 2021




XX% Trip Distribution Percentage

Project Site

Figure 9

## Trip Distribution - Cumulative Plus Project Conditions

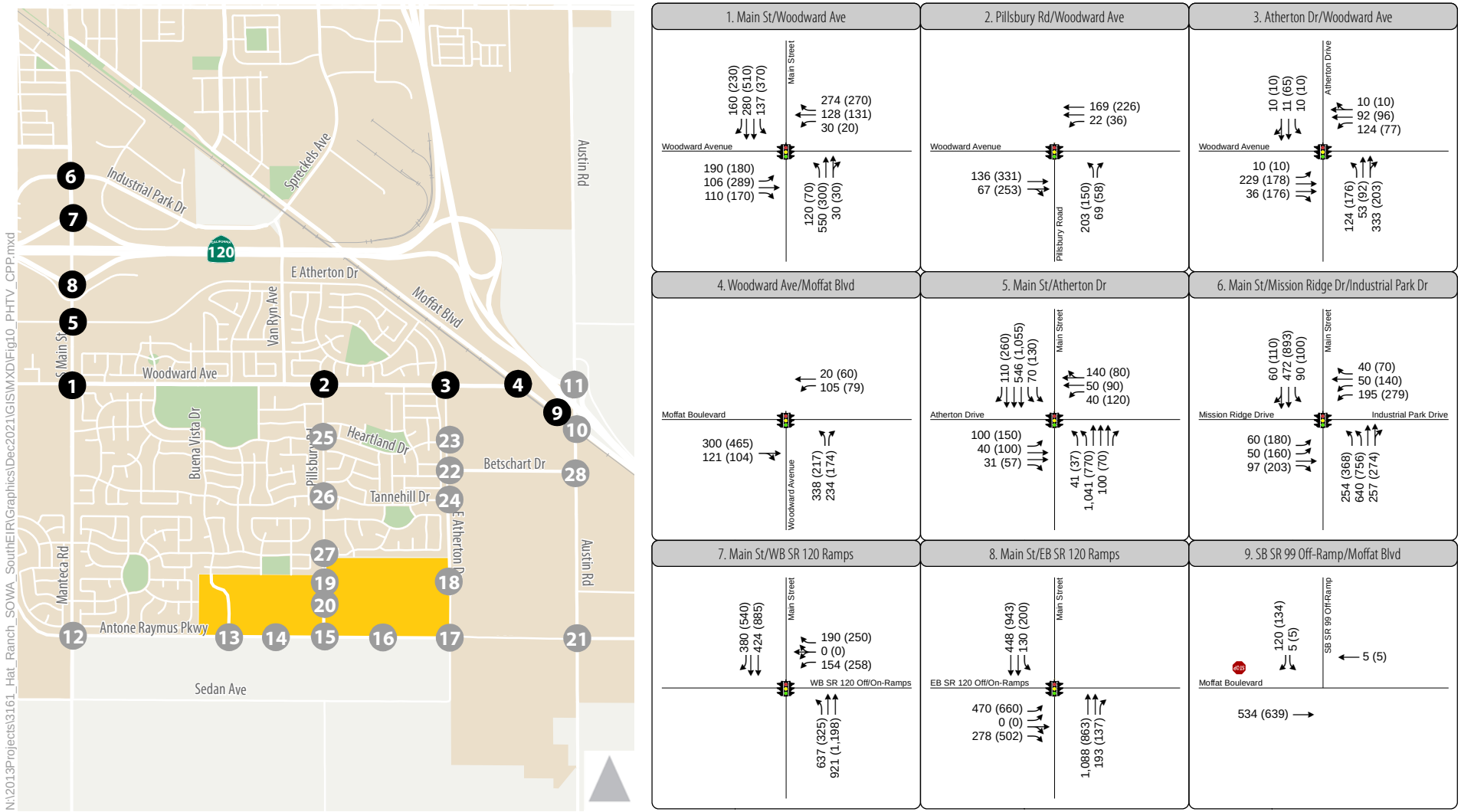



Figure 10a

# Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Project Conditions

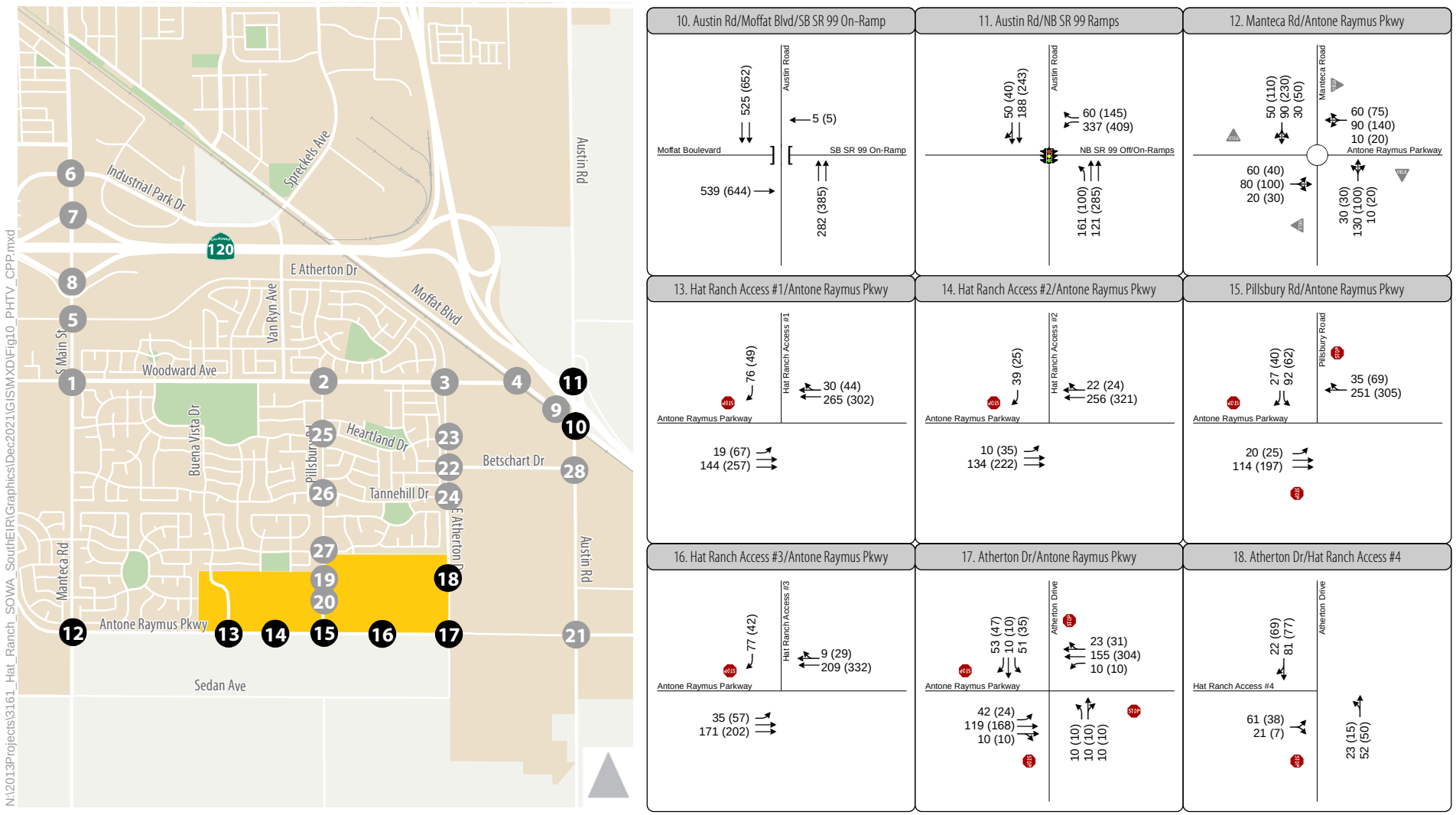
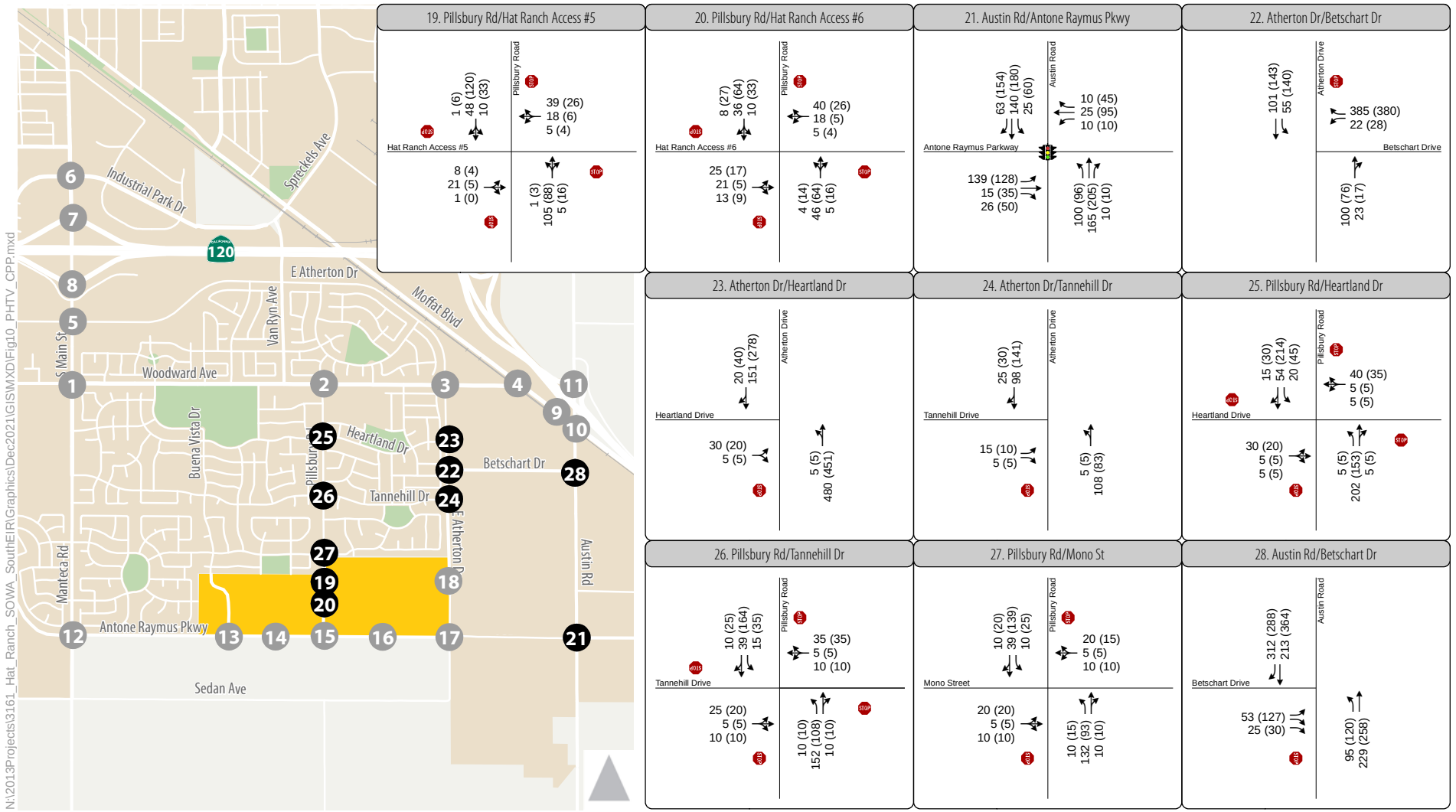



Figure 10b

# Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Project Conditions




Study Intersection
Project Site
Grade-Separation
Turn Lane
AM (PM) Peak Hour Traffic Volume
Traffic Signal
Stop Sign
Yield Sign
Roundabout

Figure 10c

# Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Project Conditions

# 7. Additional Analysis

This chapter describes the additional analysis completed for the proposed development project, including a policy consistency review and a site access evaluation.

## 7.1 Policy Consistency

The City of Manteca General Plan and Active Transportation Plan were reviewed to determine if the proposed development project results in any inconsistencies with adopted transportation related policies.

### Manteca General Plan 2023

The proposed development project's General Plan land use designation is Low Density Residential (LDR), which allows 2.1 to 8 dwelling units per acre. The development project proposes 4.8 dwelling units/acre and is therefore, consistent with the General Plan land use designation. Additionally, the project is consistent with goals and policies identified in the Circulation Element of the City of Manteca General Plan 2023, as described below:

*Goals*

- Goal C-2. Provide complete streets designed to serve a broad spectrum of travel modes, including automobiles, public transit, walking, and bicycling.
- Goal C-9. Provide a safe, secure, and convenient bicycle route system that connects to retail, employment centers, public facilities, and parks
- Goal C-10. Provide for safe and convenient pedestrian circulation.

The proposed project includes bicycle and pedestrian improvements consistent with those required in the ATP. Each of these improvements help create complete streets and are consistent with the goals described above.

*Policies*

- C-P-2: To the extent feasible, the City shall strive for a vehicular LOS of D or better at all streets and intersections, except in the Downtown area where right-of-way is limited, pedestrian, bicycle, and transit mobility are most important and vehicular LOS is not a consideration.
- C-P-9: Residential and collector street intersections with collector and arterial streets shall be aligned with other residential and collector streets, where feasible, to maintain a high degree of connectivity between neighborhoods, minimize circuitous travel, and to allow bicyclists and pedestrians to travel conveniently and safely from one neighborhood to another without using major streets.

Although LOS cannot be used as a CEQA metric to identify significant transportation impacts, intersection operations were analyzed for the proposed project and are discussed in Chapters 4, 5, and 6.

### Active Transportation Plan (ATP)

The ATP identifies planned sidewalks and a future Class I bike path on Atherton Drive, a Class II Buffered bike lane on Main Street / Manteca Road, and a Class II bike lane on Antone Raymus Parkway. The proposed development project is consistent with the ATP and will construct sidewalks on Pillsbury Road and on internal streets, providing adequate connections to and throughout the project site for pedestrians.

The ATP indicates lighting will be needed along Antone Raymus Parkway, Atherton Drive and Main Street / Manteca Road. Detailed project plans are being developed and it is recommended that lighting be provided along the project frontages to improve visibility and help prevent bicycle and pedestrian collisions.

## 7.2 Site Access Evaluation

As described in Chapter 5 (Existing + Project Conditions) and displayed in **Figure 7**, primary access for the proposed development project would be provided by five access intersections located Antone Raymus Parkway (3), Atherton Drive (1) and Pillsbury Road (2):

1. Antone Raymus Parkway / Project Intersection #1 (side-street stop controlled);
2. Antone Raymus Parkway / Project Intersection #2 (side-street stop controlled);
3. Antone Raymus Parkway / Project Intersection #3 (side-street stop controlled);
4. Project Intersection #4 / Atherton Drive (side-street stop controlled);
5. Project Intersection #5 / Pillsbury Road (all-way stop controlled); and
6. Project Intersection #6 / Pillsbury Road (all-way stop controlled).

Access would be provided internally by Polk Street, Buena Vista Drive, Inyo Avenue and Jigsaw Avenue, which connect to the subdivision to the west and north-west. Access would also be provided internally by Veramonte Avenue which connect to the subdivision to the north-east.

The preliminary site plan indicates adequate emergency access would be provided and there do not appear to be any geometric hazards.

- **Traffic COA #4** – The developer shall design all street sections and intersection based on typical City standards unless otherwise directed by the City Engineer. All street sections and intersections shall be reviewed and approved by the City of Manteca Engineering Department before issuance of building permits.

# 8. Conclusions

This chapter presents the conclusions of the transportation impact analysis for the proposed Hat Ranch Project in the City of Manteca.

## 8.1 Transportation Impact Analysis

Consistent with SB 743, VMT is used as the primary metric for identifying significant transportation impacts. The established Baseline VMT per single family household in the City of Manteca is 103.7 and the established Cumulative (2040) VMT per single family household in the City of Manteca is 83.0.

Under Baseline Conditions, the proposed Hat Ranch Project would generate an estimated average of 114.6 VMT per single family household, resulting in a total daily project VMT of 84,575. The development is anticipated to generate a total of 6,967 daily trips, indicating the average trip length would be approximately 12.1 miles. The Hat Ranch Project Baseline (Existing) Daily VMT of 114.6 represents an approximately 10 percent increase from Baseline conditions. Because the development would generate vehicle travel exceeding 15 percent below the established baseline, this is a **significant transportation impact**.

Under Cumulative (2040) Conditions, the proposed Hat Ranch Project would generate an estimated average of 83.0 VMT per single family household, resulting in a total daily project VMT of 61,254. The development is anticipated to generate a total of 6,967 daily trips, indicating the average trip length would be approximately 8.8 miles. The reduction in both Citywide and Project VMT are due to the fact that in the Cumulative Year, the number of jobs and the amount of commercial, retail, and recreational development in the City is anticipated to increase and residents would be able to travel shorter distances to access these types of land uses. The Hat Ranch Project Cumulative (2040) Daily VMT of 83.0 represents an approximately 6 percent increase from Cumulative (2040) conditions. Because the development would generate vehicle travel exceeding 15 percent below the established baseline, this is a **significant transportation impact**.

Mitigation Measure **MM-TRA-1** summarizes transportation measures with VMT-reducing benefits that may be applicable at project or community level in the City of Manteca. However, it should be noted that some of these strategies such as increased land use density or diversity may not be feasible for the project site because it would change the nature of the project.

**MM-TRA-1 : Implement VMT mitigation options**

Potential measures for individual development include, but are not limited to:

- Increase residential density;
- Limit residential parking supply;
- Unbundle residential parking cost from property cost;
- Provide access to transit (Transit Oriented Development);
- Improve street connectivity;

- Provide ride-share program;
- Implement subsidized or discounted transit program;
- Provide end-of-trip bicycle facilities;
- Provide community-based travel planning;
- Implement market price public on-street parking;
- Provide pedestrian network improvement;
- Construct or improve bike facility;
- Construct or improve bike boulevard;
- Expand bikeway network;
- Implement conventional or electric carshare program;
- Implement pedal or electric bikeshare program;
- Implement scooter-share program;
- Extend transit network coverage or hours;
- Increase transit service frequency;
- Implement transit-supportive roadway treatments; and
- Reduce transit fares.

The City of Manteca can reduce future VMT generation through the TDM actions listed above, especially those related to increasing land use density and increasing multi-modal accessibility to key destinations. However, given the suburban land use context of the City combined with the City's limited ability to influence other measures that would have the largest effect on VMT (such as implementation of a VMT tax or an increase in the fuel tax), the effectiveness of these TDM measures cannot be guaranteed to reduce the project VMT or total VMT impacts to a less-than-significant level. Therefore, the proposed Hat Ranch Project VMT impact would remain **significant and unavoidable**.

Additionally, the proposed development project would not conflict with any program, plan, ordinance, or policy addressing the circulation system, substantially increase hazards due to a geometric feature, or result in inadequate emergency access. These impacts would be **less than significant**.

## 8.2 Intersection Operations Analysis

Existing and Existing Plus Project Conditions

As shown in Figure 1, primary access to the development would be provided via Antone Raymus Parkway that would be constructed between Main Street / Manteca Road to the west and Atherton Drive / Sedan Avenue to the east. It should be noted that the Hat Ranch Project will construct one through lane in each direction with turn pockets at specific intersections within the north half of the ultimate Antone Raymus Parkway right-of-way and improvements within the west half of the ultimate Atherton Drive right-of-way, based on design plans reviewed and approved by the Engineering Department and City Engineer.

As shown in Table 8, the results of the Existing + Project Conditions analysis show that all five (5) new intersections (#13 through #17) would all operate at acceptable LOS A/B during both AM and PM Peak Hour Conditions.

Results of the intersection operations analysis indicate that under Existing Conditions, the following three intersections operate at LOS F conditions:

- SB SR 99 Off-Ramp / Moffat Boulevard (PM peak hour);
- Moffat Boulevard / Austin Road / SB SR 99 On-Ramp (PM peak hour); and
- Austin Road / NB SR 99 Off-Ramps (PM peak hour).

Under Existing + Project Conditions, the addition of project generated traffic would result in following intersections degrading to LOS E or F Conditions:

- Woodward Avenue / Main Street (AM and PM peak hours);
- SR 120 EB Ramps / Main Street (AM peak hour)
- SB SR 99 Off-Ramp / Moffat Boulevard (PM peak hour);
- Moffat Boulevard / Austin Road / SB SR 99 On-Ramp (AM and PM peak hours); and
- Austin Road / NB SR 99 Off-Ramps (AM and PM peak hours).

The City of Manteca PFIP identifies a traffic signal to be constructed at the Woodward Avenue / Main Street intersection. The construction of a traffic signal under Existing + Project Conditions would improve traffic operations to LOS B during the AM peak hour and LOS C during the PM peak hour

The City of Manteca is working with the San Joaquin Council of Governments (SJCOG) and the California Department of Transportation (Caltrans) to improve the SR 120 / SR 99 freeway-to-freeway interchange. The proposed improvements to the other four study intersections identified above would improve intersection operations to LOS C conditions or better during both AM and PM peak hour conditions

Cumulative No Project and Cumulative Plus Project Conditions

The Cumulative No Project and Cumulative+ Project analysis includes the following:

- State Route 120 / State Route 99 Interchange Project improvements;
- PFIP Improvements; and
- SR 120 / Main Street Interchange improvements.

Under both Cumulative and Cumulative Plus Project conditions, all 27 study intersections would operate at LOS D conditions or better during both AM and PM peak hour conditions.

## Recommended Conditions of Approval

The following conditions should be incorporated into the Conditions of Approval for the proposed project:

- **Traffic COA #1** – The developer shall install a traffic signal at the Woodward Avenue / Main Street intersection prior to issuance of the 100th building permit, unless otherwise directed by the City Engineer. The design of the traffic signal and associated intersection improvements shall be reviewed and approved by the Engineering Department or City Engineer.

  The developer shall pay for the total cost for the design and installation of the traffic signal, and will be reimbursed by the City of Manteca for the cost less their fair share using available PFIP funds. The proposed Hat Ranch project contributes to approximately 12 percent of volumes at this intersection under Existing + Project Conditions. Therefore, the project's fair share would be 12 percent of the cost of signalizing the Woodward Avenue / Main Street intersection.

- **Traffic COA #2** – With the Improvement Plans for the first unit of the project, the developer shall submit plans to the City of Manteca which propose improvements at the intersections below to mitigate the impacts to the General Plan mandated LOS requirements. The proposed improvements shall be reviewed and approved by the City Engineer prior to approval of the Improvement Plans. Developer shall install the traffic improvements with the improvements for the first unit of the project:

  i. SR 120 EB Ramps / Main Street;
  ii. SB SR 99 Off-Ramp / Moffat Boulevard;
  iii. Moffat Boulevard / Austin Road / SB SR 99 On-Ramp; and
  iv. Austin Road / NB SR 99 Off-Ramp.

- **Traffic COA #3** – The developer shall install traffic calming measures as determined by the City of Manteca prior to issuance of building permits to reduce travel speeds on Buena Vista Drive between the northern limits of the Hat Ranch Project and Woodward Community Park. The locations and design shall be reviewed and approved by the City Engineer as part of the Improvement Plan process, prior to installation.

- **Traffic COA #4** – The developer shall design all street sections and intersection based on typical City standards unless otherwise directed by the City Engineer. All street sections and intersections shall be reviewed and approved by the City of Manteca Engineering Department before issuance of building permits.

# Appendix A:
# Existing AM Peak Hour Intersection Level of Service Analysis

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 15.9 |
| Intersection LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 35 | 95 | 70 | 20 | 110 | 130 | 90 | 265 | 15 | 75 | 175 | 15 |
| Future Vol, veh/h | 35 | 95 | 70 | 20 | 110 | 130 | 90 | 265 | 15 | 75 | 175 | 15 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 38 | 103 | 76 | 22 | 120 | 141 | 98 | 288 | 16 | 82 | 190 | 16 |
| Number of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 3 | 2 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 2 | 3 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 3 | 2 |
| HCM Control Delay | 14.7 | 12.9 | 19.2 | 15.2 |
| HCM LOS | B | B | C | C |

| Lane | NBLn1 | NBLn2 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | WBLn3 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 100% | 0% | 100% | 0% | 0% | 100% | 0% |
| Vol Thru, % | 0% | 95% | 0% | 58% | 0% | 100% | 0% | 0% | 92% |
| Vol Right, % | 0% | 5% | 0% | 42% | 0% | 0% | 100% | 0% | 8% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 90 | 280 | 35 | 165 | 20 | 110 | 130 | 75 | 190 |
| LT Vol | 90 | 0 | 35 | 0 | 20 | 0 | 0 | 75 | 0 |
| Through Vol | 0 | 265 | 0 | 95 | 0 | 110 | 0 | 0 | 175 |
| RT Vol | 0 | 15 | 0 | 70 | 0 | 0 | 130 | 0 | 15 |
| Lane Flow Rate | 98 | 304 | 38 | 179 | 22 | 120 | 141 | 82 | 207 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.214 | 0.618 | 0.09 | 0.384 | 0.051 | 0.261 | 0.28 | 0.185 | 0.436 |
| Departure Headway (Hd) | 7.861 | 7.315 | 8.519 | 7.698 | 8.368 | 7.855 | 7.137 | 8.164 | 7.598 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 456 | 493 | 420 | 466 | 427 | 456 | 502 | 439 | 473 |
| Service Time | 5.628 | 5.081 | 6.292 | 5.471 | 6.139 | 5.626 | 4.908 | 5.936 | 5.37 |
| HCM Lane V/C Ratio | 0.215 | 0.617 | 0.09 | 0.384 | 0.052 | 0.263 | 0.281 | 0.187 | 0.438 |
| HCM Control Delay | 12.8 | 21.3 | 12.1 | 15.2 | 11.6 | 13.4 | 12.7 | 12.8 | 16.2 |
| HCM Lane LOS | B | C | B | C | B | B | B | B | C |
| HCM 95th-tile Q | 0.8 | 4.1 | 0.3 | 1.8 | 0.2 | 1 | 1.1 | 0.7 | 2.2 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.2 |
| Intersection LOS | A |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 100 | 15 | 10 | 120 | 80 | 50 |
| Future Vol, veh/h | 100 | 15 | 10 | 120 | 80 | 50 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 109 | 16 | 11 | 130 | 87 | 54 |
| Number of Lanes | 1 | 0 | 1 | 2 | 1 | 1 |

| Approach | EB | WB | NB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 3 | 1 | 0 |
| Conflicting Approach Left | | NB | EB |
| Conflicting Lanes Left | 0 | 2 | 1 |
| Conflicting Approach Right | NB | | WB |
| Conflicting Lanes Right | 2 | 0 | 3 |
| HCM Control Delay | 8.9 | 7.3 | 8.6 |
| HCM LOS | A | A | A |

| Lane | NBLn1 | NBLn2 | EBLn1 | WBLn1 | WBLn2 | WBLn3 |
|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 0% | 100% | 0% | 0% |
| Vol Thru, % | 0% | 0% | 87% | 0% | 100% | 100% |
| Vol Right, % | 0% | 100% | 13% | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 80 | 50 | 115 | 10 | 60 | 60 |
| LT Vol | 80 | 0 | 0 | 10 | 0 | 0 |
| Through Vol | 0 | 0 | 100 | 0 | 60 | 60 |
| RT Vol | 0 | 50 | 15 | 0 | 0 | 0 |
| Lane Flow Rate | 87 | 54 | 125 | 11 | 65 | 65 |
| Geometry Grp | 8 | 8 | 8 | 7 | 7 | 7 |
| Degree of Util (X) | 0.138 | 0.068 | 0.177 | 0.017 | 0.091 | 0.06 |
| Departure Headway (Hd) | 5.702 | 4.5 | 5.105 | 5.529 | 5.026 | 3.304 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 630 | 796 | 704 | 649 | 714 | 1090 |
| Service Time | 3.427 | 2.225 | 2.83 | 3.249 | 2.747 | 1.004 |
| HCM Lane V/C Ratio | 0.138 | 0.068 | 0.178 | 0.017 | 0.091 | 0.06 |
| HCM Control Delay | 9.3 | 7.6 | 8.9 | 8.3 | 8.3 | 6.2 |
| HCM Lane LOS | A | A | A | A | A | A |
| HCM 95th-tile Q | 0.5 | 0.2 | 0.6 | 0.1 | 0.3 | 0.2 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 9.4 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 5 | 210 | 5 | 5 | 125 | 5 | 30 | 5 | 5 | 5 | 5 | 10 |
| Future Vol, veh/h | 5 | 210 | 5 | 5 | 125 | 5 | 30 | 5 | 5 | 5 | 5 | 10 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 5 | 228 | 5 | 5 | 136 | 5 | 33 | 5 | 5 | 5 | 5 | 11 |
| Number of Lanes | 1 | 1 | 1 | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 3 | 3 | 3 | 3 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 3 | 3 | 3 | 3 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 3 | 3 | 3 | 3 |
| HCM Control Delay | 10 | 8.6 | 8.9 | 8.2 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | NBLn2 | NBLn3 | EBLn1 | EBLn2 | EBLn3 | WBLn1 | WBLn2 | WBLn3 | SBLn1 | SBLn2 | SBLn3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 0% | 100% | 0% | 0% | 100% | 0% | 0% | 100% | 0% | 0% |
| Vol Thru, % | 0% | 100% | 25% | 0% | 100% | 0% | 0% | 100% | 89% | 0% | 100% | 14% |
| Vol Right, % | 0% | 0% | 75% | 0% | 0% | 100% | 0% | 0% | 11% | 0% | 0% | 86% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 30 | 3 | 7 | 5 | 210 | 5 | 5 | 83 | 47 | 5 | 3 | 12 |
| LT Vol | 30 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 |
| Through Vol | 0 | 3 | 2 | 0 | 210 | 0 | 0 | 83 | 42 | 0 | 3 | 2 |
| RT Vol | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 10 |
| Lane Flow Rate | 33 | 4 | 7 | 5 | 228 | 5 | 5 | 91 | 51 | 5 | 4 | 13 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.055 | 0.006 | 0.01 | 0.008 | 0.318 | 0.007 | 0.009 | 0.131 | 0.072 | 0.009 | 0.006 | 0.018 |
| Departure Headway (Hd) | 6.082 | 5.582 | 5.057 | 5.517 | 5.017 | 4.317 | 5.695 | 5.195 | 5.12 | 6.133 | 5.633 | 5.033 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 588 | 640 | 706 | 649 | 717 | 828 | 629 | 690 | 699 | 583 | 634 | 709 |
| Service Time | 3.826 | 3.326 | 2.801 | 3.246 | 2.746 | 2.046 | 3.428 | 2.928 | 2.853 | 3.879 | 3.379 | 2.779 |
| HCM Lane V/C Ratio | 0.056 | 0.006 | 0.01 | 0.008 | 0.318 | 0.006 | 0.008 | 0.132 | 0.073 | 0.009 | 0.006 | 0.018 |
| HCM Control Delay | 9.2 | 8.4 | 7.9 | 8.3 | 10.1 | 7.1 | 8.5 | 8.7 | 8.3 | 8.9 | 8.4 | 7.9 |
| HCM Lane LOS | A | A | A | A | B | A | A | A | A | A | A | A |
| HCM 95th-tile Q | 0.2 | 0 | 0 | 0 | 1.4 | 0 | 0 | 0.4 | 0.2 | 0 | 0 | 0.1 |

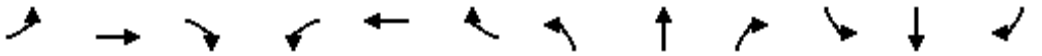
| Intersection | |
|---|---|
| Int Delay, s/veh | 3.9 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 285 | 5 | 130 | 345 | 5 | 215 |
| Future Vol, veh/h | 285 | 5 | 130 | 345 | 5 | 215 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 150 | - | 0 | 25 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 10 | 2 | 2 | 10 | 2 | 2 |
| Mvmt Flow | 310 | 5 | 141 | 375 | 5 | 234 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 315 | 0 | 970 | 313 |
| Stage 1 | - | - | - | - | 313 | - |
| Stage 2 | - | - | - | - | 657 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1245 | - | 281 | 727 |
| Stage 1 | - | - | - | - | 741 | - |
| Stage 2 | - | - | - | - | 516 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1245 | - | 249 | 727 |
| Mov Cap-2 Maneuver | - | - | - | - | 249 | - |
| Stage 1 | - | - | - | - | 741 | - |
| Stage 2 | - | - | - | - | 458 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 2.3 | 12.5 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 249 | 727 | - | - | 1245 | - |
| HCM Lane V/C Ratio | 0.022 | 0.321 | - | - | 0.113 | - |
| HCM Control Delay (s) | 19.8 | 12.3 | - | - | 8.3 | - |
| HCM Lane LOS | C | B | - | - | A | - |
| HCM 95th %tile Q(veh) | 0.1 | 1.4 | - | - | 0.4 | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 55 | 35 | 10 | 5 | 50 | 140 | 30 | 385 | 15 | 45 | 250 | 55 |
| Future Volume (veh/h) | 55 | 35 | 10 | 5 | 50 | 140 | 30 | 385 | 15 | 45 | 250 | 55 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 60 | 38 | 11 | 5 | 54 | 152 | 33 | 418 | 16 | 49 | 272 | 60 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 97 | 690 | 305 | 12 | 260 | 232 | 64 | 754 | 29 | 86 | 810 | 687 |
| Arrive On Green | 0.05 | 0.19 | 0.19 | 0.01 | 0.15 | 0.15 | 0.04 | 0.42 | 0.42 | 0.05 | 0.43 | 0.43 |
| Sat Flow, veh/h | 1781 | 3554 | 1573 | 1781 | 1777 | 1585 | 1781 | 1790 | 68 | 1781 | 1870 | 1585 |
| Grp Volume(v), veh/h | 60 | 38 | 11 | 5 | 54 | 152 | 33 | 0 | 434 | 49 | 272 | 60 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1573 | 1781 | 1777 | 1585 | 1781 | 0 | 1858 | 1781 | 1870 | 1585 |
| Q Serve(g_s), s | 1.8 | 0.5 | 0.3 | 0.2 | 1.5 | 4.9 | 1.0 | 0.0 | 9.6 | 1.5 | 5.3 | 1.2 |
| Cycle Q Clear(g_c), s | 1.8 | 0.5 | 0.3 | 0.2 | 1.5 | 4.9 | 1.0 | 0.0 | 9.6 | 1.5 | 5.3 | 1.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.04 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 97 | 690 | 305 | 12 | 260 | 232 | 64 | 0 | 783 | 86 | 810 | 687 |
| V/C Ratio(X) | 0.62 | 0.06 | 0.04 | 0.42 | 0.21 | 0.66 | 0.51 | 0.00 | 0.55 | 0.57 | 0.34 | 0.09 |
| Avail Cap(c_a), veh/h | 277 | 2213 | 980 | 245 | 1074 | 958 | 245 | 0 | 783 | 245 | 810 | 687 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 25.2 | 17.9 | 17.8 | 27.0 | 20.5 | 22.0 | 25.8 | 0.0 | 11.9 | 25.4 | 10.3 | 9.1 |
| Incr Delay (d2), s/veh | 6.2 | 0.0 | 0.0 | 21.8 | 0.4 | 3.1 | 6.2 | 0.0 | 2.8 | 5.9 | 1.1 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.9 | 0.2 | 0.1 | 0.1 | 0.6 | 1.9 | 0.5 | 0.0 | 3.8 | 0.7 | 2.0 | 0.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 31.4 | 17.9 | 17.9 | 48.8 | 20.9 | 25.1 | 32.1 | 0.0 | 14.7 | 31.3 | 11.4 | 9.4 |
| LnGrp LOS | C | B | B | D | C | C | C | A | B | C | B | A |
| Approach Vol, veh/h | | 109 | | | 211 | | | 467 | | | 381 | |
| Approach Delay, s/veh | | 25.4 | | | 24.6 | | | 16.0 | | | 13.6 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.1 | 27.5 | 4.9 | 15.1 | 6.5 | 28.2 | 7.5 | 12.5 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 7.5 | 23.0 | 7.5 | 34.0 | 7.5 | 23.0 | 8.5 | 33.0 |
| Max Q Clear Time (g_c+I1), s | 3.5 | 11.6 | 2.2 | 2.5 | 3.0 | 7.3 | 3.8 | 6.9 |
| Green Ext Time (p_c), s | 0.0 | 2.0 | 0.0 | 0.2 | 0.0 | 1.5 | 0.0 | 1.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 17.6 |
| HCM 6th LOS | B |

Notes

User approved pedestrian interval to be less than phase max green.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 60 | 50 | 85 | 180 | 50 | 40 | 200 | 370 | 160 | 90 | 385 | 45 |
| Future Volume (veh/h) | 60 | 50 | 85 | 180 | 50 | 40 | 200 | 370 | 160 | 90 | 385 | 45 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1752 | 1870 | 1870 | 1870 | 1870 | 1752 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 65 | 54 | 92 | 196 | 54 | 43 | 217 | 402 | 174 | 98 | 418 | 49 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 10 | 2 | 2 | 2 | 2 | 10 | 2 | 2 | 2 |
| Cap, veh/h | 165 | 209 | 175 | 236 | 384 | 324 | 305 | 1095 | 468 | 126 | 1394 | 163 |
| Arrive On Green | 0.05 | 0.11 | 0.11 | 0.14 | 0.21 | 0.21 | 0.09 | 0.45 | 0.45 | 0.07 | 0.44 | 0.44 |
| Sat Flow, veh/h | 3456 | 1870 | 1572 | 1668 | 1870 | 1578 | 3456 | 2422 | 1035 | 1781 | 3205 | 374 |
| Grp Volume(v), veh/h | 65 | 54 | 92 | 196 | 54 | 43 | 217 | 294 | 282 | 98 | 231 | 236 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1572 | 1668 | 1870 | 1578 | 1728 | 1777 | 1680 | 1781 | 1777 | 1802 |
| Q Serve(g_s), s | 1.5 | 2.1 | 4.4 | 9.2 | 1.9 | 1.8 | 4.9 | 8.7 | 8.9 | 4.4 | 6.8 | 6.9 |
| Cycle Q Clear(g_c), s | 1.5 | 2.1 | 4.4 | 9.2 | 1.9 | 1.8 | 4.9 | 8.7 | 8.9 | 4.4 | 6.8 | 6.9 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.62 | 1.00 | | 0.21 |
| Lane Grp Cap(c), veh/h | 165 | 209 | 175 | 236 | 384 | 324 | 305 | 804 | 760 | 126 | 773 | 784 |
| V/C Ratio(X) | 0.40 | 0.26 | 0.52 | 0.83 | 0.14 | 0.13 | 0.71 | 0.37 | 0.37 | 0.78 | 0.30 | 0.30 |
| Avail Cap(c_a), veh/h | 322 | 860 | 723 | 404 | 1139 | 961 | 451 | 804 | 760 | 233 | 773 | 784 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 37.2 | 32.7 | 33.7 | 33.6 | 26.2 | 26.1 | 35.7 | 14.4 | 14.5 | 36.7 | 14.7 | 14.8 |
| Incr Delay (d2), s/veh | 1.5 | 0.6 | 2.4 | 7.4 | 0.2 | 0.2 | 3.1 | 1.3 | 1.4 | 9.7 | 1.0 | 1.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.6 | 1.0 | 1.8 | 4.1 | 0.8 | 0.7 | 2.1 | 3.5 | 3.4 | 2.2 | 2.7 | 2.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 38.7 | 33.3 | 36.1 | 41.0 | 26.3 | 26.3 | 38.8 | 15.7 | 15.9 | 46.5 | 15.7 | 15.8 |
| LnGrp LOS | D | C | D | D | C | C | D | B | B | D | B | B |
| Approach Vol, veh/h | | 211 | | | 293 | | | 793 | | | 565 | |
| Approach Delay, s/veh | | 36.2 | | | 36.1 | | | 22.1 | | | 21.1 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 10.2 | 40.9 | 15.9 | 13.5 | 11.6 | 39.5 | 8.3 | 21.0 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 10.5 | 35.0 | 19.5 | 37.0 | 10.5 | 35.0 | 7.5 | 49.0 |
| Max Q Clear Time (g_c+I1), s | 6.4 | 10.9 | 11.2 | 6.4 | 6.9 | 8.9 | 3.5 | 3.9 |
| Green Ext Time (p_c), s | 0.1 | 3.6 | 0.3 | 0.6 | 0.2 | 2.8 | 0.0 | 0.4 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 25.6 |
| HCM 6th LOS | C |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 50 | 0 | 170 | 275 | 520 | 0 | 0 | 310 | 380 |
| Future Volume (veh/h) | 0 | 0 | 0 | 50 | 0 | 170 | 275 | 520 | 0 | 0 | 310 | 380 |
| Initial Q (Qb), veh | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | | | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | | | | 1870 | 1870 | 1752 | 1870 | 1870 | 0 | 0 | 1841 | 1841 |
| Adj Flow Rate, veh/h | | | | 54 | 0 | 0 | 299 | 565 | 0 | 0 | 337 | 413 |
| Peak Hour Factor | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | | | | 2 | 2 | 10 | 2 | 2 | 0 | 0 | 4 | 4 |
| Cap, veh/h | | | | 98 | 0 | | 363 | 1389 | 0 | 0 | 806 | 683 |
| Arrive On Green | | | | 0.05 | 0.00 | 0.00 | 0.20 | 0.74 | 0.00 | 0.00 | 0.44 | 0.44 |
| Sat Flow, veh/h | | | | 1781 | 0 | 1485 | 1781 | 1870 | 0 | 0 | 1841 | 1560 |
| Grp Volume(v), veh/h | | | | 54 | 0 | 0 | 299 | 565 | 0 | 0 | 337 | 413 |
| Grp Sat Flow(s),veh/h/ln | | | | 1781 | 0 | 1485 | 1781 | 1870 | 0 | 0 | 1841 | 1560 |
| Q Serve(g_s), s | | | | 1.3 | 0.0 | 0.0 | 7.1 | 4.9 | 0.0 | 0.0 | 5.6 | 9.0 |
| Cycle Q Clear(g_c), s | | | | 1.3 | 0.0 | 0.0 | 7.1 | 4.9 | 0.0 | 0.0 | 5.6 | 9.0 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | | | | 98 | 0 | | 363 | 1389 | 0 | 0 | 806 | 683 |
| V/C Ratio(X) | | | | 0.55 | 0.00 | | 0.82 | 0.41 | 0.00 | 0.00 | 0.42 | 0.60 |
| Avail Cap(c_a), veh/h | | | | 722 | 0 | | 421 | 1389 | 0 | 0 | 806 | 683 |
| HCM Platoon Ratio | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | | | | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | | | | 20.5 | 0.0 | 0.0 | 16.9 | 2.1 | 0.0 | 0.0 | 8.6 | 9.5 |
| Incr Delay (d2), s/veh | | | | 4.8 | 0.0 | 0.0 | 11.2 | 0.9 | 0.0 | 0.0 | 1.6 | 3.9 |
| Initial Q Delay(d3),s/veh | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | | | | 0.6 | 0.0 | 0.0 | 3.5 | 0.4 | 0.0 | 0.0 | 1.9 | 2.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 25.3 | 0.0 | 0.0 | 28.1 | 3.0 | 0.0 | 0.0 | 10.2 | 13.5 |
| LnGrp LOS | | | | C | A | | C | A | A | A | B | B |
| Approach Vol, veh/h | | | | | 54 | A | | 864 | | | 750 | |
| Approach Delay, s/veh | | | | | 25.3 | | | 11.7 | | | 12.0 | |
| Approach LOS | | | | | C | | | B | | | B | |

| Timer - Assigned Phs | 2 | | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 37.5 | | 13.5 | 24.0 | | 6.9 |
| Change Period (Y+Rc), s | 4.5 | | 4.5 | 4.5 | | 4.5 |
| Max Green Setting (Gmax), s | 33.0 | | 10.5 | 18.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | 6.9 | | 9.1 | 11.0 | | 3.3 |
| Green Ext Time (p_c), s | 3.8 | | 0.1 | 2.1 | | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 12.3 |
| HCM 6th LOS | B |

**Notes**

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 310 | 0 | 120 | 0 | 0 | 0 | 0 | 485 | 95 | 130 | 230 | 0 |
| Future Volume (veh/h) | 310 | 0 | 120 | 0 | 0 | 0 | 0 | 485 | 95 | 130 | 230 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | | | | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1870 | 1870 | | | | 0 | 1870 | 1870 | 1826 | 1870 | 0 |
| Adj Flow Rate, veh/h | 337 | 0 | 130 | | | | 0 | 527 | 103 | 141 | 250 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 2 | 2 | | | | 0 | 2 | 2 | 5 | 2 | 0 |
| Cap, veh/h | 424 | 0 | 377 | | | | 0 | 629 | 123 | 179 | 1119 | 0 |
| Arrive On Green | 0.24 | 0.00 | 0.24 | | | | 0.00 | 0.41 | 0.41 | 0.10 | 0.60 | 0.00 |
| Sat Flow, veh/h | 1781 | 0 | 1585 | | | | 0 | 1520 | 297 | 1739 | 1870 | 0 |
| Grp Volume(v), veh/h | 337 | 0 | 130 | | | | 0 | 0 | 630 | 141 | 250 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1585 | | | | 0 | 0 | 1817 | 1739 | 1870 | 0 |
| Q Serve(g_s), s | 9.8 | 0.0 | 3.7 | | | | 0.0 | 0.0 | 17.1 | 4.4 | 3.4 | 0.0 |
| Cycle Q Clear(g_c), s | 9.8 | 0.0 | 3.7 | | | | 0.0 | 0.0 | 17.1 | 4.4 | 3.4 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | | | | 0.00 | | 0.16 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 424 | 0 | 377 | | | | 0 | 0 | 752 | 179 | 1119 | 0 |
| V/C Ratio(X) | 0.80 | 0.00 | 0.34 | | | | 0.00 | 0.00 | 0.84 | 0.79 | 0.22 | 0.00 |
| Avail Cap(c_a), veh/h | 586 | 0 | 522 | | | | 0 | 0 | 752 | 237 | 1119 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | | | | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 19.7 | 0.0 | 17.4 | | | | 0.0 | 0.0 | 14.5 | 24.1 | 5.1 | 0.0 |
| Incr Delay (d2), s/veh | 5.2 | 0.0 | 0.5 | | | | 0.0 | 0.0 | 10.8 | 12.2 | 0.5 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.2 | 0.0 | 1.3 | | | | 0.0 | 0.0 | 7.9 | 2.2 | 1.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 24.9 | 0.0 | 17.9 | | | | 0.0 | 0.0 | 25.2 | 36.3 | 5.6 | 0.0 |
| LnGrp LOS | C | A | B | | | | A | A | C | D | A | A |
| Approach Vol, veh/h | | 467 | | | | | | 630 | | | 391 | |
| Approach Delay, s/veh | | 23.0 | | | | | | 25.2 | | | 16.6 | |
| Approach LOS | | C | | | | | | C | | | B | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 10.1 | 27.3 | | 17.6 | | 37.4 | | | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | 4.5 | | 4.5 | | | | | | |
| Max Green Setting (Gmax), s | 7.5 | 20.9 | | 18.1 | | 32.9 | | | | | | |
| Max Q Clear Time (g_c+I1), s | 6.4 | 19.1 | | 11.8 | | 5.4 | | | | | | |
| Green Ext Time (p_c), s | 0.0 | 0.7 | | 1.3 | | 1.4 | | | | | | |

| Intersection Summary | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HCM 6th Ctrl Delay | | | 22.3 | | | | | | | | | |
| HCM 6th LOS | | | C | | | | | | | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.2 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↑ | ↑ | | ↰ | ↱ |
| Traffic Vol, veh/h | 0 | 500 | 420 | 0 | 30 | 55 |
| Future Vol, veh/h | 0 | 500 | 420 | 0 | 30 | 55 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 25 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 543 | 457 | 0 | 33 | 60 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | 1000 | 457 |
| Stage 1 | - | - | - | - | 457 | - |
| Stage 2 | - | - | - | - | 543 | - |
| Critical Hdwy | - | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | 0 | 270 | 604 |
| Stage 1 | 0 | - | - | 0 | 638 | - |
| Stage 2 | 0 | - | - | 0 | 582 | - |
| Platoon blocked, % | | - | - | | | |
| Mov Cap-1 Maneuver | - | - | - | - | 270 | 604 |
| Mov Cap-2 Maneuver | - | - | - | - | 270 | - |
| Stage 1 | - | - | - | - | 638 | - |
| Stage 2 | - | - | - | - | 582 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 14.6 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBT | WBT | SBLn1 | SBLn2 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | 270 | 604 |
| HCM Lane V/C Ratio | - | - | 0.121 | 0.099 |
| HCM Control Delay (s) | - | - | 20.2 | 11.6 |
| HCM Lane LOS | - | - | C | B |
| HCM 95th %tile Q(veh) | - | - | 0.4 | 0.3 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 30.3 |
| Intersection LOS | D |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 135 | 350 | 45 | 0 | 5 | 5 | 55 | 90 | 30 | 55 | 65 | 360 |
| Future Vol, veh/h | 135 | 350 | 45 | 0 | 5 | 5 | 55 | 90 | 30 | 55 | 65 | 360 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 147 | 380 | 49 | 0 | 5 | 5 | 60 | 98 | 33 | 60 | 71 | 391 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 1 | 1 |
| HCM Control Delay | 46.9 | 10.3 | 13.4 | 18.5 |
| HCM LOS | E | B | B | C |

| Lane | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Vol Left, % | 38% | 0% | 25% | 0% | 46% | 0% |
| Vol Thru, % | 62% | 0% | 66% | 50% | 54% | 0% |
| Vol Right, % | 0% | 100% | 8% | 50% | 0% | 100% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 145 | 30 | 530 | 10 | 120 | 360 |
| LT Vol | 55 | 0 | 135 | 0 | 55 | 0 |
| Through Vol | 90 | 0 | 350 | 5 | 65 | 0 |
| RT Vol | 0 | 30 | 45 | 5 | 0 | 360 |
| Lane Flow Rate | 158 | 33 | 576 | 11 | 130 | 391 |
| Geometry Grp | 7 | 7 | 2 | 2 | 7 | 7 |
| Degree of Util (X) | 0.333 | 0.061 | 0.937 | 0.021 | 0.258 | 0.672 |
| Departure Headway (Hd) | 7.599 | 6.681 | 5.858 | 7.095 | 7.132 | 6.179 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 476 | 538 | 611 | 505 | 506 | 587 |
| Service Time | 5.313 | 4.395 | 3.956 | 5.135 | 4.832 | 3.879 |
| HCM Lane V/C Ratio | 0.332 | 0.061 | 0.943 | 0.022 | 0.257 | 0.666 |
| HCM Control Delay | 14.1 | 9.8 | 46.9 | 10.3 | 12.3 | 20.6 |
| HCM Lane LOS | B | A | E | B | B | C |
| HCM 95th-tile Q | 1.4 | 0.2 | 12.4 | 0.1 | 1 | 5.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 18.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 310 | 0 | 55 | 130 | 100 | 0 | 0 | 170 | 45 |
| Future Vol, veh/h | 0 | 0 | 0 | 310 | 0 | 55 | 130 | 100 | 0 | 0 | 170 | 45 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | 25 | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 1 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 337 | 0 | 60 | 141 | 109 | 0 | 0 | 185 | 49 |

| Major/Minor | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 601 | - | 109 | 234 | 0 | - | - | - | 0 |
| Stage 1 | 391 | - | - | - | - | - | - | - | - |
| Stage 2 | 210 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 6.42 | - | 6.22 | 4.12 | - | - | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | - | 3.318 | 2.218 | - | - | - | - | - |
| Pot Cap-1 Maneuver | 463 | 0 | 945 | 1333 | - | 0 | 0 | - | - |
| Stage 1 | 683 | 0 | - | - | - | 0 | 0 | - | - |
| Stage 2 | 825 | 0 | - | - | - | 0 | 0 | - | - |
| Platoon blocked, % | | | | | - | | | - | - |
| Mov Cap-1 Maneuver | 411 | 0 | 945 | 1333 | - | - | - | - | - |
| Mov Cap-2 Maneuver | 411 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 606 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 825 | 0 | - | - | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 37.9 | 4.5 | 0 |
| HCM LOS | E | | |

| Minor Lane/Major Mvmt | NBL | NBT | WBLn1 | WBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1333 | - | 411 | 945 | - | - |
| HCM Lane V/C Ratio | 0.106 | - | 0.82 | 0.063 | - | - |
| HCM Control Delay (s) | 8 | 0 | 43 | 9.1 | - | - |
| HCM Lane LOS | A | A | E | A | - | - |
| HCM 95th %tile Q(veh) | 0.4 | - | 7.5 | 0.2 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 110 | 0 | 0 | 80 |
| Future Vol, veh/h | 0 | 0 | 110 | 0 | 0 | 80 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 120 | 0 | 0 | 87 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 207 | 120 | 0 | 0 | 120 | 0 |
| Stage 1 | 120 | - | - | - | - | - |
| Stage 2 | 87 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 781 | 931 | - | - | 1468 | - |
| Stage 1 | 905 | - | - | - | - | - |
| Stage 2 | 936 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 781 | 931 | - | - | 1468 | - |
| Mov Cap-2 Maneuver | 781 | - | - | - | - | - |
| Stage 1 | 905 | - | - | - | - | - |
| Stage 2 | 936 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | 1468 | - |
| HCM Lane V/C Ratio | - | - | - | - | - |
| HCM Control Delay (s) | - | - | 0 | 0 | - |
| HCM Lane LOS | - | - | A | A | - |
| HCM 95th %tile Q(veh) | - | - | - | 0 | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 0 |
| Intersection LOS | - |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay | 0 | 0 | 0 |
| HCM LOS | - | - | - |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 0% | 0% | 0% |
| Vol Thru, % | 100% | 100% | 100% |
| Vol Right, % | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 0 | 0 | 0 |
| LT Vol | 0 | 0 | 0 |
| Through Vol | 0 | 0 | 0 |
| RT Vol | 0 | 0 | 0 |
| Lane Flow Rate | 0 | 0 | 0 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0 | 0 | 0 |
| Departure Headway (Hd) | 3.934 | 3.934 | 3.934 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 0 | 0 | 0 |
| Service Time | 1.934 | 1.934 | 1.934 |
| HCM Lane V/C Ratio | 0 | 0 | 0 |
| HCM Control Delay | 6.9 | 6.9 | 6.9 |
| HCM Lane LOS | N | N | N |
| HCM 95th-tile Q | 0 | 0 | 0 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 0 |
| Intersection LOS | - |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay | 0 | 0 | 0 |
| HCM LOS | - | - | - |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 0% | 0% | 0% |
| Vol Thru, % | 100% | 100% | 100% |
| Vol Right, % | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 0 | 0 | 0 |
| LT Vol | 0 | 0 | 0 |
| Through Vol | 0 | 0 | 0 |
| RT Vol | 0 | 0 | 0 |
| Lane Flow Rate | 0 | 0 | 0 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0 | 0 | 0 |
| Departure Headway (Hd) | 3.934 | 3.934 | 3.934 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 0 | 0 | 0 |
| Service Time | 1.934 | 1.934 | 1.934 |
| HCM Lane V/C Ratio | 0 | 0 | 0 |
| HCM Control Delay | 6.9 | 6.9 | 6.9 |
| HCM Lane LOS | N | N | N |
| HCM 95th-tile Q | 0 | 0 | 0 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 0 |
| Intersection LOS | - |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 1 |

| Approach | EB | WB | | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | | |
| Opposing Lanes | 1 | 1 | | 0 |
| Conflicting Approach Left | SB | | | WB |
| Conflicting Lanes Left | 2 | 0 | | 1 |
| Conflicting Approach Right | | SB | | EB |
| Conflicting Lanes Right | 0 | 2 | | 1 |
| HCM Control Delay | 0 | 0 | | 0 |
| HCM LOS | - | - | | - |

| Lane | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|
| Vol Left, % | 0% | 0% | 0% | 0% |
| Vol Thru, % | 100% | 100% | 100% | 100% |
| Vol Right, % | 0% | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 0 | 0 | 0 | 0 |
| LT Vol | 0 | 0 | 0 | 0 |
| Through Vol | 0 | 0 | 0 | 0 |
| RT Vol | 0 | 0 | 0 | 0 |
| Lane Flow Rate | 0 | 0 | 0 | 0 |
| Geometry Grp | 2 | 2 | 7 | 7 |
| Degree of Util (X) | 0 | 0 | 0 | 0 |
| Departure Headway (Hd) | 3.934 | 3.934 | 4.534 | 4.534 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 0 | 0 | 0 | 0 |
| Service Time | 1.934 | 1.934 | 2.234 | 2.234 |
| HCM Lane V/C Ratio | 0 | 0 | 0 | 0 |
| HCM Control Delay | 6.9 | 6.9 | 7.2 | 7.2 |
| HCM Lane LOS | N | N | N | N |
| HCM 95th-tile Q | 0 | 0 | 0 | 0 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 0 |
| Intersection LOS | - |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay | 0 | 0 | 0 |
| HCM LOS | - | - | - |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 0% | 0% | 0% |
| Vol Thru, % | 100% | 100% | 100% |
| Vol Right, % | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 0 | 0 | 0 |
| LT Vol | 0 | 0 | 0 |
| Through Vol | 0 | 0 | 0 |
| RT Vol | 0 | 0 | 0 |
| Lane Flow Rate | 0 | 0 | 0 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0 | 0 | 0 |
| Departure Headway (Hd) | 3.934 | 3.934 | 3.934 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 0 | 0 | 0 |
| Service Time | 1.934 | 1.934 | 1.934 |
| HCM Lane V/C Ratio | 0 | 0 | 0 |
| HCM Control Delay | 6.9 | 6.9 | 6.9 |
| HCM Lane LOS | N | N | N |
| HCM 95th-tile Q | 0 | 0 | 0 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 6.8 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 0 | 7.2 | 6.4 | 0 |
| HCM LOS | - | A | A | - |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 0% | 0% | 100% | 0% |
| Vol Thru, % | 0% | 100% | 0% | 100% |
| Vol Right, % | 100% | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 10 | 0 | 10 | 0 |
| LT Vol | 0 | 0 | 10 | 0 |
| Through Vol | 0 | 0 | 0 | 0 |
| RT Vol | 10 | 0 | 0 | 0 |
| Lane Flow Rate | 11 | 0 | 11 | 0 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.01 | 0 | 0.013 | 0 |
| Departure Headway (Hd) | 3.354 | 3.962 | 4.154 | 3.962 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 1072 | 0 | 867 | 0 |
| Service Time | 1.359 | 1.965 | 2.154 | 1.968 |
| HCM Lane V/C Ratio | 0.01 | 0 | 0.013 | 0 |
| HCM Control Delay | 6.4 | 7 | 7.2 | 7 |
| HCM Lane LOS | A | N | A | N |
| HCM 95th-tile Q | 0 | 0 | 0 | 0 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1 | 1 | 1 | 0 | - | 0 |
| Stage 1 | 1 | - | - | - | - | - |
| Stage 2 | 0 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 1022 | 1084 | 1622 | - | - | - |
| Stage 1 | 1022 | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 1022 | 1084 | 1622 | - | - | - |
| Mov Cap-2 Maneuver | 1022 | - | - | - | - | - |
| Stage 1 | 1022 | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1622 | - | - | - | - |
| HCM Lane V/C Ratio | - | - | - | - | - |
| HCM Control Delay (s) | 0 | - | 0 | - | - |
| HCM Lane LOS | A | - | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 0 |
| Intersection LOS | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 0 | 0 | 0 | 0 |
| HCM LOS | - | - | - | - |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 0% | 0% | 0% | 0% |
| Vol Thru, % | 100% | 100% | 100% | 100% |
| Vol Right, % | 0% | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 0 | 0 | 0 | 0 |
| LT Vol | 0 | 0 | 0 | 0 |
| Through Vol | 0 | 0 | 0 | 0 |
| RT Vol | 0 | 0 | 0 | 0 |
| Lane Flow Rate | 0 | 0 | 0 | 0 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0 | 0 | 0 | 0 |
| Departure Headway (Hd) | 3.934 | 3.934 | 3.934 | 3.934 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 0 | 0 | 0 | 0 |
| Service Time | 1.934 | 1.934 | 1.934 | 1.934 |
| HCM Lane V/C Ratio | 0 | 0 | 0 | 0 |
| HCM Control Delay | 6.9 | 6.9 | 6.9 | 6.9 |
| HCM Lane LOS | N | N | N | N |
| HCM 95th-tile Q | 0 | 0 | 0 | 0 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 0 |
| Intersection LOS | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 0 | 0 | 0 | 0 |
| HCM LOS | - | - | - | - |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 0% | 0% | 0% | 0% |
| Vol Thru, % | 100% | 100% | 100% | 100% |
| Vol Right, % | 0% | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 0 | 0 | 0 | 0 |
| LT Vol | 0 | 0 | 0 | 0 |
| Through Vol | 0 | 0 | 0 | 0 |
| RT Vol | 0 | 0 | 0 | 0 |
| Lane Flow Rate | 0 | 0 | 0 | 0 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0 | 0 | 0 | 0 |
| Departure Headway (Hd) | 3.934 | 3.934 | 3.934 | 3.934 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 0 | 0 | 0 | 0 |
| Service Time | 1.934 | 1.934 | 1.934 | 1.934 |
| HCM Lane V/C Ratio | 0 | 0 | 0 | 0 |
| HCM Control Delay | 6.9 | 6.9 | 6.9 | 6.9 |
| HCM Lane LOS | N | N | N | N |
| HCM 95th-tile Q | 0 | 0 | 0 | 0 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 5 | 5 | 5 | 170 | 105 | 5 |
| Future Vol, veh/h | 5 | 5 | 5 | 170 | 105 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 5 | 5 | 5 | 185 | 114 | 5 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 312 | 117 | 119 | 0 | - | 0 |
| Stage 1 | 117 | - | - | - | - | - |
| Stage 2 | 195 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 681 | 935 | 1469 | - | - | - |
| Stage 1 | 908 | - | - | - | - | - |
| Stage 2 | 838 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 678 | 935 | 1469 | - | - | - |
| Mov Cap-2 Maneuver | 678 | - | - | - | - | - |
| Stage 1 | 904 | - | - | - | - | - |
| Stage 2 | 838 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.6 | 0.2 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1469 | - | 786 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | 0.014 | - | - |
| HCM Control Delay (s) | 7.5 | 0 | 9.6 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 15 | 0 | 0 | 5 |
| Future Vol, veh/h | 0 | 0 | 15 | 0 | 0 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 400 | - | - | 300 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 16 | 0 | 0 | 5 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 21 | 16 | 0 | 0 | 16 | 0 |
| Stage 1 | 16 | - | - | - | - | - |
| Stage 2 | 5 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 996 | 1063 | - | - | 1602 | - |
| Stage 1 | 1007 | - | - | - | - | - |
| Stage 2 | 1018 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 996 | 1063 | - | - | 1602 | - |
| Mov Cap-2 Maneuver | 996 | - | - | - | - | - |
| Stage 1 | 1007 | - | - | - | - | - |
| Stage 2 | 1018 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | - | 1602 | - |
| HCM Lane V/C Ratio | - | - | - | - | - | - |
| HCM Control Delay (s) | - | - | 0 | 0 | 0 | - |
| HCM Lane LOS | - | - | A | A | A | - |
| HCM 95th %tile Q(veh) | - | - | - | - | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 25 | 0 | 0 | 15 | 5 | 10 |
| Future Vol, veh/h | 25 | 0 | 0 | 15 | 5 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 27 | 0 | 0 | 16 | 5 | 11 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 27 | 11 | 16 | 0 | - | 0 |
| Stage 1 | 11 | - | - | - | - | - |
| Stage 2 | 16 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 988 | 1070 | 1602 | - | - | - |
| Stage 1 | 1012 | - | - | - | - | - |
| Stage 2 | 1007 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 988 | 1070 | 1602 | - | - | - |
| Mov Cap-2 Maneuver | 988 | - | - | - | - | - |
| Stage 1 | 1012 | - | - | - | - | - |
| Stage 2 | 1007 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 8.7 | 0 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1602 | - | 988 | - | - |
| HCM Lane V/C Ratio | - | - | 0.028 | - | - |
| HCM Control Delay (s) | 0 | - | 8.7 | - | - |
| HCM Lane LOS | A | - | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 6.5 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 15 | 0 | 0 | 0 | 0 | 5 |
| Future Vol, veh/h | 15 | 0 | 0 | 0 | 0 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 100 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 0 | 0 | 0 | 0 | 5 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3 | 3 | 5 | 0 | - | 0 |
| Stage 1 | 3 | - | - | - | - | - |
| Stage 2 | 0 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 1019 | 1081 | 1616 | - | - | - |
| Stage 1 | 1020 | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 1019 | 1081 | 1616 | - | - | - |
| Mov Cap-2 Maneuver | 1019 | - | - | - | - | - |
| Stage 1 | 1020 | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 8.6 | 0 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1616 | - | 1019 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.016 | - | - | - |
| HCM Control Delay (s) | 0 | - | 8.6 | 0 | - | - |
| HCM Lane LOS | A | - | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0 | - | - | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.6 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 30 | 5 | 5 | 5 | 5 | 30 | 5 | 70 | 5 | 5 | 15 | 5 |
| Future Vol, veh/h | 30 | 5 | 5 | 5 | 5 | 30 | 5 | 70 | 5 | 5 | 15 | 5 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 33 | 5 | 5 | 5 | 5 | 33 | 5 | 76 | 5 | 5 | 16 | 5 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 1 | 1 |
| HCM Control Delay | 7.6 | 7 | 8 | 7.5 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 75% | 12% | 100% | 0% |
| Vol Thru, % | 0% | 93% | 12% | 12% | 0% | 75% |
| Vol Right, % | 0% | 7% | 12% | 75% | 0% | 25% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 5 | 75 | 40 | 40 | 5 | 20 |
| LT Vol | 5 | 0 | 30 | 5 | 5 | 0 |
| Through Vol | 0 | 70 | 5 | 5 | 0 | 15 |
| RT Vol | 0 | 5 | 5 | 30 | 0 | 5 |
| Lane Flow Rate | 5 | 82 | 43 | 43 | 5 | 22 |
| Geometry Grp | 7 | 7 | 2 | 2 | 7 | 7 |
| Degree of Util (X) | 0.008 | 0.105 | 0.051 | 0.046 | 0.008 | 0.028 |
| Departure Headway (Hd) | 5.203 | 4.655 | 4.234 | 3.835 | 5.234 | 4.557 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 686 | 767 | 832 | 940 | 680 | 780 |
| Service Time | 2.948 | 2.4 | 2.331 | 1.835 | 2.994 | 2.317 |
| HCM Lane V/C Ratio | 0.007 | 0.107 | 0.052 | 0.046 | 0.007 | 0.028 |
| HCM Control Delay | 8 | 8 | 7.6 | 7 | 8 | 7.4 |
| HCM Lane LOS | A | A | A | A | A | A |
| HCM 95th-tile Q | 0 | 0.4 | 0.2 | 0.1 | 0 | 0.1 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.3 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 25 | 5 | 5 | 5 | 5 | 25 | 5 | 30 | 5 | 5 | 15 | 5 |
| Future Vol, veh/h | 25 | 5 | 5 | 5 | 5 | 25 | 5 | 30 | 5 | 5 | 15 | 5 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 27 | 5 | 5 | 5 | 5 | 27 | 5 | 33 | 5 | 5 | 16 | 5 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 1 | 1 |
| HCM Control Delay | 7.4 | 6.9 | 7.6 | 7.5 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 71% | 14% | 100% | 0% |
| Vol Thru, % | 0% | 86% | 14% | 14% | 0% | 75% |
| Vol Right, % | 0% | 14% | 14% | 71% | 0% | 25% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 5 | 35 | 35 | 35 | 5 | 20 |
| LT Vol | 5 | 0 | 25 | 5 | 5 | 0 |
| Through Vol | 0 | 30 | 5 | 5 | 0 | 15 |
| RT Vol | 0 | 5 | 5 | 25 | 0 | 5 |
| Lane Flow Rate | 5 | 38 | 38 | 38 | 5 | 22 |
| Geometry Grp | 7 | 7 | 2 | 2 | 7 | 7 |
| Degree of Util (X) | 0.008 | 0.048 | 0.044 | 0.039 | 0.008 | 0.027 |
| Departure Headway (Hd) | 5.183 | 4.582 | 4.14 | 3.682 | 5.192 | 4.515 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 690 | 780 | 858 | 962 | 688 | 791 |
| Service Time | 2.919 | 2.318 | 2.197 | 1.744 | 2.932 | 2.255 |
| HCM Lane V/C Ratio | 0.007 | 0.049 | 0.044 | 0.04 | 0.007 | 0.028 |
| HCM Control Delay | 8 | 7.6 | 7.4 | 6.9 | 8 | 7.4 |
| HCM Lane LOS | A | A | A | A | A | A |
| HCM 95th-tile Q | 0 | 0.2 | 0.1 | 0.1 | 0 | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 6.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | ↰ | ↱ | | ↰ | ↱ | |
| Traffic Vol, veh/h | 20 | 5 | 0 | 0 | 5 | 15 | 0 | 5 | 0 | 10 | 5 | 10 |
| Future Vol, veh/h | 20 | 5 | 0 | 0 | 5 | 15 | 0 | 5 | 0 | 10 | 5 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 75 | - | - | 75 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 22 | 5 | 0 | 0 | 5 | 16 | 0 | 5 | 0 | 11 | 5 | 11 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 49 | 38 | 11 | 40 | 43 | 5 | 16 | 0 | 0 | 5 | 0 | 0 |
| Stage 1 | 33 | 33 | - | 5 | 5 | - | - | - | - | - | - | - |
| Stage 2 | 16 | 5 | - | 35 | 38 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 951 | 854 | 1070 | 964 | 849 | 1078 | 1602 | - | - | 1616 | - | - |
| Stage 1 | 983 | 868 | - | 1017 | 892 | - | - | - | - | - | - | - |
| Stage 2 | 1004 | 892 | - | 981 | 863 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 927 | 848 | 1070 | 954 | 843 | 1078 | 1602 | - | - | 1616 | - | - |
| Mov Cap-2 Maneuver | 927 | 848 | - | 954 | 843 | - | - | - | - | - | - | - |
| Stage 1 | 983 | 862 | - | 1017 | 892 | - | - | - | - | - | - | - |
| Stage 2 | 983 | 892 | - | 968 | 857 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 9.1 | 8.7 | 0 | 2.9 |
| HCM LOS | A | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1602 | - | - | 910 | 1008 | 1616 | - | - |
| HCM Lane V/C Ratio | - | - | - | 0.03 | 0.022 | 0.007 | - | - |
| HCM Control Delay (s) | 0 | - | - | 9.1 | 8.7 | 7.2 | - | - |
| HCM Lane LOS | A | - | - | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 0.1 | 0 | - | - |

# Appendix B:
# Existing PM Peak Hour Intersection Level of Service Analysis

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 26.7 |
| Intersection LOS | D |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 35 | 195 | 90 | 15 | 115 | 130 | 45 | 175 | 15 | 240 | 285 | 30 |
| Future Vol, veh/h | 35 | 195 | 90 | 15 | 115 | 130 | 45 | 175 | 15 | 240 | 285 | 30 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 38 | 212 | 98 | 16 | 125 | 141 | 49 | 190 | 16 | 261 | 310 | 33 |
| Number of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 3 | 2 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 2 | 3 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 3 | 2 |
| HCM Control Delay | 31.8 | 16 | 20.4 | 31.4 |
| HCM LOS | D | C | C | D |

| Lane | NBLn1 | NBLn2 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | WBLn3 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 100% | 0% | 100% | 0% | 0% | 100% | 0% |
| Vol Thru, % | 0% | 92% | 0% | 68% | 0% | 100% | 0% | 0% | 90% |
| Vol Right, % | 0% | 8% | 0% | 32% | 0% | 0% | 100% | 0% | 10% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 45 | 190 | 35 | 285 | 15 | 115 | 130 | 240 | 315 |
| LT Vol | 45 | 0 | 35 | 0 | 15 | 0 | 0 | 240 | 0 |
| Through Vol | 0 | 175 | 0 | 195 | 0 | 115 | 0 | 0 | 285 |
| RT Vol | 0 | 15 | 0 | 90 | 0 | 0 | 130 | 0 | 30 |
| Lane Flow Rate | 49 | 207 | 38 | 310 | 16 | 125 | 141 | 261 | 342 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.133 | 0.528 | 0.101 | 0.755 | 0.045 | 0.325 | 0.338 | 0.641 | 0.786 |
| Departure Headway (Hd) | 9.781 | 9.207 | 9.523 | 8.774 | 9.869 | 9.35 | 8.623 | 8.844 | 8.263 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 366 | 390 | 376 | 412 | 362 | 384 | 417 | 407 | 438 |
| Service Time | 7.554 | 6.98 | 7.286 | 6.536 | 7.638 | 7.119 | 6.391 | 6.604 | 6.023 |
| HCM Lane V/C Ratio | 0.134 | 0.531 | 0.101 | 0.752 | 0.044 | 0.326 | 0.338 | 0.641 | 0.781 |
| HCM Control Delay | 14.1 | 21.9 | 13.4 | 34.1 | 13.1 | 16.6 | 15.8 | 26.2 | 35.4 |
| HCM Lane LOS | B | C | B | D | B | C | C | D | E |
| HCM 95th-tile Q | 0.5 | 3 | 0.3 | 6.2 | 0.1 | 1.4 | 1.5 | 4.3 | 6.9 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 10.4 |
| Intersection LOS | B |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 250 | 75 | 10 | 145 | 30 | 40 |
| Future Vol, veh/h | 250 | 75 | 10 | 145 | 30 | 40 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 272 | 82 | 11 | 158 | 33 | 43 |
| Number of Lanes | 1 | 0 | 1 | 2 | 1 | 1 |

| Approach | EB | WB | NB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 3 | 1 | 0 |
| Conflicting Approach Left | | NB | EB |
| Conflicting Lanes Left | 0 | 2 | 1 |
| Conflicting Approach Right | NB | | WB |
| Conflicting Lanes Right | 2 | 0 | 3 |
| HCM Control Delay | 12.1 | 7.4 | 8.8 |
| HCM LOS | B | A | A |

| Lane | NBLn1 | NBLn2 | EBLn1 | WBLn1 | WBLn2 | WBLn3 |
|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 0% | 100% | 0% | 0% |
| Vol Thru, % | 0% | 0% | 77% | 0% | 100% | 100% |
| Vol Right, % | 0% | 100% | 23% | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 30 | 40 | 325 | 10 | 73 | 73 |
| LT Vol | 30 | 0 | 0 | 10 | 0 | 0 |
| Through Vol | 0 | 0 | 250 | 0 | 73 | 73 |
| RT Vol | 0 | 40 | 75 | 0 | 0 | 0 |
| Lane Flow Rate | 33 | 43 | 353 | 11 | 79 | 79 |
| Geometry Grp | 8 | 8 | 8 | 7 | 7 | 7 |
| Degree of Util (X) | 0.058 | 0.062 | 0.48 | 0.017 | 0.11 | 0.073 |
| Departure Headway (Hd) | 6.349 | 5.144 | 4.894 | 5.54 | 5.037 | 3.319 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 563 | 694 | 738 | 647 | 712 | 1086 |
| Service Time | 4.093 | 2.888 | 2.623 | 3.268 | 2.764 | 1.019 |
| HCM Lane V/C Ratio | 0.059 | 0.062 | 0.478 | 0.017 | 0.111 | 0.073 |
| HCM Control Delay | 9.5 | 8.2 | 12.1 | 8.4 | 8.4 | 6.3 |
| HCM Lane LOS | A | A | B | A | A | A |
| HCM 95th-tile Q | 0.2 | 0.2 | 2.6 | 0.1 | 0.4 | 0.2 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.7 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 5 | 145 | 50 | 15 | 160 | 5 | 20 | 5 | 5 | 5 | 5 | 5 |
| Future Vol, veh/h | 5 | 145 | 50 | 15 | 160 | 5 | 20 | 5 | 5 | 5 | 5 | 5 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 5 | 158 | 54 | 16 | 174 | 5 | 22 | 5 | 5 | 5 | 5 | 5 |
| Number of Lanes | 1 | 1 | 1 | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 3 | 3 | 3 | 3 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 3 | 3 | 3 | 3 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 3 | 3 | 3 | 3 |
| HCM Control Delay | 8.7 | 8.6 | 8.8 | 8.3 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | NBLn2 | NBLn3 | EBLn1 | EBLn2 | EBLn3 | WBLn1 | WBLn2 | WBLn3 | SBLn1 | SBLn2 | SBLn3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 0% | 100% | 0% | 0% | 100% | 0% | 0% | 100% | 0% | 0% |
| Vol Thru, % | 0% | 100% | 25% | 0% | 100% | 0% | 0% | 100% | 91% | 0% | 100% | 25% |
| Vol Right, % | 0% | 0% | 75% | 0% | 0% | 100% | 0% | 0% | 9% | 0% | 0% | 75% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 20 | 3 | 7 | 5 | 145 | 50 | 15 | 107 | 58 | 5 | 3 | 7 |
| LT Vol | 20 | 0 | 0 | 5 | 0 | 0 | 15 | 0 | 0 | 5 | 0 | 0 |
| Through Vol | 0 | 3 | 2 | 0 | 145 | 0 | 0 | 107 | 53 | 0 | 3 | 2 |
| RT Vol | 0 | 0 | 5 | 0 | 0 | 50 | 0 | 0 | 5 | 0 | 0 | 5 |
| Lane Flow Rate | 22 | 4 | 7 | 5 | 158 | 54 | 16 | 116 | 63 | 5 | 4 | 7 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.037 | 0.006 | 0.01 | 0.008 | 0.222 | 0.066 | 0.025 | 0.164 | 0.089 | 0.009 | 0.006 | 0.01 |
| Departure Headway (Hd) | 6.099 | 5.599 | 5.074 | 5.563 | 5.063 | 4.363 | 5.59 | 5.09 | 5.03 | 6.136 | 5.636 | 5.111 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 587 | 638 | 704 | 645 | 711 | 822 | 642 | 706 | 713 | 583 | 634 | 698 |
| Service Time | 3.84 | 3.34 | 2.815 | 3.285 | 2.785 | 2.085 | 3.314 | 2.814 | 2.754 | 3.88 | 3.38 | 2.855 |
| HCM Lane V/C Ratio | 0.037 | 0.006 | 0.01 | 0.008 | 0.222 | 0.066 | 0.025 | 0.164 | 0.088 | 0.009 | 0.006 | 0.01 |
| HCM Control Delay | 9.1 | 8.4 | 7.9 | 8.3 | 9.2 | 7.4 | 8.5 | 8.8 | 8.2 | 8.9 | 8.4 | 7.9 |
| HCM Lane LOS | A | A | A | A | A | A | A | A | A | A | A | A |
| HCM 95th-tile Q | 0.1 | 0 | 0 | 0 | 0.8 | 0.2 | 0.1 | 0.6 | 0.3 | 0 | 0 | 0 |

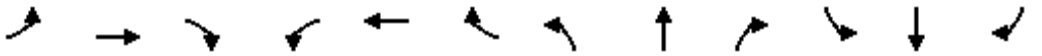
| Intersection | |
|---|---|
| Int Delay, s/veh | 3.2 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 460 | 30 | 150 | 350 | 10 | 145 |
| Future Vol, veh/h | 460 | 30 | 150 | 350 | 10 | 145 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 150 | - | 0 | 25 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 10 | 2 | 2 | 10 | 2 | 2 |
| Mvmt Flow | 500 | 33 | 163 | 380 | 11 | 158 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 533 | 0 | 1223 | 517 |
| Stage 1 | - | - | - | - | 517 | - |
| Stage 2 | - | - | - | - | 706 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1035 | - | 198 | 558 |
| Stage 1 | - | - | - | - | 598 | - |
| Stage 2 | - | - | - | - | 489 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1035 | - | 167 | 558 |
| Mov Cap-2 Maneuver | - | - | - | - | 167 | - |
| Stage 1 | - | - | - | - | 598 | - |
| Stage 2 | - | - | - | - | 412 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 2.7 | 14.9 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 167 | 558 | - | - | 1035 | - |
| HCM Lane V/C Ratio | 0.065 | 0.282 | - | - | 0.158 | - |
| HCM Control Delay (s) | 28.1 | 14 | - | - | 9.1 | - |
| HCM Lane LOS | D | B | - | - | A | - |
| HCM 95th %tile Q(veh) | 0.2 | 1.2 | - | - | 0.6 | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 85 | 100 | 45 | 5 | 85 | 65 | 30 | 300 | 10 | 130 | 505 | 160 |
| Future Volume (veh/h) | 85 | 100 | 45 | 5 | 85 | 65 | 30 | 300 | 10 | 130 | 505 | 160 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 92 | 109 | 49 | 5 | 92 | 71 | 33 | 326 | 11 | 141 | 549 | 174 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 129 | 603 | 267 | 12 | 207 | 147 | 66 | 649 | 22 | 181 | 796 | 675 |
| Arrive On Green | 0.07 | 0.17 | 0.17 | 0.01 | 0.10 | 0.10 | 0.04 | 0.36 | 0.36 | 0.10 | 0.43 | 0.43 |
| Sat Flow, veh/h | 1781 | 3554 | 1571 | 1781 | 1988 | 1406 | 1781 | 1799 | 61 | 1781 | 1870 | 1585 |
| Grp Volume(v), veh/h | 92 | 109 | 49 | 5 | 81 | 82 | 33 | 0 | 337 | 141 | 549 | 174 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1571 | 1781 | 1777 | 1617 | 1781 | 0 | 1859 | 1781 | 1870 | 1585 |
| Q Serve(g_s), s | 2.5 | 1.3 | 1.3 | 0.1 | 2.1 | 2.4 | 0.9 | 0.0 | 7.1 | 3.9 | 11.9 | 3.5 |
| Cycle Q Clear(g_c), s | 2.5 | 1.3 | 1.3 | 0.1 | 2.1 | 2.4 | 0.9 | 0.0 | 7.1 | 3.9 | 11.9 | 3.5 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.87 | 1.00 | | 0.03 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 129 | 603 | 267 | 12 | 185 | 169 | 66 | 0 | 671 | 181 | 796 | 675 |
| V/C Ratio(X) | 0.72 | 0.18 | 0.18 | 0.42 | 0.44 | 0.48 | 0.50 | 0.00 | 0.50 | 0.78 | 0.69 | 0.26 |
| Avail Cap(c_a), veh/h | 339 | 2423 | 1071 | 268 | 1140 | 1038 | 268 | 0 | 671 | 268 | 796 | 675 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.6 | 17.7 | 17.7 | 24.7 | 21.0 | 21.1 | 23.6 | 0.0 | 12.4 | 21.9 | 11.6 | 9.2 |
| Incr Delay (d2), s/veh | 7.2 | 0.1 | 0.3 | 21.6 | 1.6 | 2.1 | 5.9 | 0.0 | 2.7 | 8.3 | 4.8 | 0.9 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.2 | 0.5 | 0.4 | 0.1 | 0.9 | 0.9 | 0.5 | 0.0 | 2.9 | 1.8 | 4.8 | 1.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 29.8 | 17.9 | 18.1 | 46.3 | 22.6 | 23.2 | 29.4 | 0.0 | 15.1 | 30.2 | 16.5 | 10.2 |
| LnGrp LOS | C | B | B | D | C | C | C | A | B | C | B | B |
| Approach Vol, veh/h | | 250 | | | 168 | | | 370 | | | 864 | |
| Approach Delay, s/veh | | 22.3 | | | 23.6 | | | 16.4 | | | 17.4 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 9.6 | 22.5 | 4.8 | 13.0 | 6.3 | 25.7 | 8.1 | 9.7 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 7.5 | 18.0 | 7.5 | 34.0 | 7.5 | 18.0 | 9.5 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 5.9 | 9.1 | 2.1 | 3.3 | 2.9 | 13.9 | 4.5 | 4.4 |
| Green Ext Time (p_c), s | 0.1 | 1.2 | 0.0 | 0.8 | 0.0 | 1.6 | 0.1 | 0.9 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 18.6 |
| HCM 6th LOS | B |

**Notes**

User approved pedestrian interval to be less than phase max green.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 170 | 160 | 125 | 230 | 140 | 65 | 325 | 470 | 170 | 100 | 620 | 85 |
| Future Volume (veh/h) | 170 | 160 | 125 | 230 | 140 | 65 | 325 | 470 | 170 | 100 | 620 | 85 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1752 | 1870 | 1870 | 1870 | 1870 | 1752 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 185 | 174 | 136 | 250 | 152 | 71 | 353 | 511 | 185 | 109 | 674 | 92 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 10 | 2 | 2 | 2 | 2 | 10 | 2 | 2 | 2 |
| Cap, veh/h | 262 | 272 | 229 | 283 | 448 | 378 | 426 | 1056 | 380 | 138 | 1153 | 157 |
| Arrive On Green | 0.08 | 0.15 | 0.15 | 0.17 | 0.24 | 0.24 | 0.12 | 0.41 | 0.41 | 0.08 | 0.37 | 0.37 |
| Sat Flow, veh/h | 3456 | 1870 | 1575 | 1668 | 1870 | 1579 | 3456 | 2557 | 921 | 1781 | 3140 | 428 |
| Grp Volume(v), veh/h | 185 | 174 | 136 | 250 | 152 | 71 | 353 | 354 | 342 | 109 | 381 | 385 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1575 | 1668 | 1870 | 1579 | 1728 | 1777 | 1701 | 1781 | 1777 | 1791 |
| Q Serve(g_s), s | 4.8 | 8.1 | 7.5 | 13.5 | 6.2 | 3.3 | 9.2 | 13.5 | 13.7 | 5.6 | 16.0 | 16.0 |
| Cycle Q Clear(g_c), s | 4.8 | 8.1 | 7.5 | 13.5 | 6.2 | 3.3 | 9.2 | 13.5 | 13.7 | 5.6 | 16.0 | 16.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.54 | 1.00 | | 0.24 |
| Lane Grp Cap(c), veh/h | 262 | 272 | 229 | 283 | 448 | 378 | 426 | 734 | 703 | 138 | 652 | 658 |
| V/C Ratio(X) | 0.71 | 0.64 | 0.59 | 0.88 | 0.34 | 0.19 | 0.83 | 0.48 | 0.49 | 0.79 | 0.58 | 0.59 |
| Avail Cap(c_a), veh/h | 429 | 747 | 629 | 333 | 889 | 750 | 467 | 734 | 703 | 202 | 652 | 658 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 41.8 | 37.3 | 37.0 | 37.5 | 29.1 | 28.0 | 39.6 | 19.9 | 20.0 | 42.0 | 23.6 | 23.6 |
| Incr Delay (d2), s/veh | 3.5 | 2.5 | 2.5 | 20.7 | 0.4 | 0.2 | 11.1 | 2.3 | 2.4 | 12.2 | 3.8 | 3.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.1 | 3.8 | 3.0 | 7.0 | 2.8 | 1.2 | 4.5 | 5.8 | 5.6 | 2.9 | 7.1 | 7.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 45.3 | 39.8 | 39.5 | 58.2 | 29.6 | 28.3 | 50.7 | 22.2 | 22.4 | 54.1 | 27.4 | 27.4 |
| LnGrp LOS | D | D | D | E | C | C | D | C | C | D | C | C |
| Approach Vol, veh/h | | 495 | | | 473 | | | 1049 | | | 875 | |
| Approach Delay, s/veh | | 41.8 | | | 44.5 | | | 31.8 | | | 30.7 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 11.7 | 42.7 | 20.2 | 17.9 | 15.9 | 38.5 | 11.5 | 26.7 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 10.5 | 36.0 | 18.5 | 37.0 | 12.5 | 34.0 | 11.5 | 44.0 |
| Max Q Clear Time (g_c+I1), s | 7.6 | 15.7 | 15.5 | 10.1 | 11.2 | 18.0 | 6.8 | 8.2 |
| Green Ext Time (p_c), s | 0.1 | 4.2 | 0.2 | 1.4 | 0.2 | 4.2 | 0.2 | 1.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 35.3 |
| HCM 6th LOS | D |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 120 | 0 | 250 | 110 | 765 | 0 | 0 | 535 | 490 |
| Future Volume (veh/h) | 0 | 0 | 0 | 120 | 0 | 250 | 110 | 765 | 0 | 0 | 535 | 490 |
| Initial Q (Qb), veh | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | | | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | | | | 1870 | 1870 | 1752 | 1870 | 1870 | 0 | 0 | 1841 | 1841 |
| Adj Flow Rate, veh/h | | | | 130 | 0 | 0 | 120 | 832 | 0 | 0 | 582 | 533 |
| Peak Hour Factor | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | | | | 2 | 2 | 10 | 2 | 2 | 0 | 0 | 4 | 4 |
| Cap, veh/h | | | | 179 | 0 | | 156 | 1322 | 0 | 0 | 962 | 815 |
| Arrive On Green | | | | 0.10 | 0.00 | 0.00 | 0.09 | 0.71 | 0.00 | 0.00 | 0.52 | 0.52 |
| Sat Flow, veh/h | | | | 1781 | 0 | 1485 | 1781 | 1870 | 0 | 0 | 1841 | 1560 |
| Grp Volume(v), veh/h | | | | 130 | 0 | 0 | 120 | 832 | 0 | 0 | 582 | 533 |
| Grp Sat Flow(s),veh/h/ln | | | | 1781 | 0 | 1485 | 1781 | 1870 | 0 | 0 | 1841 | 1560 |
| Q Serve(g_s), s | | | | 3.3 | 0.0 | 0.0 | 3.1 | 11.0 | 0.0 | 0.0 | 10.3 | 11.6 |
| Cycle Q Clear(g_c), s | | | | 3.3 | 0.0 | 0.0 | 3.1 | 11.0 | 0.0 | 0.0 | 10.3 | 11.6 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | | | | 179 | 0 | | 156 | 1322 | 0 | 0 | 962 | 815 |
| V/C Ratio(X) | | | | 0.73 | 0.00 | | 0.77 | 0.63 | 0.00 | 0.00 | 0.61 | 0.65 |
| Avail Cap(c_a), veh/h | | | | 687 | 0 | | 401 | 1322 | 0 | 0 | 962 | 815 |
| HCM Platoon Ratio | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | | | | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | | | | 20.4 | 0.0 | 0.0 | 20.8 | 3.6 | 0.0 | 0.0 | 7.8 | 8.1 |
| Incr Delay (d2), s/veh | | | | 5.5 | 0.0 | 0.0 | 7.7 | 2.3 | 0.0 | 0.0 | 2.8 | 4.1 |
| Initial Q Delay(d3),s/veh | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | | | | 1.5 | 0.0 | 0.0 | 1.5 | 1.9 | 0.0 | 0.0 | 3.4 | 3.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 25.9 | 0.0 | 0.0 | 28.5 | 5.9 | 0.0 | 0.0 | 10.6 | 12.2 |
| LnGrp LOS | | | | C | A | | C | A | A | A | B | B |
| Approach Vol, veh/h | | | | | 130 | A | | 952 | | | 1115 | |
| Approach Delay, s/veh | | | | | 25.9 | | | 8.7 | | | 11.3 | |
| Approach LOS | | | | | C | | | A | | | B | |

| Timer - Assigned Phs | 2 | | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 37.5 | | 8.6 | 28.9 | | 9.2 |
| Change Period (Y+Rc), s | 4.5 | | 4.5 | 4.5 | | 4.5 |
| Max Green Setting (Gmax), s | 33.0 | | 10.5 | 18.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | 13.0 | | 5.1 | 13.6 | | 5.3 |
| Green Ext Time (p_c), s | 6.0 | | 0.1 | 2.3 | | 0.5 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 11.1 |
| HCM 6th LOS | | B |

**Notes**

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 480 | 0 | 300 | 0 | 0 | 0 | 0 | 395 | 55 | 160 | 495 | 0 |
| Future Volume (veh/h) | 480 | 0 | 300 | 0 | 0 | 0 | 0 | 395 | 55 | 160 | 495 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | | | | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1870 | 1870 | | | | 0 | 1870 | 1870 | 1826 | 1870 | 0 |
| Adj Flow Rate, veh/h | 522 | 0 | 326 | | | | 0 | 429 | 60 | 174 | 538 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 2 | 2 | | | | 0 | 2 | 2 | 5 | 2 | 0 |
| Cap, veh/h | 572 | 0 | 509 | | | | 0 | 528 | 74 | 215 | 988 | 0 |
| Arrive On Green | 0.32 | 0.00 | 0.32 | | | | 0.00 | 0.33 | 0.33 | 0.12 | 0.53 | 0.00 |
| Sat Flow, veh/h | 1781 | 0 | 1585 | | | | 0 | 1605 | 225 | 1739 | 1870 | 0 |
| Grp Volume(v), veh/h | 522 | 0 | 326 | | | | 0 | 0 | 489 | 174 | 538 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1585 | | | | 0 | 0 | 1830 | 1739 | 1870 | 0 |
| Q Serve(g_s), s | 16.8 | 0.0 | 10.5 | | | | 0.0 | 0.0 | 14.6 | 5.8 | 11.4 | 0.0 |
| Cycle Q Clear(g_c), s | 16.8 | 0.0 | 10.5 | | | | 0.0 | 0.0 | 14.6 | 5.8 | 11.4 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | | | | 0.00 | | 0.12 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 572 | 0 | 509 | | | | 0 | 0 | 602 | 215 | 988 | 0 |
| V/C Ratio(X) | 0.91 | 0.00 | 0.64 | | | | 0.00 | 0.00 | 0.81 | 0.81 | 0.54 | 0.00 |
| Avail Cap(c_a), veh/h | 582 | 0 | 518 | | | | 0 | 0 | 602 | 219 | 988 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | | | | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 19.4 | 0.0 | 17.3 | | | | 0.0 | 0.0 | 18.3 | 25.5 | 9.3 | 0.0 |
| Incr Delay (d2), s/veh | 18.7 | 0.0 | 2.6 | | | | 0.0 | 0.0 | 11.4 | 19.7 | 2.2 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 9.0 | 0.0 | 3.7 | | | | 0.0 | 0.0 | 7.3 | 3.4 | 4.1 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 38.2 | 0.0 | 19.9 | | | | 0.0 | 0.0 | 29.7 | 45.1 | 11.5 | 0.0 |
| LnGrp LOS | D | A | B | | | | A | A | C | D | B | A |
| Approach Vol, veh/h | | 848 | | | | | | 489 | | | 712 | |
| Approach Delay, s/veh | | 31.1 | | | | | | 29.7 | | | 19.7 | |
| Approach LOS | | C | | | | | | C | | | B | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 11.9 | 24.1 | | 23.6 | | 36.0 | | | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | 4.5 | | 4.5 | | | | | | |
| Max Green Setting (Gmax), s | 7.5 | 19.5 | | 19.5 | | 31.5 | | | | | | |
| Max Q Clear Time (g_c+I1), s | 7.8 | 16.6 | | 18.8 | | 13.4 | | | | | | |
| Green Ext Time (p_c), s | 0.0 | 0.9 | | 0.4 | | 3.2 | | | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 26.8 |
| HCM 6th LOS | C |

| Intersection | |
|---|---|
| Int Delay, s/veh | 11.5 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↑ | ↑ | | ↰ | ↱ |
| Traffic Vol, veh/h | 0 | 605 | 440 | 0 | 180 | 60 |
| Future Vol, veh/h | 0 | 605 | 440 | 0 | 180 | 60 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 25 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 658 | 478 | 0 | 196 | 65 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | 1136 | 478 |
| Stage 1 | - | - | - | - | 478 | - |
| Stage 2 | - | - | - | - | 658 | - |
| Critical Hdwy | - | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | 0 | 223 | 587 |
| Stage 1 | 0 | - | - | 0 | 624 | - |
| Stage 2 | 0 | - | - | 0 | 515 | - |
| Platoon blocked, % | | - | - | | | |
| Mov Cap-1 Maneuver | - | - | - | - | 223 | 587 |
| Mov Cap-2 Maneuver | - | - | - | - | 223 | - |
| Stage 1 | - | - | - | - | 624 | - |
| Stage 2 | - | - | - | - | 515 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 61.5 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBT | WBT | SBLn1 | SBLn2 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | 223 | 587 |
| HCM Lane V/C Ratio | - | - | 0.877 | 0.111 |
| HCM Control Delay (s) | - | - | 78 | 11.9 |
| HCM Lane LOS | - | - | F | B |
| HCM 95th %tile Q(veh) | - | - | 7 | 0.4 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 121.1 |
| Intersection LOS | F |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 270 | 405 | 110 | 0 | 5 | 5 | 50 | 70 | 25 | 55 | 65 | 385 |
| Future Vol, veh/h | 270 | 405 | 110 | 0 | 5 | 5 | 50 | 70 | 25 | 55 | 65 | 385 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 293 | 440 | 120 | 0 | 5 | 5 | 54 | 76 | 27 | 60 | 71 | 418 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 1 | 1 |
| HCM Control Delay | 205.9 | 10.9 | 14 | 22.3 |
| HCM LOS | F | B | B | C |

| Lane | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Vol Left, % | 42% | 0% | 34% | 0% | 46% | 0% |
| Vol Thru, % | 58% | 0% | 52% | 50% | 54% | 0% |
| Vol Right, % | 0% | 100% | 14% | 50% | 0% | 100% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 120 | 25 | 785 | 10 | 120 | 385 |
| LT Vol | 50 | 0 | 270 | 0 | 55 | 0 |
| Through Vol | 70 | 0 | 405 | 5 | 65 | 0 |
| RT Vol | 0 | 25 | 110 | 5 | 0 | 385 |
| Lane Flow Rate | 130 | 27 | 853 | 11 | 130 | 418 |
| Geometry Grp | 7 | 7 | 2 | 2 | 7 | 7 |
| Degree of Util (X) | 0.274 | 0.05 | 1.396 | 0.021 | 0.254 | 0.707 |
| Departure Headway (Hd) | 8.766 | 7.816 | 5.89 | 7.752 | 8.061 | 7.099 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 412 | 461 | 623 | 465 | 449 | 515 |
| Service Time | 6.466 | 5.516 | 3.89 | 5.752 | 5.761 | 4.799 |
| HCM Lane V/C Ratio | 0.316 | 0.059 | 1.369 | 0.024 | 0.29 | 0.812 |
| HCM Control Delay | 14.7 | 10.9 | 205.9 | 10.9 | 13.5 | 25.1 |
| HCM Lane LOS | B | B | F | B | B | D |
| HCM 95th-tile Q | 1.1 | 0.2 | 38.6 | 0.1 | 1 | 5.6 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 20.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 315 | 0 | 50 | 80 | 265 | 0 | 0 | 190 | 35 |
| Future Vol, veh/h | 0 | 0 | 0 | 315 | 0 | 50 | 80 | 265 | 0 | 0 | 190 | 35 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | 25 | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 1 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 342 | 0 | 54 | 87 | 288 | 0 | 0 | 207 | 38 |

| Major/Minor | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 688 | - | 288 | 245 | 0 | - | - | - | 0 |
| Stage 1 | 462 | - | - | - | - | - | - | - | - |
| Stage 2 | 226 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 6.42 | - | 6.22 | 4.12 | - | - | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | - | 3.318 | 2.218 | - | - | - | - | - |
| Pot Cap-1 Maneuver | 412 | 0 | 751 | 1321 | - | 0 | 0 | - | - |
| Stage 1 | 634 | 0 | - | - | - | 0 | 0 | - | - |
| Stage 2 | 812 | 0 | - | - | - | 0 | 0 | - | - |
| Platoon blocked, % | | | | | - | | | - | - |
| Mov Cap-1 Maneuver | 380 | 0 | 751 | 1321 | - | - | - | - | - |
| Mov Cap-2 Maneuver | 380 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 585 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 812 | 0 | - | - | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 51.5 | 1.8 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | WBLn1 | WBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1321 | - | 380 | 751 | - | - |
| HCM Lane V/C Ratio | 0.066 | - | 0.901 | 0.072 | - | - |
| HCM Control Delay (s) | 7.9 | 0 | 58.1 | 10.2 | - | - |
| HCM Lane LOS | A | A | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | 9.2 | 0.2 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 100 | 0 | 0 | 225 |
| Future Vol, veh/h | 0 | 0 | 100 | 0 | 0 | 225 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 109 | 0 | 0 | 245 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 354 | 109 | 0 | 0 | 109 | 0 |
| Stage 1 | 109 | - | - | - | - | - |
| Stage 2 | 245 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 644 | 945 | - | - | 1481 | - |
| Stage 1 | 916 | - | - | - | - | - |
| Stage 2 | 796 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 644 | 945 | - | - | 1481 | - |
| Mov Cap-2 Maneuver | 644 | - | - | - | - | - |
| Stage 1 | 916 | - | - | - | - | - |
| Stage 2 | 796 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | 1481 | - |
| HCM Lane V/C Ratio | - | - | - | - | - |
| HCM Control Delay (s) | - | - | 0 | 0 | - |
| HCM Lane LOS | - | - | A | A | - |
| HCM 95th %tile Q(veh) | - | - | - | 0 | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 0 |
| Intersection LOS | - |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay | 0 | 0 | 0 |
| HCM LOS | - | - | - |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 0% | 0% | 0% |
| Vol Thru, % | 100% | 100% | 100% |
| Vol Right, % | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 0 | 0 | 0 |
| LT Vol | 0 | 0 | 0 |
| Through Vol | 0 | 0 | 0 |
| RT Vol | 0 | 0 | 0 |
| Lane Flow Rate | 0 | 0 | 0 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0 | 0 | 0 |
| Departure Headway (Hd) | 3.934 | 3.934 | 3.934 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 0 | 0 | 0 |
| Service Time | 1.934 | 1.934 | 1.934 |
| HCM Lane V/C Ratio | 0 | 0 | 0 |
| HCM Control Delay | 6.9 | 6.9 | 6.9 |
| HCM Lane LOS | N | N | N |
| HCM 95th-tile Q | 0 | 0 | 0 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 0 |
| Intersection LOS | - |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay | 0 | 0 | 0 |
| HCM LOS | - | - | - |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 0% | 0% | 0% |
| Vol Thru, % | 100% | 100% | 100% |
| Vol Right, % | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 0 | 0 | 0 |
| LT Vol | 0 | 0 | 0 |
| Through Vol | 0 | 0 | 0 |
| RT Vol | 0 | 0 | 0 |
| Lane Flow Rate | 0 | 0 | 0 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0 | 0 | 0 |
| Departure Headway (Hd) | 3.934 | 3.934 | 3.934 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 0 | 0 | 0 |
| Service Time | 1.934 | 1.934 | 1.934 |
| HCM Lane V/C Ratio | 0 | 0 | 0 |
| HCM Control Delay | 6.9 | 6.9 | 6.9 |
| HCM Lane LOS | N | N | N |
| HCM 95th-tile Q | 0 | 0 | 0 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 0 |
| Intersection LOS | - |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 1 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 2 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 2 | 1 |
| HCM Control Delay | 0 | 0 | 0 |
| HCM LOS | - | - | - |

| Lane | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|
| Vol Left, % | 0% | 0% | 0% | 0% |
| Vol Thru, % | 100% | 100% | 100% | 100% |
| Vol Right, % | 0% | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 0 | 0 | 0 | 0 |
| LT Vol | 0 | 0 | 0 | 0 |
| Through Vol | 0 | 0 | 0 | 0 |
| RT Vol | 0 | 0 | 0 | 0 |
| Lane Flow Rate | 0 | 0 | 0 | 0 |
| Geometry Grp | 2 | 2 | 7 | 7 |
| Degree of Util (X) | 0 | 0 | 0 | 0 |
| Departure Headway (Hd) | 3.934 | 3.934 | 4.534 | 4.534 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 0 | 0 | 0 | 0 |
| Service Time | 1.934 | 1.934 | 2.234 | 2.234 |
| HCM Lane V/C Ratio | 0 | 0 | 0 | 0 |
| HCM Control Delay | 6.9 | 6.9 | 7.2 | 7.2 |
| HCM Lane LOS | N | N | N | N |
| HCM 95th-tile Q | 0 | 0 | 0 | 0 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 0 |
| Intersection LOS | - |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay | 0 | 0 | 0 |
| HCM LOS | - | - | - |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 0% | 0% | 0% |
| Vol Thru, % | 100% | 100% | 100% |
| Vol Right, % | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 0 | 0 | 0 |
| LT Vol | 0 | 0 | 0 |
| Through Vol | 0 | 0 | 0 |
| RT Vol | 0 | 0 | 0 |
| Lane Flow Rate | 0 | 0 | 0 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0 | 0 | 0 |
| Departure Headway (Hd) | 3.934 | 3.934 | 3.934 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 0 | 0 | 0 |
| Service Time | 1.934 | 1.934 | 1.934 |
| HCM Lane V/C Ratio | 0 | 0 | 0 |
| HCM Control Delay | 6.9 | 6.9 | 6.9 |
| HCM Lane LOS | N | N | N |
| HCM 95th-tile Q | 0 | 0 | 0 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 6.8 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 0 | 7.2 | 6.4 | 0 |
| HCM LOS | - | A | A | - |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 0% | 0% | 100% | 0% |
| Vol Thru, % | 0% | 100% | 0% | 100% |
| Vol Right, % | 100% | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 10 | 0 | 10 | 0 |
| LT Vol | 0 | 0 | 10 | 0 |
| Through Vol | 0 | 0 | 0 | 0 |
| RT Vol | 10 | 0 | 0 | 0 |
| Lane Flow Rate | 11 | 0 | 11 | 0 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.01 | 0 | 0.013 | 0 |
| Departure Headway (Hd) | 3.354 | 3.962 | 4.154 | 3.962 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 1072 | 0 | 867 | 0 |
| Service Time | 1.359 | 1.965 | 2.154 | 1.968 |
| HCM Lane V/C Ratio | 0.01 | 0 | 0.013 | 0 |
| HCM Control Delay | 6.4 | 7 | 7.2 | 7 |
| HCM Lane LOS | A | N | A | N |
| HCM 95th-tile Q | 0 | 0 | 0 | 0 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1 | 1 | 1 | 0 | - | 0 |
| Stage 1 | 1 | - | - | - | - | - |
| Stage 2 | 0 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 1022 | 1084 | 1622 | - | - | - |
| Stage 1 | 1022 | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 1022 | 1084 | 1622 | - | - | - |
| Mov Cap-2 Maneuver | 1022 | - | - | - | - | - |
| Stage 1 | 1022 | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1622 | - | - | - | - |
| HCM Lane V/C Ratio | - | - | - | - | - |
| HCM Control Delay (s) | 0 | - | 0 | - | - |
| HCM Lane LOS | A | - | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 0 |
| Intersection LOS | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 0 | 0 | 0 | 0 |
| HCM LOS | - | - | - | - |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 0% | 0% | 0% | 0% |
| Vol Thru, % | 100% | 100% | 100% | 100% |
| Vol Right, % | 0% | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 0 | 0 | 0 | 0 |
| LT Vol | 0 | 0 | 0 | 0 |
| Through Vol | 0 | 0 | 0 | 0 |
| RT Vol | 0 | 0 | 0 | 0 |
| Lane Flow Rate | 0 | 0 | 0 | 0 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0 | 0 | 0 | 0 |
| Departure Headway (Hd) | 3.934 | 3.934 | 3.934 | 3.934 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 0 | 0 | 0 | 0 |
| Service Time | 1.934 | 1.934 | 1.934 | 1.934 |
| HCM Lane V/C Ratio | 0 | 0 | 0 | 0 |
| HCM Control Delay | 6.9 | 6.9 | 6.9 | 6.9 |
| HCM Lane LOS | N | N | N | N |
| HCM 95th-tile Q | 0 | 0 | 0 | 0 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 0 |
| Intersection LOS | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 0 | 0 | 0 | 0 |
| HCM LOS | - | - | - | - |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 0% | 0% | 0% | 0% |
| Vol Thru, % | 100% | 100% | 100% | 100% |
| Vol Right, % | 0% | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 0 | 0 | 0 | 0 |
| LT Vol | 0 | 0 | 0 | 0 |
| Through Vol | 0 | 0 | 0 | 0 |
| RT Vol | 0 | 0 | 0 | 0 |
| Lane Flow Rate | 0 | 0 | 0 | 0 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0 | 0 | 0 | 0 |
| Departure Headway (Hd) | 3.934 | 3.934 | 3.934 | 3.934 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 0 | 0 | 0 | 0 |
| Service Time | 1.934 | 1.934 | 1.934 | 1.934 |
| HCM Lane V/C Ratio | 0 | 0 | 0 | 0 |
| HCM Control Delay | 6.9 | 6.9 | 6.9 | 6.9 |
| HCM Lane LOS | N | N | N | N |
| HCM 95th-tile Q | 0 | 0 | 0 | 0 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 5 | 5 | 5 | 140 | 170 | 5 |
| Future Vol, veh/h | 5 | 5 | 5 | 140 | 170 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 5 | 5 | 5 | 152 | 185 | 5 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 350 | 188 | 190 | 0 | - | 0 |
| Stage 1 | 188 | - | - | - | - | - |
| Stage 2 | 162 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 647 | 854 | 1384 | - | - | - |
| Stage 1 | 844 | - | - | - | - | - |
| Stage 2 | 867 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 644 | 854 | 1384 | - | - | - |
| Mov Cap-2 Maneuver | 644 | - | - | - | - | - |
| Stage 1 | 841 | - | - | - | - | - |
| Stage 2 | 867 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 10 | 0.3 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1384 | - | 734 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | 0.015 | - | - |
| HCM Control Delay (s) | 7.6 | 0 | 10 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 10 | 0 | 0 | 30 |
| Future Vol, veh/h | 0 | 0 | 10 | 0 | 0 | 30 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 400 | - | - | 300 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 11 | 0 | 0 | 33 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 44 | 11 | 0 | 0 | 11 | 0 |
| Stage 1 | 11 | - | - | - | - | - |
| Stage 2 | 33 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 967 | 1070 | - | - | 1608 | - |
| Stage 1 | 1012 | - | - | - | - | - |
| Stage 2 | 989 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 967 | 1070 | - | - | 1608 | - |
| Mov Cap-2 Maneuver | 967 | - | - | - | - | - |
| Stage 1 | 1012 | - | - | - | - | - |
| Stage 2 | 989 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | - | 1608 | - |
| HCM Lane V/C Ratio | - | - | - | - | - | - |
| HCM Control Delay (s) | - | - | 0 | 0 | 0 | - |
| HCM Lane LOS | - | - | A | A | A | - |
| HCM 95th %tile Q(veh) | - | - | - | - | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 20 | 0 | 0 | 10 | 30 | 40 |
| Future Vol, veh/h | 20 | 0 | 0 | 10 | 30 | 40 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 22 | 0 | 0 | 11 | 33 | 43 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 66 | 55 | 76 | 0 | - | 0 |
| Stage 1 | 55 | - | - | - | - | - |
| Stage 2 | 11 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 939 | 1012 | 1523 | - | - | - |
| Stage 1 | 968 | - | - | - | - | - |
| Stage 2 | 1012 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 939 | 1012 | 1523 | - | - | - |
| Mov Cap-2 Maneuver | 939 | - | - | - | - | - |
| Stage 1 | 968 | - | - | - | - | - |
| Stage 2 | 1012 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 8.9 | 0 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1523 | - | 939 | - | - |
| HCM Lane V/C Ratio | - | - | 0.023 | - | - |
| HCM Control Delay (s) | 0 | - | 8.9 | - | - |
| HCM Lane LOS | A | - | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.2 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 10 | 0 | 0 | 0 | 0 | 30 |
| Future Vol, veh/h | 10 | 0 | 0 | 0 | 0 | 30 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 100 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 0 | 0 | 0 | 0 | 33 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 17 | 17 | 33 | 0 | - | 0 |
| Stage 1 | 17 | - | - | - | - | - |
| Stage 2 | 0 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 1001 | 1062 | 1579 | - | - | - |
| Stage 1 | 1006 | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 1001 | 1062 | 1579 | - | - | - |
| Mov Cap-2 Maneuver | 1001 | - | - | - | - | - |
| Stage 1 | 1006 | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 8.6 | 0 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1579 | - | 1001 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.011 | - | - | - |
| HCM Control Delay (s) | 0 | - | 8.6 | 0 | - | - |
| HCM Lane LOS | A | - | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0 | - | - | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.7 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 15 | 5 | 5 | 5 | 5 | 10 | 5 | 45 | 5 | 15 | 50 | 20 |
| Future Vol, veh/h | 15 | 5 | 5 | 5 | 5 | 10 | 5 | 45 | 5 | 15 | 50 | 20 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 5 | 5 | 5 | 5 | 11 | 5 | 49 | 5 | 16 | 54 | 22 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 1 | 1 |
| HCM Control Delay | 7.5 | 7.2 | 7.7 | 7.8 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 60% | 25% | 100% | 0% |
| Vol Thru, % | 0% | 90% | 20% | 25% | 0% | 71% |
| Vol Right, % | 0% | 10% | 20% | 50% | 0% | 29% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 5 | 50 | 25 | 20 | 15 | 70 |
| LT Vol | 5 | 0 | 15 | 5 | 15 | 0 |
| Through Vol | 0 | 45 | 5 | 5 | 0 | 50 |
| RT Vol | 0 | 5 | 5 | 10 | 0 | 20 |
| Lane Flow Rate | 5 | 54 | 27 | 22 | 16 | 76 |
| Geometry Grp | 7 | 7 | 2 | 2 | 7 | 7 |
| Degree of Util (X) | 0.008 | 0.069 | 0.033 | 0.025 | 0.023 | 0.094 |
| Departure Headway (Hd) | 5.166 | 4.595 | 4.316 | 4.073 | 5.149 | 4.448 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 690 | 776 | 834 | 884 | 693 | 803 |
| Service Time | 2.917 | 2.346 | 2.317 | 2.074 | 2.893 | 2.192 |
| HCM Lane V/C Ratio | 0.007 | 0.07 | 0.032 | 0.025 | 0.023 | 0.095 |
| HCM Control Delay | 8 | 7.7 | 7.5 | 7.2 | 8 | 7.7 |
| HCM Lane LOS | A | A | A | A | A | A |
| HCM 95th-tile Q | 0 | 0.2 | 0.1 | 0.1 | 0.1 | 0.3 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.4 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 15 | 5 | 5 | 5 | 5 | 10 | 5 | 30 | 5 | 10 | 30 | 20 |
| Future Vol, veh/h | 15 | 5 | 5 | 5 | 5 | 10 | 5 | 30 | 5 | 10 | 30 | 20 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 5 | 5 | 5 | 5 | 11 | 5 | 33 | 5 | 11 | 33 | 22 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 1 | 1 |
| HCM Control Delay | 7.3 | 7.1 | 7.6 | 7.5 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 60% | 25% | 100% | 0% |
| Vol Thru, % | 0% | 86% | 20% | 25% | 0% | 60% |
| Vol Right, % | 0% | 14% | 20% | 50% | 0% | 40% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 5 | 35 | 25 | 20 | 10 | 50 |
| LT Vol | 5 | 0 | 15 | 5 | 10 | 0 |
| Through Vol | 0 | 30 | 5 | 5 | 0 | 30 |
| RT Vol | 0 | 5 | 5 | 10 | 0 | 20 |
| Lane Flow Rate | 5 | 38 | 27 | 22 | 11 | 54 |
| Geometry Grp | 7 | 7 | 2 | 2 | 7 | 7 |
| Degree of Util (X) | 0.008 | 0.048 | 0.031 | 0.023 | 0.016 | 0.066 |
| Departure Headway (Hd) | 5.152 | 4.551 | 4.133 | 3.888 | 5.141 | 4.361 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 694 | 785 | 855 | 907 | 696 | 821 |
| Service Time | 2.888 | 2.287 | 2.213 | 1.97 | 2.873 | 2.092 |
| HCM Lane V/C Ratio | 0.007 | 0.048 | 0.032 | 0.024 | 0.016 | 0.066 |
| HCM Control Delay | 7.9 | 7.5 | 7.3 | 7.1 | 8 | 7.4 |
| HCM Lane LOS | A | A | A | A | A | A |
| HCM 95th-tile Q | 0 | 0.2 | 0.1 | 0.1 | 0 | 0.2 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 20 | 5 | 0 | 0 | 5 | 15 | 0 | 5 | 0 | 15 | 5 | 20 |
| Future Vol, veh/h | 20 | 5 | 0 | 0 | 5 | 15 | 0 | 5 | 0 | 15 | 5 | 20 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 75 | - | - | 75 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 22 | 5 | 0 | 0 | 5 | 16 | 0 | 5 | 0 | 16 | 5 | 22 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 64 | 53 | 16 | 56 | 64 | 5 | 27 | 0 | 0 | 5 | 0 | 0 |
| Stage 1 | 48 | 48 | - | 5 | 5 | - | - | - | - | - | - | - |
| Stage 2 | 16 | 5 | - | 51 | 59 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 930 | 838 | 1063 | 941 | 827 | 1078 | 1587 | - | - | 1616 | - | - |
| Stage 1 | 965 | 855 | - | 1017 | 892 | - | - | - | - | - | - | - |
| Stage 2 | 1004 | 892 | - | 962 | 846 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 904 | 830 | 1063 | 929 | 819 | 1078 | 1587 | - | - | 1616 | - | - |
| Mov Cap-2 Maneuver | 904 | 830 | - | 929 | 819 | - | - | - | - | - | - | - |
| Stage 1 | 965 | 846 | - | 1017 | 892 | - | - | - | - | - | - | - |
| Stage 2 | 983 | 892 | - | 946 | 838 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 9.2 | 8.7 | 0 | 2.7 |
| HCM LOS | A | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1587 | - | - | 888 | 999 | 1616 | - | - |
| HCM Lane V/C Ratio | - | - | - | 0.031 | 0.022 | 0.01 | - | - |
| HCM Control Delay (s) | 0 | - | - | 9.2 | 8.7 | 7.2 | - | - |
| HCM Lane LOS | A | - | - | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 0.1 | 0 | - | - |

# Appendix C:
# Existing + Project AM Peak Hour Intersection Level of Service Analysis

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 47.3 |
| Intersection LOS | E |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 35 | 95 | 70 | 20 | 110 | 130 | 90 | 265 | 15 | 75 | 175 | 15 |
| Future Vol, veh/h | 35 | 101 | 78 | 20 | 132 | 239 | 114 | 409 | 15 | 111 | 218 | 15 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 38 | 110 | 85 | 22 | 143 | 260 | 124 | 445 | 16 | 121 | 237 | 16 |
| Number of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 3 | 2 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 2 | 3 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 3 | 2 |
| HCM Control Delay | 21.2 | 21.7 | 90.8 | 24.5 |
| HCM LOS | C | C | F | C |

| Lane | NBLn1 | NBLn2 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | WBLn3 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 100% | 0% | 100% | 0% | 0% | 100% | 0% |
| Vol Thru, % | 0% | 96% | 0% | 56% | 0% | 100% | 0% | 0% | 94% |
| Vol Right, % | 0% | 4% | 0% | 44% | 0% | 0% | 100% | 0% | 6% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 114 | 424 | 35 | 179 | 20 | 132 | 239 | 111 | 233 |
| LT Vol | 114 | 0 | 35 | 0 | 20 | 0 | 0 | 111 | 0 |
| Through Vol | 0 | 409 | 0 | 101 | 0 | 132 | 0 | 0 | 218 |
| RT Vol | 0 | 15 | 0 | 78 | 0 | 0 | 239 | 0 | 15 |
| Lane Flow Rate | 124 | 461 | 38 | 195 | 22 | 143 | 260 | 121 | 253 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.32 | 1.121 | 0.108 | 0.51 | 0.059 | 0.366 | 0.612 | 0.324 | 0.642 |
| Departure Headway (Hd) | 9.297 | 8.757 | 10.756 | 9.909 | 10.137 | 9.616 | 8.887 | 10.077 | 9.512 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 387 | 415 | 335 | 366 | 355 | 376 | 408 | 360 | 382 |
| Service Time | 7.061 | 6.521 | 8.456 | 7.609 | 7.837 | 7.316 | 6.587 | 7.777 | 7.212 |
| HCM Lane V/C Ratio | 0.32 | 1.111 | 0.113 | 0.533 | 0.062 | 0.38 | 0.637 | 0.336 | 0.662 |
| HCM Control Delay | 16.4 | 110.8 | 14.8 | 22.5 | 13.5 | 17.8 | 24.6 | 17.5 | 27.8 |
| HCM Lane LOS | C | F | B | C | B | C | C | C | D |
| HCM 95th-tile Q | 1.4 | 16.5 | 0.4 | 2.8 | 0.2 | 1.6 | 3.9 | 1.4 | 4.3 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 9.5 |
| Intersection LOS | A |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 100 | 15 | 10 | 120 | 80 | 50 |
| Future Vol, veh/h | 114 | 43 | 18 | 167 | 164 | 77 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 124 | 47 | 20 | 182 | 178 | 84 |
| Number of Lanes | 1 | 0 | 1 | 2 | 1 | 1 |

| Approach | EB | WB | NB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 3 | 1 | 0 |
| Conflicting Approach Left | | NB | EB |
| Conflicting Lanes Left | 0 | 2 | 1 |
| Conflicting Approach Right | NB | | WB |
| Conflicting Lanes Right | 2 | 0 | 3 |
| HCM Control Delay | 10.2 | 8 | 10.3 |
| HCM LOS | B | A | B |

| Lane | NBLn1 | NBLn2 | EBLn1 | WBLn1 | WBLn2 | WBLn3 |
|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 0% | 100% | 0% | 0% |
| Vol Thru, % | 0% | 0% | 73% | 0% | 100% | 100% |
| Vol Right, % | 0% | 100% | 27% | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 164 | 77 | 157 | 18 | 84 | 84 |
| LT Vol | 164 | 0 | 0 | 18 | 0 | 0 |
| Through Vol | 0 | 0 | 114 | 0 | 84 | 84 |
| RT Vol | 0 | 77 | 43 | 0 | 0 | 0 |
| Lane Flow Rate | 178 | 84 | 171 | 20 | 91 | 91 |
| Geometry Grp | 8 | 8 | 8 | 7 | 7 | 7 |
| Degree of Util (X) | 0.297 | 0.111 | 0.261 | 0.032 | 0.137 | 0.093 |
| Departure Headway (Hd) | 5.993 | 4.789 | 5.506 | 5.952 | 5.448 | 3.7 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 595 | 742 | 648 | 599 | 655 | 960 |
| Service Time | 3.766 | 2.562 | 3.276 | 3.708 | 3.203 | 1.454 |
| HCM Lane V/C Ratio | 0.299 | 0.113 | 0.264 | 0.033 | 0.139 | 0.095 |
| HCM Control Delay | 11.3 | 8.2 | 10.2 | 8.9 | 9.1 | 6.8 |
| HCM Lane LOS | B | A | B | A | A | A |
| HCM 95th-tile Q | 1.2 | 0.4 | 1 | 0.1 | 0.5 | 0.3 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 10 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 5 | 210 | 5 | 5 | 125 | 5 | 30 | 5 | 5 | 5 | 5 | 10 |
| Future Vol, veh/h | 11 | 231 | 19 | 12 | 130 | 5 | 77 | 19 | 22 | 5 | 10 | 13 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 12 | 251 | 21 | 13 | 141 | 5 | 84 | 21 | 24 | 5 | 11 | 14 |
| Number of Lanes | 1 | 1 | 1 | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 3 | 3 | 3 | 3 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 3 | 3 | 3 | 3 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 3 | 3 | 3 | 3 |
| HCM Control Delay | 10.9 | 9.1 | 9.5 | 8.7 |
| HCM LOS | B | A | A | A |

| Lane | NBLn1 | NBLn2 | NBLn3 | EBLn1 | EBLn2 | EBLn3 | WBLn1 | WBLn2 | WBLn3 | SBLn1 | SBLn2 | SBLn3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 0% | 100% | 0% | 0% | 100% | 0% | 0% | 100% | 0% | 0% |
| Vol Thru, % | 0% | 100% | 22% | 0% | 100% | 0% | 0% | 100% | 90% | 0% | 100% | 20% |
| Vol Right, % | 0% | 0% | 78% | 0% | 0% | 100% | 0% | 0% | 10% | 0% | 0% | 80% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 77 | 13 | 28 | 11 | 231 | 19 | 12 | 87 | 48 | 5 | 7 | 16 |
| LT Vol | 77 | 0 | 0 | 11 | 0 | 0 | 12 | 0 | 0 | 5 | 0 | 0 |
| Through Vol | 0 | 13 | 6 | 0 | 231 | 0 | 0 | 87 | 43 | 0 | 7 | 3 |
| RT Vol | 0 | 0 | 22 | 0 | 0 | 19 | 0 | 0 | 5 | 0 | 0 | 13 |
| Lane Flow Rate | 84 | 14 | 31 | 12 | 251 | 21 | 13 | 94 | 53 | 5 | 7 | 18 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.146 | 0.022 | 0.045 | 0.019 | 0.372 | 0.027 | 0.022 | 0.146 | 0.08 | 0.01 | 0.012 | 0.027 |
| Departure Headway (Hd) | 6.271 | 5.771 | 5.227 | 5.831 | 5.331 | 4.631 | 6.066 | 5.566 | 5.494 | 6.483 | 5.983 | 5.425 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 568 | 615 | 679 | 611 | 670 | 767 | 587 | 640 | 647 | 547 | 592 | 652 |
| Service Time | 4.051 | 3.551 | 3.008 | 3.594 | 3.094 | 2.394 | 3.839 | 3.339 | 3.267 | 4.278 | 3.778 | 3.221 |
| HCM Lane V/C Ratio | 0.148 | 0.023 | 0.046 | 0.02 | 0.375 | 0.027 | 0.022 | 0.147 | 0.082 | 0.009 | 0.012 | 0.028 |
| HCM Control Delay | 10.1 | 8.7 | 8.3 | 8.7 | 11.3 | 7.5 | 9 | 9.3 | 8.8 | 9.3 | 8.9 | 8.4 |
| HCM Lane LOS | B | A | A | A | B | A | A | A | A | A | A | A |
| HCM 95th-tile Q | 0.5 | 0.1 | 0.1 | 0.1 | 1.7 | 0.1 | 0.1 | 0.5 | 0.3 | 0 | 0 | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.4 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 285 | 5 | 130 | 345 | 5 | 215 |
| Future Vol, veh/h | 285 | 13 | 134 | 345 | 25 | 233 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 150 | - | 0 | 25 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 10 | 2 | 2 | 10 | 2 | 2 |
| Mvmt Flow | 310 | 14 | 146 | 375 | 27 | 253 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 324 | 0 | 984 | 317 |
| Stage 1 | - | - | - | - | 317 | - |
| Stage 2 | - | - | - | - | 667 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1236 | - | 275 | 724 |
| Stage 1 | - | - | - | - | 738 | - |
| Stage 2 | - | - | - | - | 510 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1236 | - | 243 | 724 |
| Mov Cap-2 Maneuver | - | - | - | - | 243 | - |
| Stage 1 | - | - | - | - | 738 | - |
| Stage 2 | - | - | - | - | 450 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 2.3 | 13.5 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 243 | 724 | - | - | 1236 | - |
| HCM Lane V/C Ratio | 0.112 | 0.35 | - | - | 0.118 | - |
| HCM Control Delay (s) | 21.7 | 12.6 | - | - | 8.3 | - |
| HCM Lane LOS | C | B | - | - | A | - |
| HCM 95th %tile Q(veh) | 0.4 | 1.6 | - | - | 0.4 | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 55 | 35 | 10 | 5 | 50 | 140 | 30 | 385 | 15 | 45 | 250 | 55 |
| Future Volume (veh/h) | 55 | 35 | 19 | 5 | 50 | 140 | 55 | 613 | 15 | 45 | 320 | 55 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 60 | 38 | 21 | 5 | 54 | 152 | 60 | 666 | 16 | 49 | 348 | 60 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 97 | 690 | 305 | 12 | 260 | 232 | 97 | 772 | 19 | 85 | 781 | 662 |
| Arrive On Green | 0.05 | 0.19 | 0.19 | 0.01 | 0.15 | 0.15 | 0.05 | 0.42 | 0.42 | 0.05 | 0.42 | 0.42 |
| Sat Flow, veh/h | 1781 | 3554 | 1573 | 1781 | 1777 | 1585 | 1781 | 1819 | 44 | 1781 | 1870 | 1585 |
| Grp Volume(v), veh/h | 60 | 38 | 21 | 5 | 54 | 152 | 60 | 0 | 682 | 49 | 348 | 60 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1573 | 1781 | 1777 | 1585 | 1781 | 0 | 1862 | 1781 | 1870 | 1585 |
| Q Serve(g_s), s | 1.8 | 0.5 | 0.6 | 0.2 | 1.5 | 5.0 | 1.8 | 0.0 | 18.3 | 1.5 | 7.3 | 1.3 |
| Cycle Q Clear(g_c), s | 1.8 | 0.5 | 0.6 | 0.2 | 1.5 | 5.0 | 1.8 | 0.0 | 18.3 | 1.5 | 7.3 | 1.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.02 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 97 | 690 | 305 | 12 | 260 | 232 | 97 | 0 | 790 | 85 | 781 | 662 |
| V/C Ratio(X) | 0.62 | 0.06 | 0.07 | 0.42 | 0.21 | 0.66 | 0.62 | 0.00 | 0.86 | 0.57 | 0.45 | 0.09 |
| Avail Cap(c_a), veh/h | 275 | 2195 | 971 | 243 | 1065 | 950 | 243 | 0 | 790 | 243 | 781 | 662 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 25.5 | 18.1 | 18.1 | 27.2 | 20.7 | 22.2 | 25.5 | 0.0 | 14.4 | 25.7 | 11.5 | 9.7 |
| Incr Delay (d2), s/veh | 6.2 | 0.0 | 0.1 | 21.8 | 0.4 | 3.1 | 6.2 | 0.0 | 12.0 | 6.0 | 1.8 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.9 | 0.2 | 0.2 | 0.1 | 0.6 | 1.9 | 0.9 | 0.0 | 8.8 | 0.7 | 2.9 | 0.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 31.7 | 18.1 | 18.2 | 49.0 | 21.1 | 25.3 | 31.7 | 0.0 | 26.4 | 31.6 | 13.3 | 10.0 |
| LnGrp LOS | C | B | B | D | C | C | C | A | C | C | B | A |
| Approach Vol, veh/h | | 119 | | | 211 | | | 742 | | | 457 | |
| Approach Delay, s/veh | | 25.0 | | | 24.8 | | | 26.8 | | | 14.8 | |
| Approach LOS | | C | | | C | | | C | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.1 | 27.9 | 4.9 | 15.2 | 7.5 | 27.5 | 7.5 | 12.5 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 7.5 | 23.0 | 7.5 | 34.0 | 7.5 | 23.0 | 8.5 | 33.0 |
| Max Q Clear Time (g_c+I1), s | 3.5 | 20.3 | 2.2 | 2.6 | 3.8 | 9.3 | 3.8 | 7.0 |
| Green Ext Time (p_c), s | 0.0 | 1.2 | 0.0 | 0.2 | 0.0 | 1.8 | 0.0 | 1.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 22.8 |
| HCM 6th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 60 | 50 | 85 | 180 | 50 | 40 | 200 | 370 | 160 | 90 | 385 | 45 |
| Future Volume (veh/h) | 60 | 50 | 85 | 180 | 50 | 40 | 200 | 414 | 167 | 90 | 398 | 45 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1752 | 1870 | 1870 | 1870 | 1870 | 1752 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 65 | 54 | 92 | 196 | 54 | 43 | 217 | 450 | 182 | 98 | 433 | 49 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 10 | 2 | 2 | 2 | 2 | 10 | 2 | 2 | 2 |
| Cap, veh/h | 165 | 209 | 175 | 236 | 384 | 324 | 305 | 1119 | 449 | 126 | 1400 | 158 |
| Arrive On Green | 0.05 | 0.11 | 0.11 | 0.14 | 0.21 | 0.21 | 0.09 | 0.45 | 0.45 | 0.07 | 0.44 | 0.44 |
| Sat Flow, veh/h | 3456 | 1870 | 1572 | 1668 | 1870 | 1578 | 3456 | 2473 | 992 | 1781 | 3218 | 362 |
| Grp Volume(v), veh/h | 65 | 54 | 92 | 196 | 54 | 43 | 217 | 322 | 310 | 98 | 238 | 244 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1572 | 1668 | 1870 | 1578 | 1728 | 1777 | 1688 | 1781 | 1777 | 1804 |
| Q Serve(g_s), s | 1.5 | 2.1 | 4.4 | 9.2 | 1.9 | 1.8 | 4.9 | 9.8 | 9.9 | 4.4 | 7.0 | 7.1 |
| Cycle Q Clear(g_c), s | 1.5 | 2.1 | 4.4 | 9.2 | 1.9 | 1.8 | 4.9 | 9.8 | 9.9 | 4.4 | 7.0 | 7.1 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.59 | 1.00 | | 0.20 |
| Lane Grp Cap(c), veh/h | 165 | 209 | 175 | 236 | 384 | 324 | 305 | 804 | 764 | 126 | 773 | 785 |
| V/C Ratio(X) | 0.40 | 0.26 | 0.52 | 0.83 | 0.14 | 0.13 | 0.71 | 0.40 | 0.41 | 0.78 | 0.31 | 0.31 |
| Avail Cap(c_a), veh/h | 322 | 860 | 723 | 404 | 1139 | 961 | 451 | 804 | 764 | 233 | 773 | 785 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 37.2 | 32.7 | 33.7 | 33.6 | 26.2 | 26.1 | 35.7 | 14.7 | 14.8 | 36.7 | 14.8 | 14.8 |
| Incr Delay (d2), s/veh | 1.5 | 0.6 | 2.4 | 7.4 | 0.2 | 0.2 | 3.1 | 1.5 | 1.6 | 9.7 | 1.0 | 1.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.6 | 1.0 | 1.8 | 4.1 | 0.8 | 0.7 | 2.1 | 3.9 | 3.8 | 2.2 | 2.8 | 2.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 38.7 | 33.3 | 36.1 | 41.0 | 26.3 | 26.3 | 38.8 | 16.2 | 16.4 | 46.5 | 15.9 | 15.9 |
| LnGrp LOS | D | C | D | D | C | C | D | B | B | D | B | B |
| Approach Vol, veh/h | | 211 | | | 293 | | | 849 | | | 580 | |
| Approach Delay, s/veh | | 36.2 | | | 36.1 | | | 22.0 | | | 21.0 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 10.2 | 40.9 | 15.9 | 13.5 | 11.6 | 39.5 | 8.3 | 21.0 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 10.5 | 35.0 | 19.5 | 37.0 | 10.5 | 35.0 | 7.5 | 49.0 |
| Max Q Clear Time (g_c+I1), s | 6.4 | 11.9 | 11.2 | 6.4 | 6.9 | 9.1 | 3.5 | 3.9 |
| Green Ext Time (p_c), s | 0.1 | 3.9 | 0.3 | 0.6 | 0.2 | 2.9 | 0.0 | 0.4 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 25.4 |
| HCM 6th LOS | C |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 50 | 0 | 170 | 275 | 520 | 0 | 0 | 310 | 380 |
| Future Volume (veh/h) | 0 | 0 | 0 | 58 | 0 | 170 | 432 | 571 | 0 | 0 | 323 | 380 |
| Initial Q (Qb), veh | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | | | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | | | | 1870 | 1870 | 1752 | 1870 | 1870 | 0 | 0 | 1841 | 1841 |
| Adj Flow Rate, veh/h | | | | 63 | 0 | 0 | 470 | 621 | 0 | 0 | 351 | 413 |
| Peak Hour Factor | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | | | | 2 | 2 | 10 | 2 | 2 | 0 | 0 | 4 | 4 |
| Cap, veh/h | | | | 108 | 0 | | 418 | 1380 | 0 | 0 | 741 | 628 |
| Arrive On Green | | | | 0.06 | 0.00 | 0.00 | 0.23 | 0.74 | 0.00 | 0.00 | 0.40 | 0.40 |
| Sat Flow, veh/h | | | | 1781 | 0 | 1485 | 1781 | 1870 | 0 | 0 | 1841 | 1560 |
| Grp Volume(v), veh/h | | | | 63 | 0 | 0 | 470 | 621 | 0 | 0 | 351 | 413 |
| Grp Sat Flow(s),veh/h/ln | | | | 1781 | 0 | 1485 | 1781 | 1870 | 0 | 0 | 1841 | 1560 |
| Q Serve(g_s), s | | | | 1.5 | 0.0 | 0.0 | 10.5 | 5.8 | 0.0 | 0.0 | 6.3 | 9.6 |
| Cycle Q Clear(g_c), s | | | | 1.5 | 0.0 | 0.0 | 10.5 | 5.8 | 0.0 | 0.0 | 6.3 | 9.6 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | | | | 108 | 0 | | 418 | 1380 | 0 | 0 | 741 | 628 |
| V/C Ratio(X) | | | | 0.58 | 0.00 | | 1.12 | 0.45 | 0.00 | 0.00 | 0.47 | 0.66 |
| Avail Cap(c_a), veh/h | | | | 717 | 0 | | 418 | 1380 | 0 | 0 | 741 | 628 |
| HCM Platoon Ratio | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | | | | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | | | | 20.4 | 0.0 | 0.0 | 17.1 | 2.3 | 0.0 | 0.0 | 9.9 | 10.9 |
| Incr Delay (d2), s/veh | | | | 4.9 | 0.0 | 0.0 | 82.1 | 1.1 | 0.0 | 0.0 | 2.2 | 5.3 |
| Initial Q Delay(d3),s/veh | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | | | | 0.7 | 0.0 | 0.0 | 13.0 | 0.5 | 0.0 | 0.0 | 2.3 | 3.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 25.3 | 0.0 | 0.0 | 99.2 | 3.4 | 0.0 | 0.0 | 12.0 | 16.2 |
| LnGrp LOS | | | | C | A | | F | A | A | A | B | B |
| Approach Vol, veh/h | | | | | 63 | A | | 1091 | | | 764 | |
| Approach Delay, s/veh | | | | | 25.3 | | | 44.7 | | | 14.3 | |
| Approach LOS | | | | | C | | | D | | | B | |

| Timer - Assigned Phs | 2 | | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 37.5 | | 15.0 | 22.5 | | 7.2 |
| Change Period (Y+Rc), s | 4.5 | | 4.5 | 4.5 | | 4.5 |
| Max Green Setting (Gmax), s | 33.0 | | 10.5 | 18.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | 7.8 | | 12.5 | 11.6 | | 3.5 |
| Green Ext Time (p_c), s | 4.3 | | 0.0 | 2.0 | | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 31.9 |
| HCM 6th LOS | C |

**Notes**

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 310 | 0 | 120 | 0 | 0 | 0 | 0 | 485 | 95 | 130 | 230 | 0 |
| Future Volume (veh/h) | 310 | 0 | 169 | 0 | 0 | 0 | 0 | 693 | 115 | 130 | 251 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | | | | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1870 | 1870 | | | | 0 | 1870 | 1870 | 1826 | 1870 | 0 |
| Adj Flow Rate, veh/h | 337 | 0 | 184 | | | | 0 | 753 | 125 | 141 | 273 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 2 | 2 | | | | 0 | 2 | 2 | 5 | 2 | 0 |
| Cap, veh/h | 427 | 0 | 380 | | | | 0 | 645 | 107 | 179 | 1117 | 0 |
| Arrive On Green | 0.24 | 0.00 | 0.24 | | | | 0.00 | 0.41 | 0.41 | 0.10 | 0.60 | 0.00 |
| Sat Flow, veh/h | 1781 | 0 | 1585 | | | | 0 | 1564 | 260 | 1739 | 1870 | 0 |
| Grp Volume(v), veh/h | 337 | 0 | 184 | | | | 0 | 0 | 878 | 141 | 273 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1585 | | | | 0 | 0 | 1824 | 1739 | 1870 | 0 |
| Q Serve(g_s), s | 9.8 | 0.0 | 5.5 | | | | 0.0 | 0.0 | 22.7 | 4.4 | 3.8 | 0.0 |
| Cycle Q Clear(g_c), s | 9.8 | 0.0 | 5.5 | | | | 0.0 | 0.0 | 22.7 | 4.4 | 3.8 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | | | | 0.00 | | 0.14 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 427 | 0 | 380 | | | | 0 | 0 | 752 | 179 | 1117 | 0 |
| V/C Ratio(X) | 0.79 | 0.00 | 0.48 | | | | 0.00 | 0.00 | 1.17 | 0.79 | 0.24 | 0.00 |
| Avail Cap(c_a), veh/h | 585 | 0 | 521 | | | | 0 | 0 | 752 | 237 | 1117 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | | | | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 19.6 | 0.0 | 18.0 | | | | 0.0 | 0.0 | 16.2 | 24.1 | 5.2 | 0.0 |
| Incr Delay (d2), s/veh | 5.0 | 0.0 | 1.0 | | | | 0.0 | 0.0 | 89.2 | 12.2 | 0.5 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.1 | 0.0 | 1.9 | | | | 0.0 | 0.0 | 26.2 | 2.2 | 1.1 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 24.7 | 0.0 | 19.0 | | | | 0.0 | 0.0 | 105.3 | 36.4 | 5.8 | 0.0 |
| LnGrp LOS | C | A | B | | | | A | A | F | D | A | A |
| Approach Vol, veh/h | | 521 | | | | | | 878 | | | 414 | |
| Approach Delay, s/veh | | 22.7 | | | | | | 105.3 | | | 16.2 | |
| Approach LOS | | C | | | | | | F | | | B | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 10.2 | 27.2 | | 17.7 | | 37.4 | | | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | 4.5 | | 4.5 | | | | | | |
| Max Green Setting (Gmax), s | 7.5 | 20.9 | | 18.1 | | 32.9 | | | | | | |
| Max Q Clear Time (g_c+I1), s | 6.4 | 24.7 | | 11.8 | | 5.8 | | | | | | |
| Green Ext Time (p_c), s | 0.0 | 0.0 | | 1.4 | | 1.6 | | | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 6th Ctrl Delay | | | 61.2 |
| HCM 6th LOS | | | E |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.3 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↑ | ↑ | | ↰ | ↱ |
| Traffic Vol, veh/h | 0 | 500 | 420 | 0 | 30 | 55 |
| Future Vol, veh/h | 0 | 518 | 420 | 0 | 32 | 59 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 25 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 563 | 457 | 0 | 35 | 64 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | 1020 | 457 |
| Stage 1 | - | - | - | - | 457 | - |
| Stage 2 | - | - | - | - | 563 | - |
| Critical Hdwy | - | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | 0 | 262 | 604 |
| Stage 1 | 0 | - | - | 0 | 638 | - |
| Stage 2 | 0 | - | - | 0 | 570 | - |
| Platoon blocked, % | | - | - | | | |
| Mov Cap-1 Maneuver | - | - | - | - | 262 | 604 |
| Mov Cap-2 Maneuver | - | - | - | - | 262 | - |
| Stage 1 | - | - | - | - | 638 | - |
| Stage 2 | - | - | - | - | 570 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 14.9 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBT | WBT | SBLn1 | SBLn2 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | 262 | 604 |
| HCM Lane V/C Ratio | - | - | 0.133 | 0.106 |
| HCM Control Delay (s) | - | - | 20.8 | 11.7 |
| HCM Lane LOS | - | - | C | B |
| HCM 95th %tile Q(veh) | - | - | 0.5 | 0.4 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 37.3 |
| Intersection LOS | E |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 135 | 350 | 45 | 0 | 5 | 5 | 55 | 90 | 30 | 55 | 65 | 360 |
| Future Vol, veh/h | 144 | 359 | 47 | 0 | 5 | 5 | 55 | 119 | 56 | 55 | 83 | 360 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 157 | 390 | 51 | 0 | 5 | 5 | 60 | 129 | 61 | 60 | 90 | 391 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 1 | 1 |
| HCM Control Delay | 63.3 | 10.7 | 14.4 | 19.8 |
| HCM LOS | F | B | B | C |

| Lane | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Vol Left, % | 32% | 0% | 26% | 0% | 40% | 0% |
| Vol Thru, % | 68% | 0% | 65% | 50% | 60% | 0% |
| Vol Right, % | 0% | 100% | 9% | 50% | 0% | 100% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 174 | 56 | 550 | 10 | 138 | 360 |
| LT Vol | 55 | 0 | 144 | 0 | 55 | 0 |
| Through Vol | 119 | 0 | 359 | 5 | 83 | 0 |
| RT Vol | 0 | 56 | 47 | 5 | 0 | 360 |
| Lane Flow Rate | 189 | 61 | 598 | 11 | 150 | 391 |
| Geometry Grp | 7 | 7 | 2 | 2 | 7 | 7 |
| Degree of Util (X) | 0.402 | 0.114 | 1.006 | 0.022 | 0.303 | 0.689 |
| Departure Headway (Hd) | 7.788 | 6.901 | 6.059 | 7.567 | 7.389 | 6.464 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 465 | 523 | 592 | 476 | 489 | 563 |
| Service Time | 5.488 | 4.601 | 4.145 | 5.567 | 5.089 | 4.164 |
| HCM Lane V/C Ratio | 0.406 | 0.117 | 1.01 | 0.023 | 0.307 | 0.694 |
| HCM Control Delay | 15.6 | 10.5 | 63.3 | 10.7 | 13.3 | 22.3 |
| HCM Lane LOS | C | B | F | B | B | C |
| HCM 95th-tile Q | 1.9 | 0.4 | 15.1 | 0.1 | 1.3 | 5.3 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 27.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 310 | 0 | 55 | 130 | 100 | 0 | 0 | 170 | 45 |
| Future Vol, veh/h | 0 | 0 | 0 | 320 | 0 | 55 | 148 | 120 | 0 | 0 | 178 | 45 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | 25 | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 1 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 348 | 0 | 60 | 161 | 130 | 0 | 0 | 193 | 49 |

| Major/Minor | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 670 | - | 130 | 242 | 0 | - | - | - | 0 |
| Stage 1 | 452 | - | - | - | - | - | - | - | - |
| Stage 2 | 218 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 6.42 | - | 6.22 | 4.12 | - | - | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | - | 3.318 | 2.218 | - | - | - | - | - |
| Pot Cap-1 Maneuver | 422 | 0 | 920 | 1324 | - | 0 | 0 | - | - |
| Stage 1 | 641 | 0 | - | - | - | 0 | 0 | - | - |
| Stage 2 | 818 | 0 | - | - | - | 0 | 0 | - | - |
| Platoon blocked, % | | | | | - | | | - | - |
| Mov Cap-1 Maneuver | 367 | 0 | 920 | 1324 | - | - | - | - | - |
| Mov Cap-2 Maneuver | 367 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 557 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 818 | 0 | - | - | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 60.1 | 4.5 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | WBLn1 | WBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1324 | - | 367 | 920 | - | - |
| HCM Lane V/C Ratio | 0.122 | - | 0.948 | 0.065 | - | - |
| HCM Control Delay (s) | 8.1 | 0 | 68.8 | 9.2 | - | - |
| HCM Lane LOS | A | A | F | A | - | - |
| HCM 95th %tile Q(veh) | 0.4 | - | 10.3 | 0.2 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 110 | 0 | 0 | 80 |
| Future Vol, veh/h | 0 | 168 | 110 | 0 | 51 | 80 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 183 | 120 | 0 | 55 | 87 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 317 | 120 | 0 | 0 | 120 | 0 |
| Stage 1 | 120 | - | - | - | - | - |
| Stage 2 | 197 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 676 | 931 | - | - | 1468 | - |
| Stage 1 | 905 | - | - | - | - | - |
| Stage 2 | 836 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 650 | 931 | - | - | 1468 | - |
| Mov Cap-2 Maneuver | 650 | - | - | - | - | - |
| Stage 1 | 905 | - | - | - | - | - |
| Stage 2 | 803 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.8 | 0 | 2.9 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 931 | 1468 | - |
| HCM Lane V/C Ratio | - | - | 0.196 | 0.038 | - |
| HCM Control Delay (s) | - | - | 9.8 | 7.5 | 0 |
| HCM Lane LOS | - | - | A | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.7 | 0.1 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.6 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 51 | 99 | 27 | 0 | 69 |
| Future Vol, veh/h | 0 | 51 | 99 | 27 | 0 | 69 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 55 | 108 | 29 | 0 | 75 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | - | 123 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 928 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 928 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 9.2 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | 928 |
| HCM Lane V/C Ratio | - | - | - | 0.081 |
| HCM Control Delay (s) | - | - | - | 9.2 |
| HCM Lane LOS | - | - | - | A |
| HCM 95th %tile Q(veh) | - | - | - | 0.3 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.1 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 33 | 18 | 92 | 22 | 81 | 34 |
| Future Vol, veh/h | 33 | 18 | 92 | 22 | 81 | 34 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 200 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 36 | 20 | 100 | 24 | 88 | 37 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 124 | 0 | - | 0 | 204 | 112 |
| Stage 1 | - | - | - | - | 112 | - |
| Stage 2 | - | - | - | - | 92 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 1463 | - | - | - | 784 | 941 |
| Stage 1 | - | - | - | - | 913 | - |
| Stage 2 | - | - | - | - | 932 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1463 | - | - | - | 764 | 941 |
| Mov Cap-2 Maneuver | - | - | - | - | 764 | - |
| Stage 1 | - | - | - | - | 890 | - |
| Stage 2 | - | - | - | - | 932 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 4.9 | 0 | 10.3 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1463 | - | - | - | 809 |
| HCM Lane V/C Ratio | 0.025 | - | - | - | 0.155 |
| HCM Control Delay (s) | 7.5 | - | - | - | 10.3 |
| HCM Lane LOS | A | - | - | - | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.5 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.1 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 99 | 100 | 6 | 9 | 14 |
| Future Vol, veh/h | 0 | 99 | 100 | 6 | 9 | 14 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 108 | 109 | 7 | 10 | 15 |
| Number of Lanes | 1 | 1 | 1 | 0 | 1 | 1 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 2 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 2 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 2 | 2 |
| HCM Control Delay | 8.1 | 8.2 | 7.6 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | EBLn2 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|
| Vol Left, % | 0% | 0% | 0% | 100% | 0% |
| Vol Thru, % | 100% | 100% | 94% | 0% | 0% |
| Vol Right, % | 0% | 0% | 6% | 0% | 100% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 0 | 99 | 106 | 9 | 14 |
| LT Vol | 0 | 0 | 0 | 9 | 0 |
| Through Vol | 0 | 99 | 100 | 0 | 0 |
| RT Vol | 0 | 0 | 6 | 0 | 14 |
| Lane Flow Rate | 0 | 108 | 115 | 10 | 15 |
| Geometry Grp | 7 | 7 | 4 | 7 | 7 |
| Degree of Util (X) | 0 | 0.139 | 0.142 | 0.015 | 0.018 |
| Departure Headway (Hd) | 4.635 | 4.635 | 4.426 | 5.574 | 4.369 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 0 | 772 | 805 | 646 | 824 |
| Service Time | 2.378 | 2.378 | 2.482 | 3.274 | 2.069 |
| HCM Lane V/C Ratio | 0 | 0.14 | 0.143 | 0.015 | 0.018 |
| HCM Control Delay | 7.4 | 8.1 | 8.2 | 8.4 | 7.1 |
| HCM Lane LOS | N | A | A | A | A |
| HCM 95th-tile Q | 0 | 0.5 | 0.5 | 0 | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.7 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 39 | 69 | 37 | 6 | 22 | 69 |
| Future Vol, veh/h | 39 | 69 | 37 | 6 | 22 | 69 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 100 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 42 | 75 | 40 | 7 | 24 | 75 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 47 | 0 | - | 0 | 203 | 44 |
| Stage 1 | - | - | - | - | 44 | - |
| Stage 2 | - | - | - | - | 159 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 1560 | - | - | - | 786 | 1026 |
| Stage 1 | - | - | - | - | 978 | - |
| Stage 2 | - | - | - | - | 870 | - |
| Platoon blocked, % | | | - | - | - | |
| Mov Cap-1 Maneuver | 1560 | - | - | - | 765 | 1026 |
| Mov Cap-2 Maneuver | - | - | - | - | 765 | - |
| Stage 1 | - | - | - | - | 952 | - |
| Stage 2 | - | - | - | - | 870 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 2.7 | 0 | 9.2 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1560 | - | - | - | 948 |
| HCM Lane V/C Ratio | 0.027 | - | - | - | 0.104 |
| HCM Control Delay (s) | 7.4 | 0 | - | - | 9.2 |
| HCM Lane LOS | A | A | - | - | A |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.3 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.6 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 42 | 49 | 0 | 20 | 17 | 3 | 0 | 0 | 20 | 9 | 0 | 26 |
| Future Vol, veh/h | 42 | 49 | 0 | 20 | 17 | 3 | 0 | 0 | 20 | 9 | 0 | 26 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 46 | 53 | 0 | 22 | 18 | 3 | 0 | 0 | 22 | 10 | 0 | 28 |
| Number of Lanes | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 2 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 2 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 2 |
| HCM Control Delay | 7.9 | 7.6 | 6.8 | 7.1 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | SBLn1 |
|---|---|---|---|---|---|
| Vol Left, % | 0% | 100% | 0% | 50% | 26% |
| Vol Thru, % | 0% | 0% | 100% | 43% | 0% |
| Vol Right, % | 100% | 0% | 0% | 7% | 74% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 20 | 42 | 49 | 40 | 35 |
| LT Vol | 0 | 42 | 0 | 20 | 9 |
| Through Vol | 0 | 0 | 49 | 17 | 0 |
| RT Vol | 20 | 0 | 0 | 3 | 26 |
| Lane Flow Rate | 22 | 46 | 53 | 43 | 38 |
| Geometry Grp | 2 | 7 | 7 | 5 | 2 |
| Degree of Util (X) | 0.022 | 0.065 | 0.069 | 0.052 | 0.041 |
| Departure Headway (Hd) | 3.716 | 5.161 | 4.661 | 4.266 | 3.906 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 969 | 694 | 769 | 833 | 922 |
| Service Time | 1.717 | 2.889 | 2.388 | 2.323 | 1.906 |
| HCM Lane V/C Ratio | 0.023 | 0.066 | 0.069 | 0.052 | 0.041 |
| HCM Control Delay | 6.8 | 8.2 | 7.7 | 7.6 | 7.1 |
| HCM Lane LOS | A | A | A | A | A |
| HCM 95th-tile Q | 0.1 | 0.2 | 0.2 | 0.2 | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 6 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 56 | 26 | 23 | 22 | 9 | 17 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 61 | 28 | 25 | 24 | 10 | 18 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 93 | 19 | 28 | 0 | - | 0 |
| Stage 1 | 19 | - | - | - | - | - |
| Stage 2 | 74 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 907 | 1059 | 1585 | - | - | - |
| Stage 1 | 1004 | - | - | - | - | - |
| Stage 2 | 949 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 892 | 1059 | 1585 | - | - | - |
| Mov Cap-2 Maneuver | 892 | - | - | - | - | - |
| Stage 1 | 988 | - | - | - | - | - |
| Stage 2 | 949 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.2 | 3.7 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1585 | - | 939 | - | - |
| HCM Lane V/C Ratio | 0.016 | - | 0.095 | - | - |
| HCM Control Delay (s) | 7.3 | 0 | 9.2 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.3 | - | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.4 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 6 | 21 | 0 | 2 | 18 | 43 | 0 | 62 | 2 | 13 | 22 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 7 | 23 | 0 | 2 | 20 | 47 | 0 | 67 | 2 | 14 | 24 | 1 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 7.4 | 7.1 | 7.5 | 7.5 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 0% | 22% | 3% | 36% |
| Vol Thru, % | 97% | 78% | 29% | 61% |
| Vol Right, % | 3% | 0% | 68% | 3% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 64 | 27 | 63 | 36 |
| LT Vol | 0 | 6 | 2 | 13 |
| Through Vol | 62 | 21 | 18 | 22 |
| RT Vol | 2 | 0 | 43 | 1 |
| Lane Flow Rate | 70 | 29 | 68 | 39 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.08 | 0.034 | 0.071 | 0.046 |
| Departure Headway (Hd) | 4.115 | 4.221 | 3.742 | 4.213 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 866 | 841 | 947 | 845 |
| Service Time | 2.16 | 2.286 | 1.805 | 2.264 |
| HCM Lane V/C Ratio | 0.081 | 0.034 | 0.072 | 0.046 |
| HCM Control Delay | 7.5 | 7.4 | 7.1 | 7.5 |
| HCM Lane LOS | A | A | A | A |
| HCM 95th-tile Q | 0.3 | 0.1 | 0.2 | 0.1 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.1 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 17 | 21 | 21 | 0 | 18 | 45 | 2 | 2 | 2 | 12 | 2 | 10 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 18 | 23 | 23 | 0 | 20 | 49 | 2 | 2 | 2 | 13 | 2 | 11 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 7.2 | 6.9 | 7.1 | 7.2 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 33% | 29% | 0% | 50% |
| Vol Thru, % | 33% | 36% | 29% | 8% |
| Vol Right, % | 33% | 36% | 71% | 42% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 6 | 59 | 63 | 24 |
| LT Vol | 2 | 17 | 0 | 12 |
| Through Vol | 2 | 21 | 18 | 2 |
| RT Vol | 2 | 21 | 45 | 10 |
| Lane Flow Rate | 7 | 64 | 68 | 26 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.007 | 0.069 | 0.069 | 0.029 |
| Departure Headway (Hd) | 4.05 | 3.886 | 3.61 | 4.018 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 879 | 922 | 992 | 888 |
| Service Time | 2.094 | 1.907 | 1.634 | 2.057 |
| HCM Lane V/C Ratio | 0.008 | 0.069 | 0.069 | 0.029 |
| HCM Control Delay | 7.1 | 7.2 | 6.9 | 7.2 |
| HCM Lane LOS | A | A | A | A |
| HCM 95th-tile Q | 0 | 0.2 | 0.2 | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.1 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 5 | 5 | 5 | 170 | 105 | 5 |
| Future Vol, veh/h | 60 | 8 | 5 | 170 | 105 | 25 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 65 | 9 | 5 | 185 | 114 | 27 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 323 | 128 | 141 | 0 | - | 0 |
| Stage 1 | 128 | - | - | - | - | - |
| Stage 2 | 195 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 671 | 922 | 1442 | - | - | - |
| Stage 1 | 898 | - | - | - | - | - |
| Stage 2 | 838 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 668 | 922 | 1442 | - | - | - |
| Mov Cap-2 Maneuver | 668 | - | - | - | - | - |
| Stage 1 | 894 | - | - | - | - | - |
| Stage 2 | 838 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 10.8 | 0.2 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1442 | - | 690 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | 0.107 | - | - |
| HCM Control Delay (s) | 7.5 | 0 | 10.8 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.4 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 15 | 0 | 0 | 5 |
| Future Vol, veh/h | 0 | 0 | 93 | 0 | 0 | 31 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 400 | - | - | 300 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 101 | 0 | 0 | 34 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 135 | 101 | 0 | 0 | 101 | 0 |
| Stage 1 | 101 | - | - | - | - | - |
| Stage 2 | 34 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 859 | 954 | - | - | 1491 | - |
| Stage 1 | 923 | - | - | - | - | - |
| Stage 2 | 988 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 859 | 954 | - | - | 1491 | - |
| Mov Cap-2 Maneuver | 859 | - | - | - | - | - |
| Stage 1 | 923 | - | - | - | - | - |
| Stage 2 | 988 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | - | 1491 | - |
| HCM Lane V/C Ratio | - | - | - | - | - | - |
| HCM Control Delay (s) | - | - | 0 | 0 | 0 | - |
| HCM Lane LOS | - | - | A | A | A | - |
| HCM 95th %tile Q(veh) | - | - | - | - | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.5 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 25 | 0 | 0 | 15 | 5 | 10 |
| Future Vol, veh/h | 25 | 0 | 0 | 93 | 31 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 27 | 0 | 0 | 101 | 34 | 11 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 141 | 40 | 45 | 0 | - | 0 |
| Stage 1 | 40 | - | - | - | - | - |
| Stage 2 | 101 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 852 | 1031 | 1563 | - | - | - |
| Stage 1 | 982 | - | - | - | - | - |
| Stage 2 | 923 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 852 | 1031 | 1563 | - | - | - |
| Mov Cap-2 Maneuver | 852 | - | - | - | - | - |
| Stage 1 | 982 | - | - | - | - | - |
| Stage 2 | 923 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.4 | 0 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1563 | - | 852 | - | - |
| HCM Lane V/C Ratio | - | - | 0.032 | - | - |
| HCM Control Delay (s) | 0 | - | 9.4 | - | - |
| HCM Lane LOS | A | - | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.1 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 15 | 0 | 0 | 0 | 0 | 5 |
| Future Vol, veh/h | 15 | 0 | 0 | 78 | 26 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 100 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 0 | 0 | 85 | 28 | 5 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 116 | 31 | 33 | 0 | - | 0 |
| Stage 1 | 31 | - | - | - | - | - |
| Stage 2 | 85 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 880 | 1043 | 1579 | - | - | - |
| Stage 1 | 992 | - | - | - | - | - |
| Stage 2 | 938 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 880 | 1043 | 1579 | - | - | - |
| Mov Cap-2 Maneuver | 880 | - | - | - | - | - |
| Stage 1 | 992 | - | - | - | - | - |
| Stage 2 | 938 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.2 | 0 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1579 | - | 880 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.019 | - | - | - |
| HCM Control Delay (s) | 0 | - | 9.2 | 0 | - | - |
| HCM Lane LOS | A | - | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.6 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 30 | 5 | 5 | 5 | 5 | 30 | 5 | 70 | 5 | 5 | 15 | 5 |
| Future Vol, veh/h | 30 | 5 | 5 | 5 | 5 | 30 | 5 | 181 | 5 | 5 | 51 | 5 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 33 | 5 | 5 | 5 | 5 | 33 | 5 | 197 | 5 | 5 | 55 | 5 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 1 | 1 |
| HCM Control Delay | 8 | 7.5 | 9.2 | 8 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 75% | 12% | 100% | 0% |
| Vol Thru, % | 0% | 97% | 12% | 12% | 0% | 91% |
| Vol Right, % | 0% | 3% | 12% | 75% | 0% | 9% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 5 | 186 | 40 | 40 | 5 | 56 |
| LT Vol | 5 | 0 | 30 | 5 | 5 | 0 |
| Through Vol | 0 | 181 | 5 | 5 | 0 | 51 |
| RT Vol | 0 | 5 | 5 | 30 | 0 | 5 |
| Lane Flow Rate | 5 | 202 | 43 | 43 | 5 | 61 |
| Geometry Grp | 7 | 7 | 2 | 2 | 7 | 7 |
| Degree of Util (X) | 0.008 | 0.264 | 0.057 | 0.051 | 0.008 | 0.082 |
| Departure Headway (Hd) | 5.223 | 4.703 | 4.727 | 4.231 | 5.401 | 4.836 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 679 | 756 | 761 | 850 | 665 | 743 |
| Service Time | 3.003 | 2.482 | 2.733 | 2.237 | 3.114 | 2.549 |
| HCM Lane V/C Ratio | 0.007 | 0.267 | 0.057 | 0.051 | 0.008 | 0.082 |
| HCM Control Delay | 8 | 9.2 | 8 | 7.5 | 8.2 | 8 |
| HCM Lane LOS | A | A | A | A | A | A |
| HCM 95th-tile Q | 0 | 1.1 | 0.2 | 0.2 | 0 | 0.3 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.2 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 25 | 5 | 5 | 5 | 5 | 25 | 5 | 30 | 5 | 5 | 15 | 5 |
| Future Vol, veh/h | 25 | 5 | 5 | 5 | 5 | 25 | 5 | 141 | 5 | 5 | 51 | 5 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 27 | 5 | 5 | 5 | 5 | 27 | 5 | 153 | 5 | 5 | 55 | 5 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 1 | 1 |
| HCM Control Delay | 7.8 | 7.3 | 8.7 | 7.9 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 71% | 14% | 100% | 0% |
| Vol Thru, % | 0% | 97% | 14% | 14% | 0% | 91% |
| Vol Right, % | 0% | 3% | 14% | 71% | 0% | 9% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 5 | 146 | 35 | 35 | 5 | 56 |
| LT Vol | 5 | 0 | 25 | 5 | 5 | 0 |
| Through Vol | 0 | 141 | 5 | 5 | 0 | 51 |
| RT Vol | 0 | 5 | 5 | 25 | 0 | 5 |
| Lane Flow Rate | 5 | 159 | 38 | 38 | 5 | 61 |
| Geometry Grp | 7 | 7 | 2 | 2 | 7 | 7 |
| Degree of Util (X) | 0.008 | 0.206 | 0.049 | 0.044 | 0.008 | 0.079 |
| Departure Headway (Hd) | 5.203 | 4.678 | 4.592 | 4.139 | 5.254 | 4.69 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 683 | 762 | 784 | 870 | 673 | 754 |
| Service Time | 2.97 | 2.445 | 2.594 | 2.141 | 3.047 | 2.482 |
| HCM Lane V/C Ratio | 0.007 | 0.209 | 0.048 | 0.044 | 0.007 | 0.081 |
| HCM Control Delay | 8 | 8.7 | 7.8 | 7.3 | 8.1 | 7.9 |
| HCM Lane LOS | A | A | A | A | A | A |
| HCM 95th-tile Q | 0 | 0.8 | 0.2 | 0.1 | 0 | 0.3 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 20 | 5 | 0 | 0 | 5 | 15 | 0 | 5 | 0 | 10 | 5 | 10 |
| Future Vol, veh/h | 20 | 5 | 0 | 0 | 5 | 15 | 0 | 116 | 0 | 10 | 41 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 75 | - | - | 75 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 22 | 5 | 0 | 0 | 5 | 16 | 0 | 126 | 0 | 11 | 45 | 11 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 210 | 199 | 51 | 201 | 204 | 126 | 56 | 0 | 0 | 126 | 0 | 0 |
| Stage 1 | 73 | 73 | - | 126 | 126 | - | - | - | - | - | - | - |
| Stage 2 | 137 | 126 | - | 75 | 78 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 747 | 697 | 1017 | 757 | 692 | 924 | 1549 | - | - | 1460 | - | - |
| Stage 1 | 937 | 834 | - | 878 | 792 | - | - | - | - | - | - | - |
| Stage 2 | 866 | 792 | - | 934 | 830 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 725 | 691 | 1017 | 748 | 686 | 924 | 1549 | - | - | 1460 | - | - |
| Mov Cap-2 Maneuver | 725 | 691 | - | 748 | 686 | - | - | - | - | - | - | - |
| Stage 1 | 937 | 827 | - | 878 | 792 | - | - | - | - | - | - | - |
| Stage 2 | 845 | 792 | - | 921 | 823 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 10.2 | 9.3 | 0 | 1.2 |
| HCM LOS | B | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1549 | - | - | 718 | 850 | 1460 | - | - |
| HCM Lane V/C Ratio | - | - | - | 0.038 | 0.026 | 0.007 | - | - |
| HCM Control Delay (s) | 0 | - | - | 10.2 | 9.3 | 7.5 | - | - |
| HCM Lane LOS | A | - | - | B | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 0.1 | 0 | - | - |

# Appendix D:
# Existing + Project PM Peak Hour Intersection Level of Service Analysis

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 113.4 |
| Intersection LOS | F |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 35 | 195 | 90 | 15 | 115 | 130 | 45 | 175 | 15 | 240 | 285 | 30 |
| Future Vol, veh/h | 35 | 221 | 117 | 15 | 130 | 201 | 60 | 268 | 15 | 378 | 429 | 30 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 38 | 240 | 127 | 16 | 141 | 218 | 65 | 291 | 16 | 411 | 466 | 33 |
| Number of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 3 | 2 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 2 | 3 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 3 | 2 |
| HCM Control Delay | 94.2 | 27.4 | 58.4 | 180.1 |
| HCM LOS | F | D | F | F |

| Lane | NBLn1 | NBLn2 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | WBLn3 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 100% | 0% | 100% | 0% | 0% | 100% | 0% |
| Vol Thru, % | 0% | 95% | 0% | 65% | 0% | 100% | 0% | 0% | 93% |
| Vol Right, % | 0% | 5% | 0% | 35% | 0% | 0% | 100% | 0% | 7% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 60 | 283 | 35 | 338 | 15 | 130 | 201 | 378 | 459 |
| LT Vol | 60 | 0 | 35 | 0 | 15 | 0 | 0 | 378 | 0 |
| Through Vol | 0 | 268 | 0 | 221 | 0 | 130 | 0 | 0 | 429 |
| RT Vol | 0 | 15 | 0 | 117 | 0 | 0 | 201 | 0 | 30 |
| Lane Flow Rate | 65 | 308 | 38 | 367 | 16 | 141 | 218 | 411 | 499 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.204 | 0.918 | 0.118 | 1.063 | 0.052 | 0.433 | 0.627 | 1.188 | 1.367 |
| Departure Headway (Hd) | 12.036 | 11.474 | 11.903 | 11.121 | 12.422 | 11.895 | 11.157 | 10.9 | 10.329 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 300 | 317 | 303 | 331 | 290 | 305 | 326 | 337 | 354 |
| Service Time | 9.736 | 9.174 | 9.603 | 8.821 | 10.122 | 9.595 | 8.857 | 8.6 | 8.029 |
| HCM Lane V/C Ratio | 0.217 | 0.972 | 0.125 | 1.109 | 0.055 | 0.462 | 0.669 | 1.22 | 1.41 |
| HCM Control Delay | 17.8 | 67 | 16.2 | 102.3 | 15.8 | 23.4 | 30.9 | 143.2 | 210.4 |
| HCM Lane LOS | C | F | C | F | C | C | D | F | F |
| HCM 95th-tile Q | 0.7 | 8.9 | 0.4 | 12.7 | 0.2 | 2.1 | 4 | 16.6 | 23.6 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 18.1 |
| Intersection LOS | C |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 250 | 75 | 10 | 145 | 30 | 40 |
| Future Vol, veh/h | 306 | 183 | 31 | 176 | 85 | 58 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 333 | 199 | 34 | 191 | 92 | 63 |
| Number of Lanes | 1 | 0 | 1 | 2 | 1 | 1 |

| Approach | EB | WB | NB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 3 | 1 | 0 |
| Conflicting Approach Left | | NB | EB |
| Conflicting Lanes Left | 0 | 2 | 1 |
| Conflicting Approach Right | NB | | WB |
| Conflicting Lanes Right | 2 | 0 | 3 |
| HCM Control Delay | 24.5 | 8.3 | 10.6 |
| HCM LOS | C | A | B |

| Lane | NBLn1 | NBLn2 | EBLn1 | WBLn1 | WBLn2 | WBLn3 |
|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 0% | 100% | 0% | 0% |
| Vol Thru, % | 0% | 0% | 63% | 0% | 100% | 100% |
| Vol Right, % | 0% | 100% | 37% | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 85 | 58 | 489 | 31 | 88 | 88 |
| LT Vol | 85 | 0 | 0 | 31 | 0 | 0 |
| Through Vol | 0 | 0 | 306 | 0 | 88 | 88 |
| RT Vol | 0 | 58 | 183 | 0 | 0 | 0 |
| Lane Flow Rate | 92 | 63 | 532 | 34 | 96 | 96 |
| Geometry Grp | 8 | 8 | 8 | 7 | 7 | 7 |
| Degree of Util (X) | 0.183 | 0.104 | 0.784 | 0.057 | 0.15 | 0.103 |
| Departure Headway (Hd) | 7.135 | 5.925 | 5.312 | 6.142 | 5.635 | 3.879 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 503 | 605 | 686 | 586 | 639 | 927 |
| Service Time | 4.876 | 3.665 | 3.022 | 3.853 | 3.346 | 1.59 |
| HCM Lane V/C Ratio | 0.183 | 0.104 | 0.776 | 0.058 | 0.15 | 0.104 |
| HCM Control Delay | 11.5 | 9.4 | 24.5 | 9.2 | 9.3 | 7 |
| HCM Lane LOS | B | A | C | A | A | A |
| HCM 95th-tile Q | 0.7 | 0.3 | 7.7 | 0.2 | 0.5 | 0.3 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 9.3 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 5 | 145 | 50 | 15 | 160 | 5 | 20 | 5 | 5 | 5 | 5 | 5 |
| Future Vol, veh/h | 10 | 158 | 106 | 38 | 174 | 5 | 51 | 14 | 16 | 5 | 21 | 12 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 172 | 115 | 41 | 189 | 5 | 55 | 15 | 17 | 5 | 23 | 13 |
| Number of Lanes | 1 | 1 | 1 | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 3 | 3 | 3 | 3 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 3 | 3 | 3 | 3 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 3 | 3 | 3 | 3 |
| HCM Control Delay | 9.4 | 9.3 | 9.5 | 8.9 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | NBLn2 | NBLn3 | EBLn1 | EBLn2 | EBLn3 | WBLn1 | WBLn2 | WBLn3 | SBLn1 | SBLn2 | SBLn3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 0% | 100% | 0% | 0% | 100% | 0% | 0% | 100% | 0% | 0% |
| Vol Thru, % | 0% | 100% | 23% | 0% | 100% | 0% | 0% | 100% | 92% | 0% | 100% | 37% |
| Vol Right, % | 0% | 0% | 77% | 0% | 0% | 100% | 0% | 0% | 8% | 0% | 0% | 63% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 51 | 9 | 21 | 10 | 158 | 106 | 38 | 116 | 63 | 5 | 14 | 19 |
| LT Vol | 51 | 0 | 0 | 10 | 0 | 0 | 38 | 0 | 0 | 5 | 0 | 0 |
| Through Vol | 0 | 9 | 5 | 0 | 158 | 0 | 0 | 116 | 58 | 0 | 14 | 7 |
| RT Vol | 0 | 0 | 16 | 0 | 0 | 106 | 0 | 0 | 5 | 0 | 0 | 12 |
| Lane Flow Rate | 55 | 10 | 22 | 11 | 172 | 115 | 41 | 126 | 68 | 5 | 15 | 21 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.099 | 0.017 | 0.034 | 0.018 | 0.258 | 0.15 | 0.069 | 0.192 | 0.103 | 0.01 | 0.026 | 0.032 |
| Departure Headway (Hd) | 6.454 | 5.954 | 5.412 | 5.901 | 5.401 | 4.701 | 5.98 | 5.48 | 5.424 | 6.561 | 6.061 | 5.619 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 551 | 596 | 655 | 604 | 661 | 757 | 596 | 651 | 656 | 541 | 585 | 631 |
| Service Time | 4.241 | 3.741 | 3.199 | 3.665 | 3.165 | 2.465 | 3.75 | 3.25 | 3.195 | 4.355 | 3.855 | 3.413 |
| HCM Lane V/C Ratio | 0.1 | 0.017 | 0.034 | 0.018 | 0.26 | 0.152 | 0.069 | 0.194 | 0.104 | 0.009 | 0.026 | 0.033 |
| HCM Control Delay | 10 | 8.8 | 8.4 | 8.8 | 10.1 | 8.3 | 9.2 | 9.6 | 8.8 | 9.4 | 9 | 8.6 |
| HCM Lane LOS | A | A | A | A | B | A | A | A | A | A | A | A |
| HCM 95th-tile Q | 0.3 | 0.1 | 0.1 | 0.1 | 1 | 0.5 | 0.2 | 0.7 | 0.3 | 0 | 0.1 | 0.1 |

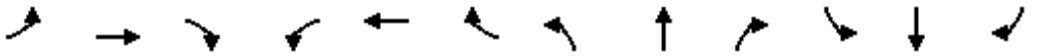
| Intersection | |
|---|---|
| Int Delay, s/veh | 3.8 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 460 | 30 | 150 | 350 | 10 | 145 |
| Future Vol, veh/h | 460 | 53 | 164 | 350 | 24 | 155 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 150 | - | 0 | 25 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 10 | 2 | 2 | 10 | 2 | 2 |
| Mvmt Flow | 500 | 58 | 178 | 380 | 26 | 168 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 558 | 0 | 1265 | 529 |
| Stage 1 | - | - | - | - | 529 | - |
| Stage 2 | - | - | - | - | 736 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1013 | - | 187 | 550 |
| Stage 1 | - | - | - | - | 591 | - |
| Stage 2 | - | - | - | - | 474 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1013 | - | 154 | 550 |
| Mov Cap-2 Maneuver | - | - | - | - | 154 | - |
| Stage 1 | - | - | - | - | 591 | - |
| Stage 2 | - | - | - | - | 391 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 3 | 16.9 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 154 | 550 | - | - | 1013 | - |
| HCM Lane V/C Ratio | 0.169 | 0.306 | - | - | 0.176 | - |
| HCM Control Delay (s) | 33.1 | 14.4 | - | - | 9.3 | - |
| HCM Lane LOS | D | B | - | - | A | - |
| HCM 95th %tile Q(veh) | 0.6 | 1.3 | - | - | 0.6 | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 85 | 100 | 45 | 5 | 85 | 65 | 30 | 300 | 10 | 130 | 505 | 160 |
| Future Volume (veh/h) | 85 | 100 | 74 | 5 | 85 | 65 | 48 | 446 | 10 | 130 | 758 | 160 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 92 | 109 | 80 | 5 | 92 | 71 | 52 | 485 | 11 | 141 | 824 | 174 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 129 | 605 | 267 | 12 | 208 | 147 | 92 | 657 | 15 | 181 | 769 | 651 |
| Arrive On Green | 0.07 | 0.17 | 0.17 | 0.01 | 0.10 | 0.10 | 0.05 | 0.36 | 0.36 | 0.10 | 0.41 | 0.41 |
| Sat Flow, veh/h | 1781 | 3554 | 1571 | 1781 | 1988 | 1406 | 1781 | 1822 | 41 | 1781 | 1870 | 1585 |
| Grp Volume(v), veh/h | 92 | 109 | 80 | 5 | 81 | 82 | 52 | 0 | 496 | 141 | 824 | 174 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1571 | 1781 | 1777 | 1617 | 1781 | 0 | 1863 | 1781 | 1870 | 1585 |
| Q Serve(g_s), s | 2.5 | 1.3 | 2.2 | 0.1 | 2.1 | 2.4 | 1.4 | 0.0 | 11.6 | 3.9 | 20.5 | 3.6 |
| Cycle Q Clear(g_c), s | 2.5 | 1.3 | 2.2 | 0.1 | 2.1 | 2.4 | 1.4 | 0.0 | 11.6 | 3.9 | 20.5 | 3.6 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.87 | 1.00 | | 0.02 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 129 | 605 | 267 | 12 | 186 | 169 | 92 | 0 | 672 | 181 | 769 | 651 |
| V/C Ratio(X) | 0.72 | 0.18 | 0.30 | 0.42 | 0.44 | 0.48 | 0.57 | 0.00 | 0.74 | 0.78 | 1.07 | 0.27 |
| Avail Cap(c_a), veh/h | 339 | 2422 | 1071 | 268 | 1140 | 1037 | 268 | 0 | 672 | 268 | 769 | 651 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.6 | 17.7 | 18.1 | 24.7 | 21.0 | 21.1 | 23.1 | 0.0 | 13.9 | 21.9 | 14.7 | 9.7 |
| Incr Delay (d2), s/veh | 7.2 | 0.1 | 0.6 | 21.6 | 1.6 | 2.1 | 5.4 | 0.0 | 7.1 | 8.3 | 53.6 | 1.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.2 | 0.5 | 0.8 | 0.1 | 0.9 | 0.9 | 0.7 | 0.0 | 5.2 | 1.8 | 18.0 | 1.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 29.8 | 17.9 | 18.7 | 46.3 | 22.6 | 23.2 | 28.5 | 0.0 | 21.0 | 30.2 | 68.3 | 10.7 |
| LnGrp LOS | C | B | B | D | C | C | C | A | C | C | F | B |
| Approach Vol, veh/h | | 281 | | | 168 | | | 548 | | | 1139 | |
| Approach Delay, s/veh | | 22.0 | | | 23.6 | | | 21.7 | | | 54.8 | |
| Approach LOS | | C | | | C | | | C | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 9.6 | 22.5 | 4.8 | 13.0 | 7.1 | 25.0 | 8.1 | 9.7 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 7.5 | 18.0 | 7.5 | 34.0 | 7.5 | 18.0 | 9.5 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 5.9 | 13.6 | 2.1 | 4.2 | 3.4 | 22.5 | 4.5 | 4.4 |
| Green Ext Time (p_c), s | 0.1 | 1.2 | 0.0 | 0.9 | 0.0 | 0.0 | 0.1 | 0.9 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 39.5 |
| HCM 6th LOS | D |

**Notes**

User approved pedestrian interval to be less than phase max green.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 170 | 160 | 125 | 230 | 140 | 65 | 325 | 470 | 170 | 100 | 620 | 85 |
| Future Volume (veh/h) | 170 | 160 | 126 | 238 | 140 | 65 | 325 | 498 | 173 | 100 | 667 | 85 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1752 | 1870 | 1870 | 1870 | 1870 | 1752 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 185 | 174 | 137 | 259 | 152 | 71 | 353 | 541 | 188 | 109 | 725 | 92 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 10 | 2 | 2 | 2 | 2 | 10 | 2 | 2 | 2 |
| Cap, veh/h | 261 | 271 | 228 | 292 | 457 | 386 | 425 | 1061 | 367 | 138 | 1155 | 147 |
| Arrive On Green | 0.08 | 0.14 | 0.14 | 0.17 | 0.24 | 0.24 | 0.12 | 0.41 | 0.41 | 0.08 | 0.36 | 0.36 |
| Sat Flow, veh/h | 3456 | 1870 | 1575 | 1668 | 1870 | 1579 | 3456 | 2587 | 895 | 1781 | 3171 | 402 |
| Grp Volume(v), veh/h | 185 | 174 | 137 | 259 | 152 | 71 | 353 | 371 | 358 | 109 | 406 | 411 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1575 | 1668 | 1870 | 1579 | 1728 | 1777 | 1705 | 1781 | 1777 | 1796 |
| Q Serve(g_s), s | 4.9 | 8.2 | 7.6 | 14.1 | 6.2 | 3.3 | 9.3 | 14.5 | 14.6 | 5.6 | 17.6 | 17.6 |
| Cycle Q Clear(g_c), s | 4.9 | 8.2 | 7.6 | 14.1 | 6.2 | 3.3 | 9.3 | 14.5 | 14.6 | 5.6 | 17.6 | 17.6 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.53 | 1.00 | | 0.22 |
| Lane Grp Cap(c), veh/h | 261 | 271 | 228 | 292 | 457 | 386 | 425 | 729 | 699 | 138 | 647 | 654 |
| V/C Ratio(X) | 0.71 | 0.64 | 0.60 | 0.89 | 0.33 | 0.18 | 0.83 | 0.51 | 0.51 | 0.79 | 0.63 | 0.63 |
| Avail Cap(c_a), veh/h | 426 | 742 | 625 | 331 | 882 | 745 | 463 | 729 | 699 | 200 | 647 | 654 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 42.1 | 37.6 | 37.4 | 37.6 | 29.0 | 27.9 | 40.0 | 20.5 | 20.6 | 42.3 | 24.4 | 24.4 |
| Incr Delay (d2), s/veh | 3.5 | 2.5 | 2.5 | 22.4 | 0.4 | 0.2 | 11.3 | 2.5 | 2.7 | 12.5 | 4.6 | 4.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.2 | 3.8 | 3.0 | 7.4 | 2.8 | 1.2 | 4.5 | 6.2 | 6.0 | 2.9 | 7.9 | 7.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 45.7 | 40.1 | 39.9 | 60.0 | 29.4 | 28.1 | 51.3 | 23.1 | 23.2 | 54.8 | 29.0 | 29.0 |
| LnGrp LOS | D | D | D | E | C | C | D | C | C | D | C | C |
| Approach Vol, veh/h | | 496 | | | 482 | | | 1082 | | | 926 | |
| Approach Delay, s/veh | | 42.1 | | | 45.6 | | | 32.3 | | | 32.0 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 11.7 | 42.8 | 20.8 | 18.0 | 16.0 | 38.5 | 11.5 | 27.3 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 10.5 | 36.0 | 18.5 | 37.0 | 12.5 | 34.0 | 11.5 | 44.0 |
| Max Q Clear Time (g_c+I1), s | 7.6 | 16.6 | 16.1 | 10.2 | 11.3 | 19.6 | 6.9 | 8.2 |
| Green Ext Time (p_c), s | 0.1 | 4.4 | 0.2 | 1.4 | 0.2 | 4.4 | 0.2 | 1.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 36.0 |
| HCM 6th LOS | D |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 120 | 0 | 250 | 110 | 765 | 0 | 0 | 535 | 490 |
| Future Volume (veh/h) | 0 | 0 | 0 | 143 | 0 | 250 | 211 | 796 | 0 | 0 | 591 | 490 |
| Initial Q (Qb), veh | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | | | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | | | | 1870 | 1870 | 1752 | 1870 | 1870 | 0 | 0 | 1841 | 1841 |
| Adj Flow Rate, veh/h | | | | 155 | 0 | 0 | 229 | 865 | 0 | 0 | 642 | 533 |
| Peak Hour Factor | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | | | | 2 | 2 | 10 | 2 | 2 | 0 | 0 | 4 | 4 |
| Cap, veh/h | | | | 214 | 0 | | 287 | 1293 | 0 | 0 | 803 | 680 |
| Arrive On Green | | | | 0.12 | 0.00 | 0.00 | 0.16 | 0.69 | 0.00 | 0.00 | 0.44 | 0.44 |
| Sat Flow, veh/h | | | | 1781 | 0 | 1485 | 1781 | 1870 | 0 | 0 | 1841 | 1560 |
| Grp Volume(v), veh/h | | | | 155 | 0 | 0 | 229 | 865 | 0 | 0 | 642 | 533 |
| Grp Sat Flow(s),veh/h/ln | | | | 1781 | 0 | 1485 | 1781 | 1870 | 0 | 0 | 1841 | 1560 |
| Q Serve(g_s), s | | | | 4.0 | 0.0 | 0.0 | 5.9 | 12.7 | 0.0 | 0.0 | 14.4 | 14.0 |
| Cycle Q Clear(g_c), s | | | | 4.0 | 0.0 | 0.0 | 5.9 | 12.7 | 0.0 | 0.0 | 14.4 | 14.0 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | | | | 214 | 0 | | 287 | 1293 | 0 | 0 | 803 | 680 |
| V/C Ratio(X) | | | | 0.73 | 0.00 | | 0.80 | 0.67 | 0.00 | 0.00 | 0.80 | 0.78 |
| Avail Cap(c_a), veh/h | | | | 672 | 0 | | 392 | 1293 | 0 | 0 | 803 | 680 |
| HCM Platoon Ratio | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | | | | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | | | | 20.2 | 0.0 | 0.0 | 19.3 | 4.2 | 0.0 | 0.0 | 11.6 | 11.5 |
| Incr Delay (d2), s/veh | | | | 4.6 | 0.0 | 0.0 | 8.0 | 2.8 | 0.0 | 0.0 | 8.2 | 8.8 |
| Initial Q Delay(d3),s/veh | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | | | | 1.7 | 0.0 | 0.0 | 2.7 | 2.6 | 0.0 | 0.0 | 6.1 | 5.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 24.9 | 0.0 | 0.0 | 27.2 | 7.0 | 0.0 | 0.0 | 19.8 | 20.3 |
| LnGrp LOS | | | | C | A | | C | A | A | A | B | C |
| Approach Vol, veh/h | | | | | 155 | A | | 1094 | | | 1175 | |
| Approach Delay, s/veh | | | | | 24.9 | | | 11.2 | | | 20.0 | |
| Approach LOS | | | | | C | | | B | | | C | |

| Timer - Assigned Phs | 2 | | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 37.5 | | 12.2 | 25.3 | | 10.2 |
| Change Period (Y+Rc), s | 4.5 | | 4.5 | 4.5 | | 4.5 |
| Max Green Setting (Gmax), s | 33.0 | | 10.5 | 18.0 | | 18.0 |
| Max Q Clear Time (g_c+I1), s | 14.7 | | 7.9 | 16.4 | | 6.0 |
| Green Ext Time (p_c), s | 6.2 | | 0.2 | 1.0 | | 0.6 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 16.4 |
| HCM 6th LOS | B |

**Notes**

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 480 | 0 | 300 | 0 | 0 | 0 | 0 | 395 | 55 | 160 | 495 | 0 |
| Future Volume (veh/h) | 480 | 0 | 474 | 0 | 0 | 0 | 0 | 527 | 69 | 160 | 574 | 0 |
| Initial Q (Qb), veh | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | | | | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1826 | 1870 | 1870 | | | | 0 | 1870 | 1870 | 1826 | 1870 | 0 |
| Adj Flow Rate, veh/h | 522 | 0 | 515 | | | | 0 | 573 | 75 | 174 | 624 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 5 | 2 | 2 | | | | 0 | 2 | 2 | 5 | 2 | 0 |
| Cap, veh/h | 579 | 0 | 515 | | | | 0 | 529 | 69 | 215 | 982 | 0 |
| Arrive On Green | 0.32 | 0.00 | 0.32 | | | | 0.00 | 0.33 | 0.33 | 0.12 | 0.52 | 0.00 |
| Sat Flow, veh/h | 1781 | 0 | 1585 | | | | 0 | 1620 | 212 | 1739 | 1870 | 0 |
| Grp Volume(v), veh/h | 522 | 0 | 515 | | | | 0 | 0 | 648 | 174 | 624 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1585 | | | | 0 | 0 | 1832 | 1739 | 1870 | 0 |
| Q Serve(g_s), s | 16.8 | 0.0 | 19.5 | | | | 0.0 | 0.0 | 19.6 | 5.8 | 14.3 | 0.0 |
| Cycle Q Clear(g_c), s | 16.8 | 0.0 | 19.5 | | | | 0.0 | 0.0 | 19.6 | 5.8 | 14.3 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | | | | 0.00 | | 0.12 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 579 | 0 | 515 | | | | 0 | 0 | 598 | 215 | 982 | 0 |
| V/C Ratio(X) | 0.90 | 0.00 | 1.00 | | | | 0.00 | 0.00 | 1.08 | 0.81 | 0.64 | 0.00 |
| Avail Cap(c_a), veh/h | 579 | 0 | 515 | | | | 0 | 0 | 598 | 217 | 982 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | | | | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 19.3 | 0.0 | 20.2 | | | | 0.0 | 0.0 | 20.2 | 25.6 | 10.2 | 0.0 |
| Incr Delay (d2), s/veh | 17.3 | 0.0 | 39.6 | | | | 0.0 | 0.0 | 61.5 | 19.9 | 3.1 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 8.8 | 0.0 | 11.9 | | | | 0.0 | 0.0 | 17.4 | 3.4 | 5.3 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 36.7 | 0.0 | 59.8 | | | | 0.0 | 0.0 | 81.7 | 45.5 | 13.3 | 0.0 |
| LnGrp LOS | D | A | E | | | | A | A | F | D | B | A |
| Approach Vol, veh/h | | 1037 | | | | | | 648 | | | 798 | |
| Approach Delay, s/veh | | 48.2 | | | | | | 81.7 | | | 20.3 | |
| Approach LOS | | D | | | | | | F | | | C | |

| Timer - Assigned Phs | 1 | 2 | 4 | 6 |
|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 11.9 | 24.1 | 24.0 | 36.0 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 7.5 | 19.5 | 19.5 | 31.5 |
| Max Q Clear Time (g_c+I1), s | 7.8 | 21.6 | 21.5 | 16.3 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 3.6 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 48.0 |
| HCM 6th LOS | D |

| Intersection | |
|---|---|
| Int Delay, s/veh | 12.8 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↑ | ↑ | | ↰ | ↱ |
| Traffic Vol, veh/h | 0 | 605 | 440 | 0 | 180 | 60 |
| Future Vol, veh/h | 0 | 615 | 441 | 0 | 185 | 73 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 25 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 668 | 479 | 0 | 201 | 79 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | 1147 | 479 |
| Stage 1 | - | - | - | - | 479 | - |
| Stage 2 | - | - | - | - | 668 | - |
| Critical Hdwy | - | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | 0 | 220 | 587 |
| Stage 1 | 0 | - | - | 0 | 623 | - |
| Stage 2 | 0 | - | - | 0 | 510 | - |
| Platoon blocked, % | | - | - | | | |
| Mov Cap-1 Maneuver | - | - | - | - | 220 | 587 |
| Mov Cap-2 Maneuver | - | - | - | - | 220 | - |
| Stage 1 | - | - | - | - | 623 | - |
| Stage 2 | - | - | - | - | 510 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 65.3 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | EBT | WBT | SBLn1 | SBLn2 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | 220 | 587 |
| HCM Lane V/C Ratio | - | - | 0.914 | 0.135 |
| HCM Control Delay (s) | - | - | 86.3 | 12.1 |
| HCM Lane LOS | - | - | F | B |
| HCM 95th %tile Q(veh) | - | - | 7.6 | 0.5 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 131 |
| Intersection LOS | F |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 270 | 405 | 110 | 0 | 5 | 5 | 50 | 70 | 25 | 55 | 65 | 385 |
| Future Vol, veh/h | 276 | 409 | 115 | 0 | 5 | 5 | 50 | 88 | 41 | 55 | 123 | 386 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 300 | 445 | 125 | 0 | 5 | 5 | 54 | 96 | 45 | 60 | 134 | 420 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 1 | 1 |
| HCM Control Delay | 234.6 | 11.4 | 14.7 | 23.2 |
| HCM LOS | F | B | B | C |

| Lane | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Vol Left, % | 36% | 0% | 34% | 0% | 31% | 0% |
| Vol Thru, % | 64% | 0% | 51% | 50% | 69% | 0% |
| Vol Right, % | 0% | 100% | 14% | 50% | 0% | 100% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 138 | 41 | 800 | 10 | 178 | 386 |
| LT Vol | 50 | 0 | 276 | 0 | 55 | 0 |
| Through Vol | 88 | 0 | 409 | 5 | 123 | 0 |
| RT Vol | 0 | 41 | 115 | 5 | 0 | 386 |
| Lane Flow Rate | 150 | 45 | 870 | 11 | 193 | 420 |
| Geometry Grp | 7 | 7 | 2 | 2 | 7 | 7 |
| Degree of Util (X) | 0.317 | 0.083 | 1.462 | 0.022 | 0.377 | 0.718 |
| Departure Headway (Hd) | 8.945 | 8.021 | 6.053 | 8.179 | 8.232 | 7.345 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 405 | 450 | 609 | 440 | 441 | 495 |
| Service Time | 6.645 | 5.721 | 4.055 | 6.179 | 5.932 | 5.045 |
| HCM Lane V/C Ratio | 0.37 | 0.1 | 1.429 | 0.025 | 0.438 | 0.848 |
| HCM Control Delay | 15.7 | 11.4 | 234.6 | 11.4 | 15.8 | 26.6 |
| HCM Lane LOS | C | B | F | B | C | D |
| HCM 95th-tile Q | 1.3 | 0.3 | 42.1 | 0.1 | 1.7 | 5.7 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 40.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 315 | 0 | 50 | 80 | 265 | 0 | 0 | 190 | 35 |
| Future Vol, veh/h | 0 | 0 | 0 | 351 | 0 | 50 | 90 | 279 | 0 | 0 | 213 | 35 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | 25 | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 1 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 382 | 0 | 54 | 98 | 303 | 0 | 0 | 232 | 38 |

| Major/Minor | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 750 | - | 303 | 270 | 0 | - | - | - | 0 |
| Stage 1 | 499 | - | - | - | - | - | - | - | - |
| Stage 2 | 251 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 6.42 | - | 6.22 | 4.12 | - | - | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | - | 3.318 | 2.218 | - | - | - | - | - |
| Pot Cap-1 Maneuver | ~ 379 | 0 | 737 | 1293 | - | 0 | 0 | - | - |
| Stage 1 | 610 | 0 | - | - | - | 0 | 0 | - | - |
| Stage 2 | 791 | 0 | - | - | - | 0 | 0 | - | - |
| Platoon blocked, % | | | | | - | | | - | - |
| Mov Cap-1 Maneuver | ~ 345 | 0 | 737 | 1293 | - | - | - | - | - |
| Mov Cap-2 Maneuver | ~ 345 | 0 | - | - | - | - | - | - | - |
| Stage 1 | 554 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 791 | 0 | - | - | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 102 | 2 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | WBLn1 | WBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1293 | - | 345 | 737 | - | - |
| HCM Lane V/C Ratio | 0.076 | - | 1.106 | 0.074 | - | - |
| HCM Control Delay (s) | 8 | 0 | 115.1 | 10.3 | - | - |
| HCM Lane LOS | A | A | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | 14.5 | 0.2 | - | - |

| Notes | | | |
|---|---|---|---|
| ~: Volume exceeds capacity | $: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.9 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 100 | 0 | 0 | 225 |
| Future Vol, veh/h | 0 | 108 | 100 | 1 | 171 | 225 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 117 | 109 | 1 | 186 | 245 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 727 | 110 | 0 | 0 | 110 | 0 |
| Stage 1 | 110 | - | - | - | - | - |
| Stage 2 | 617 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 391 | 943 | - | - | 1480 | - |
| Stage 1 | 915 | - | - | - | - | - |
| Stage 2 | 538 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 334 | 943 | - | - | 1480 | - |
| Mov Cap-2 Maneuver | 334 | - | - | - | - | - |
| Stage 1 | 915 | - | - | - | - | - |
| Stage 2 | 460 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.4 | 0 | 3.4 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 943 | 1480 | - |
| HCM Lane V/C Ratio | - | - | 0.124 | 0.126 | - |
| HCM Control Delay (s) | - | - | 9.4 | 7.8 | 0 |
| HCM Lane LOS | - | - | A | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.4 | 0.4 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.2 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 172 | 64 | 34 | 0 | 44 |
| Future Vol, veh/h | 0 | 172 | 64 | 34 | 0 | 44 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 187 | 70 | 37 | 0 | 48 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | - | 89 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 969 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 969 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 8.9 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | 969 |
| HCM Lane V/C Ratio | - | - | - | 0.049 |
| HCM Control Delay (s) | - | - | - | 8.9 |
| HCM Lane LOS | - | - | - | A |
| HCM 95th %tile Q(veh) | - | - | - | 0.2 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.6 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 115 | 57 | 77 | 21 | 35 | 21 |
| Future Vol, veh/h | 115 | 57 | 77 | 21 | 35 | 21 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 100 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 125 | 62 | 84 | 23 | 38 | 23 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 107 | 0 | - | 0 | 408 | 96 |
| Stage 1 | - | - | - | - | 96 | - |
| Stage 2 | - | - | - | - | 312 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 1484 | - | - | - | 599 | 960 |
| Stage 1 | - | - | - | - | 928 | - |
| Stage 2 | - | - | - | - | 742 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1484 | - | - | - | 549 | 960 |
| Mov Cap-2 Maneuver | - | - | - | - | 549 | - |
| Stage 1 | - | - | - | - | 850 | - |
| Stage 2 | - | - | - | - | 742 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 5.1 | 0 | 11.1 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1484 | - | - | - | 654 |
| HCM Lane V/C Ratio | 0.084 | - | - | - | 0.093 |
| HCM Control Delay (s) | 7.6 | - | - | - | 11.1 |
| HCM Lane LOS | A | - | - | - | B |
| HCM 95th %tile Q(veh) | 0.3 | - | - | - | 0.3 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 10 | 82 | 88 | 19 | 16 | 10 |
| Future Vol, veh/h | 10 | 82 | 88 | 19 | 16 | 10 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 89 | 96 | 21 | 17 | 11 |
| Number of Lanes | 1 | 1 | 1 | 0 | 1 | 1 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 2 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 2 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 2 | 2 |
| HCM Control Delay | 8 | 8.1 | 7.9 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | EBLn2 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 0% | 100% | 0% |
| Vol Thru, % | 0% | 100% | 82% | 0% | 0% |
| Vol Right, % | 0% | 0% | 18% | 0% | 100% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 10 | 82 | 107 | 16 | 10 |
| LT Vol | 10 | 0 | 0 | 16 | 0 |
| Through Vol | 0 | 82 | 88 | 0 | 0 |
| RT Vol | 0 | 0 | 19 | 0 | 10 |
| Lane Flow Rate | 11 | 89 | 116 | 17 | 11 |
| Geometry Grp | 7 | 7 | 4 | 7 | 7 |
| Degree of Util (X) | 0.016 | 0.115 | 0.141 | 0.027 | 0.013 |
| Departure Headway (Hd) | 5.141 | 4.64 | 4.35 | 5.548 | 4.344 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 693 | 768 | 818 | 649 | 829 |
| Service Time | 2.893 | 2.392 | 2.414 | 3.248 | 2.044 |
| HCM Lane V/C Ratio | 0.016 | 0.116 | 0.142 | 0.026 | 0.013 |
| HCM Control Delay | 8 | 8 | 8.1 | 8.4 | 7.1 |
| HCM Lane LOS | A | A | A | A | A |
| HCM 95th-tile Q | 0 | 0.4 | 0.5 | 0.1 | 0 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.9 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 62 | 36 | 69 | 22 | 12 | 38 |
| Future Vol, veh/h | 62 | 36 | 69 | 22 | 12 | 38 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 100 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 67 | 39 | 75 | 24 | 13 | 41 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 99 | 0 | - | 0 | 260 | 87 |
| Stage 1 | - | - | - | - | 87 | - |
| Stage 2 | - | - | - | - | 173 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 1494 | - | - | - | 729 | 971 |
| Stage 1 | - | - | - | - | 936 | - |
| Stage 2 | - | - | - | - | 857 | - |
| Platoon blocked, % | | | - | - | - | |
| Mov Cap-1 Maneuver | 1494 | - | - | - | 696 | 971 |
| Mov Cap-2 Maneuver | - | - | - | - | 696 | - |
| Stage 1 | - | - | - | - | 894 | - |
| Stage 2 | - | - | - | - | 857 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 4.8 | 0 | 9.3 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1494 | - | - | - | 887 |
| HCM Lane V/C Ratio | 0.045 | - | - | - | 0.061 |
| HCM Control Delay (s) | 7.5 | - | - | - | 9.3 |
| HCM Lane LOS | A | - | - | - | A |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.2 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.5 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 18 | 30 | 0 | 20 | 57 | 11 | 1 | 0 | 20 | 5 | 0 | 33 |
| Future Vol, veh/h | 18 | 30 | 0 | 20 | 57 | 11 | 1 | 0 | 20 | 5 | 0 | 33 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 20 | 33 | 0 | 22 | 62 | 12 | 1 | 0 | 22 | 5 | 0 | 36 |
| Number of Lanes | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 2 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 2 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 2 |
| HCM Control Delay | 7.8 | 7.7 | 6.8 | 7 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | SBLn1 |
|---|---|---|---|---|---|
| Vol Left, % | 5% | 100% | 0% | 23% | 13% |
| Vol Thru, % | 0% | 0% | 100% | 65% | 0% |
| Vol Right, % | 95% | 0% | 0% | 12% | 87% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 21 | 18 | 30 | 88 | 38 |
| LT Vol | 1 | 18 | 0 | 20 | 5 |
| Through Vol | 0 | 0 | 30 | 57 | 0 |
| RT Vol | 20 | 0 | 0 | 11 | 33 |
| Lane Flow Rate | 23 | 20 | 33 | 96 | 41 |
| Geometry Grp | 2 | 7 | 7 | 5 | 2 |
| Degree of Util (X) | 0.023 | 0.028 | 0.043 | 0.11 | 0.043 |
| Departure Headway (Hd) | 3.654 | 5.196 | 4.695 | 4.155 | 3.706 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 960 | 689 | 762 | 860 | 948 |
| Service Time | 1.753 | 2.929 | 2.428 | 2.193 | 1.802 |
| HCM Lane V/C Ratio | 0.024 | 0.029 | 0.043 | 0.112 | 0.043 |
| HCM Control Delay | 6.8 | 8.1 | 7.6 | 7.7 | 7 |
| HCM Lane LOS | A | A | A | A | A |
| HCM 95th-tile Q | 0.1 | 0.1 | 0.1 | 0.4 | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.2 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 37 | 10 | 15 | 14 | 28 | 67 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 40 | 11 | 16 | 15 | 30 | 73 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 114 | 67 | 103 | 0 | - | 0 |
| Stage 1 | 67 | - | - | - | - | - |
| Stage 2 | 47 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 882 | 997 | 1489 | - | - | - |
| Stage 1 | 956 | - | - | - | - | - |
| Stage 2 | 975 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 872 | 997 | 1489 | - | - | - |
| Mov Cap-2 Maneuver | 872 | - | - | - | - | - |
| Stage 1 | 945 | - | - | - | - | - |
| Stage 2 | 975 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.3 | 3.9 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1489 | - | 896 | - | - |
| HCM Lane V/C Ratio | 0.011 | - | 0.057 | - | - |
| HCM Control Delay (s) | 7.4 | 0 | 9.3 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.2 | - | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.6 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 4 | 5 | 0 | 2 | 6 | 28 | 0 | 41 | 8 | 45 | 77 | 7 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 4 | 5 | 0 | 2 | 7 | 30 | 0 | 45 | 9 | 49 | 84 | 8 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 7.5 | 7.1 | 7.3 | 7.9 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 0% | 44% | 6% | 35% |
| Vol Thru, % | 84% | 56% | 17% | 60% |
| Vol Right, % | 16% | 0% | 78% | 5% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 49 | 9 | 36 | 129 |
| LT Vol | 0 | 4 | 2 | 45 |
| Through Vol | 41 | 5 | 6 | 77 |
| RT Vol | 8 | 0 | 28 | 7 |
| Lane Flow Rate | 53 | 10 | 39 | 140 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.06 | 0.012 | 0.042 | 0.16 |
| Departure Headway (Hd) | 4.028 | 4.388 | 3.818 | 4.097 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 884 | 802 | 921 | 874 |
| Service Time | 2.078 | 2.487 | 1.913 | 2.128 |
| HCM Lane V/C Ratio | 0.06 | 0.012 | 0.042 | 0.16 |
| HCM Control Delay | 7.3 | 7.5 | 7.1 | 7.9 |
| HCM Lane LOS | A | A | A | A |
| HCM 95th-tile Q | 0.2 | 0 | 0.1 | 0.6 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.1 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 11 | 5 | 14 | 0 | 5 | 30 | 5 | 8 | 6 | 40 | 2 | 37 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 12 | 5 | 15 | 0 | 5 | 33 | 5 | 9 | 7 | 43 | 2 | 40 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 7.1 | 6.8 | 7.1 | 7.3 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 26% | 37% | 0% | 51% |
| Vol Thru, % | 42% | 17% | 14% | 3% |
| Vol Right, % | 32% | 47% | 86% | 47% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 19 | 30 | 35 | 79 |
| LT Vol | 5 | 11 | 0 | 40 |
| Through Vol | 8 | 5 | 5 | 2 |
| RT Vol | 6 | 14 | 30 | 37 |
| Lane Flow Rate | 21 | 33 | 38 | 86 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.023 | 0.036 | 0.038 | 0.093 |
| Departure Headway (Hd) | 3.985 | 3.94 | 3.627 | 3.892 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 895 | 904 | 980 | 921 |
| Service Time | 2.022 | 1.986 | 1.676 | 1.918 |
| HCM Lane V/C Ratio | 0.023 | 0.037 | 0.039 | 0.093 |
| HCM Control Delay | 7.1 | 7.1 | 6.8 | 7.3 |
| HCM Lane LOS | A | A | A | A |
| HCM 95th-tile Q | 0.1 | 0.1 | 0.1 | 0.3 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.3 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 5 | 5 | 5 | 140 | 170 | 5 |
| Future Vol, veh/h | 39 | 6 | 10 | 140 | 170 | 68 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 42 | 7 | 11 | 152 | 185 | 74 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 396 | 222 | 259 | 0 | - | 0 |
| Stage 1 | 222 | - | - | - | - | - |
| Stage 2 | 174 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 609 | 818 | 1306 | - | - | - |
| Stage 1 | 815 | - | - | - | - | - |
| Stage 2 | 856 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 604 | 818 | 1306 | - | - | - |
| Mov Cap-2 Maneuver | 604 | - | - | - | - | - |
| Stage 1 | 808 | - | - | - | - | - |
| Stage 2 | 856 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 11.2 | 0.5 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1306 | - | 626 | - | - |
| HCM Lane V/C Ratio | 0.008 | - | 0.078 | - | - |
| HCM Control Delay (s) | 7.8 | 0 | 11.2 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.3 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 10 | 0 | 0 | 30 |
| Future Vol, veh/h | 0 | 0 | 61 | 0 | 0 | 125 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 400 | - | - | 300 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 66 | 0 | 0 | 136 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 202 | 66 | 0 | 0 | 66 | 0 |
| Stage 1 | 66 | - | - | - | - | - |
| Stage 2 | 136 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 787 | 998 | - | - | 1536 | - |
| Stage 1 | 957 | - | - | - | - | - |
| Stage 2 | 890 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 787 | 998 | - | - | 1536 | - |
| Mov Cap-2 Maneuver | 787 | - | - | - | - | - |
| Stage 1 | 957 | - | - | - | - | - |
| Stage 2 | 890 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | - | 1536 | - |
| HCM Lane V/C Ratio | - | - | - | - | - | - |
| HCM Control Delay (s) | - | - | 0 | 0 | 0 | - |
| HCM Lane LOS | - | - | A | A | A | - |
| HCM 95th %tile Q(veh) | - | - | - | - | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 20 | 0 | 0 | 10 | 30 | 40 |
| Future Vol, veh/h | 20 | 0 | 0 | 61 | 125 | 40 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 22 | 0 | 0 | 66 | 136 | 43 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 224 | 158 | 179 | 0 | - | 0 |
| Stage 1 | 158 | - | - | - | - | - |
| Stage 2 | 66 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 764 | 887 | 1397 | - | - | - |
| Stage 1 | 871 | - | - | - | - | - |
| Stage 2 | 957 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 764 | 887 | 1397 | - | - | - |
| Mov Cap-2 Maneuver | 764 | - | - | - | - | - |
| Stage 1 | 871 | - | - | - | - | - |
| Stage 2 | 957 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.9 | 0 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1397 | - | 764 | - | - |
| HCM Lane V/C Ratio | - | - | 0.028 | - | - |
| HCM Control Delay (s) | 0 | - | 9.9 | - | - |
| HCM Lane LOS | A | - | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.5 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 10 | 0 | 0 | 0 | 0 | 30 |
| Future Vol, veh/h | 10 | 0 | 0 | 51 | 95 | 30 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 100 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 0 | 0 | 55 | 103 | 33 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 175 | 120 | 136 | 0 | - | 0 |
| Stage 1 | 120 | - | - | - | - | - |
| Stage 2 | 55 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 815 | 931 | 1448 | - | - | - |
| Stage 1 | 905 | - | - | - | - | - |
| Stage 2 | 968 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 815 | 931 | 1448 | - | - | - |
| Mov Cap-2 Maneuver | 815 | - | - | - | - | - |
| Stage 1 | 905 | - | - | - | - | - |
| Stage 2 | 968 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.5 | 0 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1448 | - | 815 | - | - | - |
| HCM Lane V/C Ratio | - | - | 0.013 | - | - | - |
| HCM Control Delay (s) | 0 | - | 9.5 | 0 | - | - |
| HCM Lane LOS | A | - | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0 | - | - | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.8 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 15 | 5 | 5 | 5 | 5 | 10 | 5 | 45 | 5 | 15 | 50 | 20 |
| Future Vol, veh/h | 15 | 5 | 5 | 5 | 5 | 10 | 5 | 118 | 5 | 15 | 179 | 20 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 5 | 5 | 5 | 5 | 11 | 5 | 128 | 5 | 16 | 195 | 22 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 1 | 1 |
| HCM Control Delay | 8 | 7.7 | 8.6 | 9.1 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 60% | 25% | 100% | 0% |
| Vol Thru, % | 0% | 96% | 20% | 25% | 0% | 90% |
| Vol Right, % | 0% | 4% | 20% | 50% | 0% | 10% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 5 | 123 | 25 | 20 | 15 | 199 |
| LT Vol | 5 | 0 | 15 | 5 | 15 | 0 |
| Through Vol | 0 | 118 | 5 | 5 | 0 | 179 |
| RT Vol | 0 | 5 | 5 | 10 | 0 | 20 |
| Lane Flow Rate | 5 | 134 | 27 | 22 | 16 | 216 |
| Geometry Grp | 7 | 7 | 2 | 2 | 7 | 7 |
| Degree of Util (X) | 0.008 | 0.179 | 0.037 | 0.028 | 0.024 | 0.277 |
| Departure Headway (Hd) | 5.34 | 4.81 | 4.84 | 4.597 | 5.189 | 4.618 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 674 | 750 | 743 | 782 | 683 | 770 |
| Service Time | 3.04 | 2.51 | 2.849 | 2.607 | 2.971 | 2.4 |
| HCM Lane V/C Ratio | 0.007 | 0.179 | 0.036 | 0.028 | 0.023 | 0.281 |
| HCM Control Delay | 8.1 | 8.6 | 8 | 7.7 | 8.1 | 9.2 |
| HCM Lane LOS | A | A | A | A | A | A |
| HCM 95th-tile Q | 0 | 0.6 | 0.1 | 0.1 | 0.1 | 1.1 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.6 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 15 | 5 | 5 | 5 | 5 | 10 | 5 | 30 | 5 | 10 | 30 | 20 |
| Future Vol, veh/h | 15 | 5 | 5 | 5 | 5 | 10 | 5 | 103 | 5 | 10 | 159 | 20 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 5 | 5 | 5 | 5 | 11 | 5 | 112 | 5 | 11 | 173 | 22 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 1 | 1 |
| HCM Control Delay | 7.9 | 7.6 | 8.3 | 8.9 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 60% | 25% | 100% | 0% |
| Vol Thru, % | 0% | 95% | 20% | 25% | 0% | 89% |
| Vol Right, % | 0% | 5% | 20% | 50% | 0% | 11% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 5 | 108 | 25 | 20 | 10 | 179 |
| LT Vol | 5 | 0 | 15 | 5 | 10 | 0 |
| Through Vol | 0 | 103 | 5 | 5 | 0 | 159 |
| RT Vol | 0 | 5 | 5 | 10 | 0 | 20 |
| Lane Flow Rate | 5 | 117 | 27 | 22 | 11 | 195 |
| Geometry Grp | 7 | 7 | 2 | 2 | 7 | 7 |
| Degree of Util (X) | 0.008 | 0.153 | 0.036 | 0.027 | 0.016 | 0.249 |
| Departure Headway (Hd) | 5.223 | 4.689 | 4.74 | 4.498 | 5.181 | 4.602 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 678 | 755 | 760 | 800 | 686 | 772 |
| Service Time | 3.013 | 2.479 | 2.741 | 2.5 | 2.952 | 2.373 |
| HCM Lane V/C Ratio | 0.007 | 0.155 | 0.036 | 0.028 | 0.016 | 0.253 |
| HCM Control Delay | 8.1 | 8.3 | 7.9 | 7.6 | 8 | 8.9 |
| HCM Lane LOS | A | A | A | A | A | A |
| HCM 95th-tile Q | 0 | 0.5 | 0.1 | 0.1 | 0 | 1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↔ | | | ↔ | | ↰ | ↱ | | ↰ | ↱ | |
| Traffic Vol, veh/h | 20 | 5 | 0 | 0 | 5 | 15 | 0 | 5 | 0 | 15 | 5 | 20 |
| Future Vol, veh/h | 20 | 5 | 0 | 0 | 5 | 15 | 0 | 78 | 0 | 15 | 134 | 20 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 75 | - | - | 75 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 22 | 5 | 0 | 0 | 5 | 16 | 0 | 85 | 0 | 16 | 146 | 22 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 285 | 274 | 157 | 277 | 285 | 85 | 168 | 0 | 0 | 85 | 0 | 0 |
| Stage 1 | 189 | 189 | - | 85 | 85 | - | - | - | - | - | - | - |
| Stage 2 | 96 | 85 | - | 192 | 200 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 667 | 633 | 889 | 675 | 624 | 974 | 1410 | - | - | 1512 | - | - |
| Stage 1 | 813 | 744 | - | 923 | 824 | - | - | - | - | - | - | - |
| Stage 2 | 911 | 824 | - | 810 | 736 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 646 | 626 | 889 | 665 | 617 | 974 | 1410 | - | - | 1512 | - | - |
| Mov Cap-2 Maneuver | 646 | 626 | - | 665 | 617 | - | - | - | - | - | - | - |
| Stage 1 | 813 | 736 | - | 923 | 824 | - | - | - | - | - | - | - |
| Stage 2 | 890 | 824 | - | 796 | 728 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 10.9 | 9.3 | 0 | 0.7 |
| HCM LOS | B | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1410 | - | - | 642 | 851 | 1512 | - | - |
| HCM Lane V/C Ratio | - | - | - | 0.042 | 0.026 | 0.011 | - | - |
| HCM Control Delay (s) | 0 | - | - | 10.9 | 9.3 | 7.4 | - | - |
| HCM Lane LOS | A | - | - | B | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 0.1 | 0 | - | - |

# Appendix E:
# Cumulative AM Peak Hour Intersection Level of Service Analysis

FEHR PEERS

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 190 | 100 | 110 | 30 | 110 | 150 | 120 | 550 | 30 | 100 | 280 | 160 |
| Future Volume (veh/h) | 190 | 100 | 110 | 30 | 110 | 150 | 120 | 550 | 30 | 100 | 280 | 160 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 207 | 109 | 120 | 33 | 120 | 163 | 130 | 598 | 33 | 109 | 304 | 174 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 263 | 502 | 426 | 65 | 295 | 250 | 169 | 906 | 50 | 141 | 886 | 395 |
| Arrive On Green | 0.15 | 0.27 | 0.27 | 0.04 | 0.16 | 0.16 | 0.09 | 0.26 | 0.26 | 0.08 | 0.25 | 0.25 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 3424 | 189 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 207 | 109 | 120 | 33 | 120 | 163 | 130 | 310 | 321 | 109 | 304 | 174 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1777 | 1836 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 5.8 | 2.3 | 3.1 | 0.9 | 3.0 | 5.0 | 3.7 | 8.0 | 8.0 | 3.1 | 3.6 | 4.7 |
| Cycle Q Clear(g_c), s | 5.8 | 2.3 | 3.1 | 0.9 | 3.0 | 5.0 | 3.7 | 8.0 | 8.0 | 3.1 | 3.6 | 4.7 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.10 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 263 | 502 | 426 | 65 | 295 | 250 | 169 | 470 | 486 | 141 | 886 | 395 |
| V/C Ratio(X) | 0.79 | 0.22 | 0.28 | 0.51 | 0.41 | 0.65 | 0.77 | 0.66 | 0.66 | 0.77 | 0.34 | 0.44 |
| Avail Cap(c_a), veh/h | 434 | 1312 | 1112 | 260 | 1130 | 958 | 330 | 1004 | 1038 | 330 | 2009 | 896 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 21.1 | 14.6 | 14.8 | 24.3 | 19.4 | 20.3 | 22.7 | 16.8 | 16.8 | 23.2 | 15.8 | 16.2 |
| Incr Delay (d2), s/veh | 5.2 | 0.2 | 0.4 | 6.0 | 0.9 | 2.9 | 7.3 | 1.6 | 1.5 | 8.6 | 0.2 | 0.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.5 | 0.9 | 1.0 | 0.5 | 1.2 | 1.8 | 1.7 | 3.0 | 3.1 | 1.5 | 1.3 | 1.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 26.3 | 14.8 | 15.2 | 30.2 | 20.4 | 23.2 | 30.0 | 18.4 | 18.4 | 31.7 | 16.0 | 17.0 |
| LnGrp LOS | C | B | B | C | C | C | C | B | B | C | B | B |
| Approach Vol, veh/h | | 436 | | | 316 | | | 761 | | | 587 | |
| Approach Delay, s/veh | | 20.4 | | | 22.8 | | | 20.3 | | | 19.2 | |
| Approach LOS | | C | | | C | | | C | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.6 | 18.1 | 6.4 | 18.3 | 9.4 | 17.3 | 12.1 | 12.6 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 9.5 | 29.0 | 7.5 | 36.0 | 9.5 | 29.0 | 12.5 | 31.0 |
| Max Q Clear Time (g_c+I1), s | 5.1 | 10.0 | 2.9 | 5.1 | 5.7 | 6.7 | 7.8 | 7.0 |
| Green Ext Time (p_c), s | 0.1 | 3.6 | 0.0 | 1.0 | 0.1 | 2.4 | 0.2 | 1.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 20.4 |
| HCM 6th LOS | C |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 120 | 40 | 20 | 120 | 110 | 50 |
| Future Volume (veh/h) | 120 | 40 | 20 | 120 | 110 | 50 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 130 | 43 | 22 | 130 | 120 | 54 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 486 | 155 | 51 | 1434 | 379 | 338 |
| Arrive On Green | 0.18 | 0.18 | 0.03 | 0.40 | 0.21 | 0.21 |
| Sat Flow, veh/h | 2744 | 844 | 1781 | 3647 | 1781 | 1585 |
| Grp Volume(v), veh/h | 86 | 87 | 22 | 130 | 120 | 54 |
| Grp Sat Flow(s),veh/h/ln | 1777 | 1718 | 1781 | 1777 | 1781 | 1585 |
| Q Serve(g_s), s | 1.0 | 1.0 | 0.3 | 0.5 | 1.3 | 0.7 |
| Cycle Q Clear(g_c), s | 1.0 | 1.0 | 0.3 | 0.5 | 1.3 | 0.7 |
| Prop In Lane | | 0.49 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 326 | 315 | 51 | 1434 | 379 | 338 |
| V/C Ratio(X) | 0.26 | 0.28 | 0.43 | 0.09 | 0.32 | 0.16 |
| Avail Cap(c_a), veh/h | 1930 | 1867 | 721 | 5980 | 2011 | 1789 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 8.2 | 8.2 | 11.2 | 4.3 | 7.8 | 7.5 |
| Incr Delay (d2), s/veh | 0.4 | 0.5 | 5.7 | 0.0 | 0.5 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.2 | 0.2 | 0.2 | 0.1 | 0.4 | 0.2 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 8.6 | 8.7 | 17.0 | 4.4 | 8.3 | 7.7 |
| LnGrp LOS | A | A | B | A | A | A |
| Approach Vol, veh/h | 173 | | | 152 | 174 | |
| Approach Delay, s/veh | 8.7 | | | 6.2 | 8.1 | |
| Approach LOS | A | | | A | A | |

| Timer - Assigned Phs | 1 | 2 | | | | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.2 | 8.8 | | | | 14.0 | 9.5 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | | | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 9.5 | 25.5 | | | | 39.5 | 26.5 |
| Max Q Clear Time (g_c+I1), s | 2.3 | 3.0 | | | | 2.5 | 3.3 |
| Green Ext Time (p_c), s | 0.0 | 0.9 | | | | 0.8 | 0.5 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | 7.7 | |
| HCM 6th LOS | A | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 10 | 210 | 20 | 120 | 90 | 10 | 75 | 50 | 320 | 10 | 10 | 10 |
| Future Volume (veh/h) | 10 | 210 | 20 | 120 | 90 | 10 | 75 | 50 | 320 | 10 | 10 | 10 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 11 | 228 | 22 | 130 | 98 | 11 | 82 | 54 | 348 | 11 | 11 | 11 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 26 | 502 | 224 | 169 | 716 | 79 | 133 | 541 | 483 | 26 | 443 | 381 |
| Arrive On Green | 0.01 | 0.14 | 0.14 | 0.09 | 0.22 | 0.22 | 0.07 | 0.30 | 0.30 | 0.01 | 0.24 | 0.24 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 1781 | 3226 | 357 | 1781 | 1777 | 1585 | 1781 | 1811 | 1557 |
| Grp Volume(v), veh/h | 11 | 228 | 22 | 130 | 53 | 56 | 82 | 54 | 348 | 11 | 11 | 11 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1781 | 1777 | 1806 | 1781 | 1777 | 1585 | 1781 | 1777 | 1590 |
| Q Serve(g_s), s | 0.2 | 2.4 | 0.5 | 2.9 | 1.0 | 1.0 | 1.8 | 0.9 | 7.9 | 0.2 | 0.2 | 0.2 |
| Cycle Q Clear(g_c), s | 0.2 | 2.4 | 0.5 | 2.9 | 1.0 | 1.0 | 1.8 | 0.9 | 7.9 | 0.2 | 0.2 | 0.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.20 | 1.00 | | 1.00 | 1.00 | | 0.98 |
| Lane Grp Cap(c), veh/h | 26 | 502 | 224 | 169 | 394 | 401 | 133 | 541 | 483 | 26 | 434 | 389 |
| V/C Ratio(X) | 0.43 | 0.45 | 0.10 | 0.77 | 0.14 | 0.14 | 0.62 | 0.10 | 0.72 | 0.43 | 0.02 | 0.03 |
| Avail Cap(c_a), veh/h | 330 | 2538 | 1132 | 330 | 1269 | 1290 | 330 | 1234 | 1101 | 330 | 1234 | 1104 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 19.8 | 15.9 | 15.1 | 17.9 | 12.6 | 12.6 | 18.2 | 10.1 | 12.5 | 19.8 | 11.6 | 11.6 |
| Incr Delay (d2), s/veh | 11.0 | 0.6 | 0.2 | 7.2 | 0.2 | 0.2 | 4.6 | 0.1 | 2.0 | 11.0 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.2 | 0.8 | 0.2 | 1.3 | 0.3 | 0.3 | 0.8 | 0.3 | 2.4 | 0.2 | 0.1 | 0.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 30.8 | 16.6 | 15.3 | 25.0 | 12.8 | 12.8 | 22.8 | 10.2 | 14.6 | 30.8 | 11.6 | 11.7 |
| LnGrp LOS | C | B | B | C | B | B | C | B | B | C | B | B |
| Approach Vol, veh/h | | 261 | | | 239 | | | 484 | | | 33 | |
| Approach Delay, s/veh | | 17.1 | | | 19.5 | | | 15.5 | | | 18.0 | |
| Approach LOS | | B | | | B | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.3 | 10.2 | 7.5 | 14.4 | 5.1 | 13.5 | 5.1 | 16.8 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 7.5 | 28.9 | 7.5 | 28.1 | 7.5 | 28.9 | 7.5 | 28.1 |
| Max Q Clear Time (g_c+I1), s | 4.9 | 4.4 | 3.8 | 2.2 | 2.2 | 3.0 | 2.2 | 9.9 |
| Green Ext Time (p_c), s | 0.1 | 1.4 | 0.0 | 0.1 | 0.0 | 0.5 | 0.0 | 2.4 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 16.9 |
| HCM 6th LOS | B |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 300 | 120 | 100 | 20 | 335 | 205 |
| Future Volume (veh/h) | 300 | 120 | 100 | 20 | 335 | 205 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1752 | 1870 | 1870 | 1752 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 326 | 130 | 109 | 22 | 364 | 223 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 10 | 2 | 2 | 10 | 2 | 2 |
| Cap, veh/h | 416 | 166 | 148 | 933 | 475 | 422 |
| Arrive On Green | 0.35 | 0.35 | 0.08 | 0.53 | 0.27 | 0.27 |
| Sat Flow, veh/h | 1191 | 475 | 1781 | 1752 | 1781 | 1585 |
| Grp Volume(v), veh/h | 0 | 456 | 109 | 22 | 364 | 223 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1666 | 1781 | 1752 | 1781 | 1585 |
| Q Serve(g_s), s | 0.0 | 11.0 | 2.7 | 0.3 | 8.4 | 5.4 |
| Cycle Q Clear(g_c), s | 0.0 | 11.0 | 2.7 | 0.3 | 8.4 | 5.4 |
| Prop In Lane | | 0.29 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 0 | 582 | 148 | 933 | 475 | 422 |
| V/C Ratio(X) | 0.00 | 0.78 | 0.74 | 0.02 | 0.77 | 0.53 |
| Avail Cap(c_a), veh/h | 0 | 1340 | 378 | 1956 | 836 | 743 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 13.1 | 20.1 | 5.0 | 15.1 | 14.0 |
| Incr Delay (d2), s/veh | 0.0 | 2.4 | 7.0 | 0.0 | 2.6 | 1.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 3.2 | 1.2 | 0.1 | 3.1 | 1.7 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 15.4 | 27.1 | 5.0 | 17.8 | 15.0 |
| LnGrp LOS | A | B | C | A | B | B |
| Approach Vol, veh/h | 456 | | | 131 | 587 | |
| Approach Delay, s/veh | 15.4 | | | 23.4 | 16.7 | |
| Approach LOS | B | | | C | B | |

| Timer - Assigned Phs | 1 | 2 | | | | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.2 | 20.1 | | | | 28.3 | 16.4 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | | | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 9.5 | 36.0 | | | | 50.0 | 21.0 |
| Max Q Clear Time (g_c+I1), s | 4.7 | 13.0 | | | | 2.3 | 10.4 |
| Green Ext Time (p_c), s | 0.1 | 2.7 | | | | 0.1 | 1.5 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 17.0 |
| HCM 6th LOS | | B |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 100 | 40 | 30 | 40 | 50 | 140 | 30 | 760 | 100 | 70 | 470 | 110 |
| Future Volume (veh/h) | 100 | 40 | 30 | 40 | 50 | 140 | 30 | 760 | 100 | 70 | 470 | 110 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 109 | 43 | 33 | 43 | 54 | 152 | 33 | 826 | 109 | 76 | 511 | 120 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 140 | 672 | 298 | 74 | 270 | 241 | 120 | 2212 | 687 | 199 | 2330 | 723 |
| Arrive On Green | 0.08 | 0.19 | 0.19 | 0.04 | 0.15 | 0.15 | 0.03 | 0.43 | 0.43 | 0.06 | 0.46 | 0.46 |
| Sat Flow, veh/h | 1781 | 3554 | 1578 | 1781 | 1777 | 1585 | 3456 | 5106 | 1585 | 3456 | 5106 | 1585 |
| Grp Volume(v), veh/h | 109 | 43 | 33 | 43 | 54 | 152 | 33 | 826 | 109 | 76 | 511 | 120 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1578 | 1781 | 1777 | 1585 | 1728 | 1702 | 1585 | 1728 | 1702 | 1585 |
| Q Serve(g_s), s | 3.9 | 0.6 | 1.1 | 1.5 | 1.7 | 5.8 | 0.6 | 7.1 | 2.7 | 1.4 | 3.9 | 2.9 |
| Cycle Q Clear(g_c), s | 3.9 | 0.6 | 1.1 | 1.5 | 1.7 | 5.8 | 0.6 | 7.1 | 2.7 | 1.4 | 3.9 | 2.9 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 140 | 672 | 298 | 74 | 270 | 241 | 120 | 2212 | 687 | 199 | 2330 | 723 |
| V/C Ratio(X) | 0.78 | 0.06 | 0.11 | 0.58 | 0.20 | 0.63 | 0.28 | 0.37 | 0.16 | 0.38 | 0.22 | 0.17 |
| Avail Cap(c_a), veh/h | 234 | 2089 | 927 | 234 | 1045 | 932 | 401 | 2212 | 687 | 401 | 2330 | 723 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 29.2 | 21.5 | 21.7 | 30.4 | 24.0 | 25.7 | 30.4 | 12.4 | 11.1 | 29.3 | 10.6 | 10.3 |
| Incr Delay (d2), s/veh | 8.8 | 0.0 | 0.2 | 7.0 | 0.4 | 2.7 | 1.2 | 0.5 | 0.5 | 1.2 | 0.2 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.9 | 0.3 | 0.4 | 0.8 | 0.7 | 2.2 | 0.3 | 2.4 | 0.9 | 0.6 | 1.3 | 1.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 38.0 | 21.6 | 21.9 | 37.4 | 24.3 | 28.4 | 31.6 | 12.9 | 11.6 | 30.5 | 10.8 | 10.8 |
| LnGrp LOS | D | C | C | D | C | C | C | B | B | C | B | B |
| Approach Vol, veh/h | | 185 | | | 249 | | | 968 | | | 707 | |
| Approach Delay, s/veh | | 31.3 | | | 29.1 | | | 13.4 | | | 13.0 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.2 | 32.5 | 7.2 | 16.7 | 6.7 | 34.0 | 9.6 | 14.3 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 7.5 | 28.0 | 8.5 | 38.0 | 7.5 | 28.0 | 8.5 | 38.0 |
| Max Q Clear Time (g_c+I1), s | 3.4 | 9.1 | 3.5 | 3.1 | 2.6 | 5.9 | 5.9 | 7.8 |
| Green Ext Time (p_c), s | 0.1 | 5.8 | 0.0 | 0.3 | 0.0 | 3.8 | 0.1 | 1.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 16.7 |
| HCM 6th LOS | B |

**Notes**

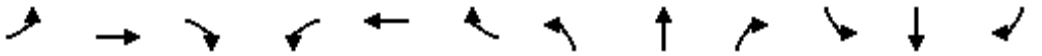
User approved pedestrian interval to be less than phase max green.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 60 | 50 | 90 | 180 | 50 | 40 | 210 | 550 | 220 | 90 | 440 | 60 |
| Future Volume (veh/h) | 60 | 50 | 90 | 180 | 50 | 40 | 210 | 550 | 220 | 90 | 440 | 60 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1752 | 1870 | 1870 | 1870 | 1870 | 1752 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 65 | 54 | 98 | 196 | 54 | 43 | 228 | 598 | 239 | 98 | 478 | 65 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 10 | 2 | 2 | 2 | 2 | 10 | 2 | 2 | 2 |
| Cap, veh/h | 169 | 219 | 184 | 276 | 287 | 241 | 320 | 1219 | 486 | 126 | 1478 | 200 |
| Arrive On Green | 0.05 | 0.12 | 0.12 | 0.09 | 0.15 | 0.15 | 0.09 | 0.49 | 0.49 | 0.07 | 0.47 | 0.47 |
| Sat Flow, veh/h | 3456 | 1870 | 1573 | 3237 | 1870 | 1576 | 3456 | 2477 | 989 | 1781 | 3144 | 425 |
| Grp Volume(v), veh/h | 65 | 54 | 98 | 196 | 54 | 43 | 228 | 429 | 408 | 98 | 269 | 274 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1573 | 1618 | 1870 | 1576 | 1728 | 1777 | 1689 | 1781 | 1777 | 1792 |
| Q Serve(g_s), s | 1.4 | 2.0 | 4.5 | 4.5 | 1.9 | 1.8 | 4.9 | 12.4 | 12.4 | 4.1 | 7.2 | 7.3 |
| Cycle Q Clear(g_c), s | 1.4 | 2.0 | 4.5 | 4.5 | 1.9 | 1.8 | 4.9 | 12.4 | 12.4 | 4.1 | 7.2 | 7.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.59 | 1.00 | | 0.24 |
| Lane Grp Cap(c), veh/h | 169 | 219 | 184 | 276 | 287 | 241 | 320 | 874 | 831 | 126 | 835 | 843 |
| V/C Ratio(X) | 0.38 | 0.25 | 0.53 | 0.71 | 0.19 | 0.18 | 0.71 | 0.49 | 0.49 | 0.78 | 0.32 | 0.32 |
| Avail Cap(c_a), veh/h | 338 | 904 | 760 | 359 | 928 | 782 | 474 | 874 | 831 | 221 | 835 | 843 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 35.3 | 30.8 | 31.8 | 34.1 | 28.3 | 28.2 | 33.7 | 13.0 | 13.0 | 35.0 | 12.7 | 12.7 |
| Incr Delay (d2), s/veh | 1.4 | 0.6 | 2.4 | 4.4 | 0.3 | 0.3 | 2.9 | 2.0 | 2.1 | 9.7 | 1.0 | 1.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.6 | 0.9 | 1.8 | 1.9 | 0.9 | 0.7 | 2.1 | 4.8 | 4.6 | 2.1 | 2.8 | 2.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 36.7 | 31.3 | 34.2 | 38.5 | 28.6 | 28.6 | 36.7 | 15.0 | 15.1 | 44.7 | 13.7 | 13.7 |
| LnGrp LOS | D | C | C | D | C | C | D | B | B | D | B | B |
| Approach Vol, veh/h | | 217 | | | 293 | | | 1065 | | | 641 | |
| Approach Delay, s/veh | | 34.3 | | | 35.2 | | | 19.7 | | | 18.4 | |
| Approach LOS | | C | | | D | | | B | | | B | |

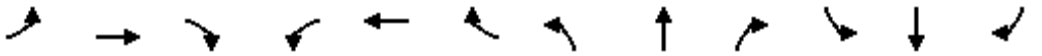
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 9.9 | 42.2 | 11.0 | 13.4 | 11.6 | 40.5 | 8.2 | 16.2 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 9.5 | 37.0 | 8.5 | 37.0 | 10.5 | 36.0 | 7.5 | 38.0 |
| Max Q Clear Time (g_c+I1), s | 6.1 | 14.4 | 6.5 | 6.5 | 6.9 | 9.3 | 3.4 | 3.9 |
| Green Ext Time (p_c), s | 0.1 | 5.5 | 0.1 | 0.6 | 0.2 | 3.3 | 0.0 | 0.4 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 22.8 |
| HCM 6th LOS | C |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 150 | 0 | 190 | 550 | 750 | 0 | 0 | 370 | 380 |
| Future Volume (vph) | 0 | 0 | 0 | 150 | 0 | 190 | 550 | 750 | 0 | 0 | 370 | 380 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Lane Util. Factor | | | | 0.95 | 0.91 | 0.95 | 1.00 | 0.95 | | | 0.95 | 1.00 |
| Frt | | | | 1.00 | 0.89 | 0.85 | 1.00 | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | 0.95 | 0.99 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | 1681 | 1410 | 1395 | 1770 | 3539 | | | 3471 | 1553 |
| Flt Permitted | | | | 0.95 | 0.99 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | 1681 | 1410 | 1395 | 1770 | 3539 | | | 3471 | 1553 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 0 | 163 | 0 | 207 | 598 | 815 | 0 | 0 | 402 | 413 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 76 | 101 | 0 | 0 | 0 | 0 | 0 | 289 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 129 | 47 | 17 | 598 | 815 | 0 | 0 | 402 | 124 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 10% | 2% | 2% | 2% | 2% | 4% | 4% |
| Turn Type | | | | Perm | NA | Perm | Prot | NA | | | NA | Perm |
| Protected Phases | | | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | | | | 8 | | 8 | | | | | | 6 |
| Actuated Green, G (s) | | | | 11.6 | 11.6 | 11.6 | 30.9 | 59.4 | | | 24.0 | 24.0 |
| Effective Green, g (s) | | | | 11.6 | 11.6 | 11.6 | 30.9 | 59.4 | | | 24.0 | 24.0 |
| Actuated g/C Ratio | | | | 0.14 | 0.14 | 0.14 | 0.39 | 0.74 | | | 0.30 | 0.30 |
| Clearance Time (s) | | | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Vehicle Extension (s) | | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | | | 243 | 204 | 202 | 683 | 2627 | | | 1041 | 465 |
| v/s Ratio Prot | | | | | | | c0.34 | 0.23 | | | c0.12 | |
| v/s Ratio Perm | | | | c0.08 | 0.03 | 0.01 | | | | | | 0.08 |
| v/c Ratio | | | | 0.53 | 0.23 | 0.08 | 0.88 | 0.31 | | | 0.39 | 0.27 |
| Uniform Delay, d1 | | | | 31.7 | 30.2 | 29.6 | 22.8 | 3.4 | | | 22.2 | 21.3 |
| Progression Factor | | | | 1.00 | 1.00 | 1.00 | 0.97 | 0.12 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | | | 2.2 | 0.6 | 0.2 | 10.3 | 0.3 | | | 1.1 | 1.4 |
| Delay (s) | | | | 33.9 | 30.8 | 29.8 | 32.5 | 0.7 | | | 23.3 | 22.7 |
| Level of Service | | | | C | C | C | C | A | | | C | C |
| Approach Delay (s) | | 0.0 | | | 31.6 | | | 14.1 | | | 23.0 | |
| Approach LOS | | A | | | C | | | B | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 19.4 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.64 | | |
| Actuated Cycle Length (s) | 80.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 71.3% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 470 | 0 | 260 | 0 | 0 | 0 | 0 | 830 | 170 | 130 | 390 | 0 |
| Future Volume (vph) | 470 | 0 | 260 | 0 | 0 | 0 | 0 | 830 | 170 | 130 | 390 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | | | | | 4.5 | 4.5 | 4.5 | 4.5 | |
| Lane Util. Factor | 0.97 | 0.95 | 0.95 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | |
| Frt | 1.00 | 0.85 | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (prot) | 3335 | 1504 | 1504 | | | | | 3539 | 1583 | 1719 | 3539 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (perm) | 3335 | 1504 | 1504 | | | | | 3539 | 1583 | 1719 | 3539 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 511 | 0 | 283 | 0 | 0 | 0 | 0 | 902 | 185 | 141 | 424 | 0 |
| RTOR Reduction (vph) | 0 | 112 | 111 | 0 | 0 | 0 | 0 | 0 | 93 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 511 | 30 | 30 | 0 | 0 | 0 | 0 | 902 | 92 | 141 | 424 | 0 |
| Heavy Vehicles (%) | 5% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 5% | 2% | 2% |
| Turn Type | Perm | NA | Perm | | | | | NA | Perm | Prot | NA | |
| Protected Phases | | 4 | | | | | | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | | | | | | 2 | | | |
| Actuated Green, G (s) | 16.9 | 16.9 | 16.9 | | | | | 39.8 | 39.8 | 9.8 | 54.1 | |
| Effective Green, g (s) | 16.9 | 16.9 | 16.9 | | | | | 39.8 | 39.8 | 9.8 | 54.1 | |
| Actuated g/C Ratio | 0.21 | 0.21 | 0.21 | | | | | 0.50 | 0.50 | 0.12 | 0.68 | |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | | | | | 4.5 | 4.5 | 4.5 | 4.5 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 704 | 317 | 317 | | | | | 1760 | 787 | 210 | 2393 | |
| v/s Ratio Prot | | 0.02 | | | | | | c0.25 | | c0.08 | 0.12 | |
| v/s Ratio Perm | c0.15 | | 0.02 | | | | | | 0.06 | | | |
| v/c Ratio | 0.73 | 0.09 | 0.09 | | | | | 0.51 | 0.12 | 0.67 | 0.18 | |
| Uniform Delay, d1 | 29.4 | 25.4 | 25.4 | | | | | 13.6 | 10.7 | 33.6 | 4.8 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | | | | | 1.00 | 1.00 | 1.18 | 1.03 | |
| Incremental Delay, d2 | 3.7 | 0.1 | 0.1 | | | | | 1.1 | 0.3 | 7.7 | 0.2 | |
| Delay (s) | 33.1 | 25.5 | 25.5 | | | | | 14.6 | 11.0 | 47.4 | 5.0 | |
| Level of Service | C | C | C | | | | | B | B | D | A | |
| Approach Delay (s) | | 30.4 | | | 0.0 | | | 14.0 | | | 15.6 | |
| Approach LOS | | C | | | A | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 19.7 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.59 | | |
| Actuated Cycle Length (s) | 80.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 71.3% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.7 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↑ | ↑ | | ↰ | ↱ |
| Traffic Vol, veh/h | 0 | 505 | 5 | 0 | 5 | 115 |
| Future Vol, veh/h | 0 | 505 | 5 | 0 | 5 | 115 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 25 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 549 | 5 | 0 | 5 | 125 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | 554 | 5 |
| Stage 1 | - | - | - | - | 5 | - |
| Stage 2 | - | - | - | - | 549 | - |
| Critical Hdwy | - | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | 0 | 493 | 1078 |
| Stage 1 | 0 | - | - | 0 | 1018 | - |
| Stage 2 | 0 | - | - | 0 | 579 | - |
| Platoon blocked, % | | - | - | | | |
| Mov Cap-1 Maneuver | - | - | - | - | 493 | 1078 |
| Mov Cap-2 Maneuver | - | - | - | - | 493 | - |
| Stage 1 | - | - | - | - | 1018 | - |
| Stage 2 | - | - | - | - | 579 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 9 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBT | WBT | SBLn1 | SBLn2 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | 493 | 1078 |
| HCM Lane V/C Ratio | - | - | 0.011 | 0.116 |
| HCM Control Delay (s) | - | - | 12.4 | 8.8 |
| HCM Lane LOS | - | - | B | A |
| HCM 95th %tile Q(veh) | - | - | 0 | 0.4 |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 310 | 0 | 60 | 130 | 100 | 0 | 0 | 170 | 50 |
| Future Volume (veh/h) | 0 | 0 | 0 | 310 | 0 | 60 | 130 | 100 | 0 | 0 | 170 | 50 |
| Initial Q (Qb), veh | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | | | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | | | | 1870 | 0 | 1870 | 1870 | 1870 | 0 | 0 | 1870 | 1870 |
| Adj Flow Rate, veh/h | | | | 337 | 0 | 65 | 141 | 109 | 0 | 0 | 185 | 54 |
| Peak Hour Factor | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | | | | 2 | 0 | 2 | 2 | 2 | 0 | 0 | 2 | 2 |
| Cap, veh/h | | | | 470 | 0 | 418 | 206 | 1543 | 0 | 0 | 458 | 130 |
| Arrive On Green | | | | 0.26 | 0.00 | 0.26 | 0.12 | 0.43 | 0.00 | 0.00 | 0.17 | 0.17 |
| Sat Flow, veh/h | | | | 1781 | 0 | 1585 | 1781 | 3647 | 0 | 0 | 2826 | 775 |
| Grp Volume(v), veh/h | | | | 337 | 0 | 65 | 141 | 109 | 0 | 0 | 118 | 121 |
| Grp Sat Flow(s),veh/h/ln | | | | 1781 | 0 | 1585 | 1781 | 1777 | 0 | 0 | 1777 | 1731 |
| Q Serve(g_s), s | | | | 5.1 | 0.0 | 0.9 | 2.3 | 0.5 | 0.0 | 0.0 | 1.8 | 1.9 |
| Cycle Q Clear(g_c), s | | | | 5.1 | 0.0 | 0.9 | 2.3 | 0.5 | 0.0 | 0.0 | 1.8 | 1.9 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 0.45 |
| Lane Grp Cap(c), veh/h | | | | 470 | 0 | 418 | 206 | 1543 | 0 | 0 | 298 | 290 |
| V/C Ratio(X) | | | | 0.72 | 0.00 | 0.16 | 0.69 | 0.07 | 0.00 | 0.00 | 0.40 | 0.42 |
| Avail Cap(c_a), veh/h | | | | 1225 | 0 | 1090 | 448 | 3635 | 0 | 0 | 1103 | 1074 |
| HCM Platoon Ratio | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | | | | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | | | | 10.0 | 0.0 | 8.4 | 12.7 | 4.9 | 0.0 | 0.0 | 11.1 | 11.1 |
| Incr Delay (d2), s/veh | | | | 2.1 | 0.0 | 0.2 | 4.0 | 0.0 | 0.0 | 0.0 | 0.9 | 0.9 |
| Initial Q Delay(d3),s/veh | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | | | | 1.5 | 0.0 | 0.2 | 0.8 | 0.1 | 0.0 | 0.0 | 0.5 | 0.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 12.0 | 0.0 | 8.6 | 16.7 | 4.9 | 0.0 | 0.0 | 11.9 | 12.0 |
| LnGrp LOS | | | | B | A | A | B | A | A | A | B | B |
| Approach Vol, veh/h | | | | | 402 | | | 250 | | | 239 | |
| Approach Delay, s/veh | | | | | 11.5 | | | 11.6 | | | 12.0 | |
| Approach LOS | | | | | B | | | B | | | B | |

| Timer - Assigned Phs | 2 | | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 17.4 | | 7.9 | 9.5 | | 12.4 |
| Change Period (Y+Rc), s | 4.5 | | 4.5 | 4.5 | | 4.5 |
| Max Green Setting (Gmax), s | 30.5 | | 7.5 | 18.5 | | 20.5 |
| Max Q Clear Time (g_c+I1), s | 2.5 | | 4.3 | 3.9 | | 7.1 |
| Green Ext Time (p_c), s | 0.6 | | 0.1 | 1.0 | | 1.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 11.6 |
| HCM 6th LOS | | B |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 4.6 |
| Intersection LOS | A |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Entry Lanes | 1 | 1 | 1 | 1 |
| Conflicting Circle Lanes | 1 | 1 | 1 | 1 |
| Adj Approach Flow, veh/h | 174 | 174 | 185 | 185 |
| Demand Flow Rate, veh/h | 177 | 177 | 189 | 189 |
| Vehicles Circulating, veh/h | 145 | 244 | 189 | 145 |
| Vehicles Exiting, veh/h | 189 | 134 | 133 | 276 |
| Ped Vol Crossing Leg, #/h | 0 | 0 | 0 | 0 |
| Ped Cap Adj | 1.000 | 1.000 | 1.000 | 1.000 |
| Approach Delay, s/veh | 4.4 | 4.9 | 4.7 | 4.5 |
| Approach LOS | A | A | A | A |

| Lane | Left | Left | Left | Left |
|---|---|---|---|---|
| Designated Moves | LTR | LTR | LTR | LTR |
| Assumed Moves | LTR | LTR | LTR | LTR |
| RT Channelized | | | | |
| Lane Util | 1.000 | 1.000 | 1.000 | 1.000 |
| Follow-Up Headway, s | 2.609 | 2.609 | 2.609 | 2.609 |
| Critical Headway, s | 4.976 | 4.976 | 4.976 | 4.976 |
| Entry Flow, veh/h | 177 | 177 | 189 | 189 |
| Cap Entry Lane, veh/h | 1190 | 1076 | 1138 | 1190 |
| Entry HV Adj Factor | 0.984 | 0.983 | 0.980 | 0.979 |
| Flow Entry, veh/h | 174 | 174 | 185 | 185 |
| Cap Entry, veh/h | 1172 | 1058 | 1115 | 1165 |
| V/C Ratio | 0.149 | 0.165 | 0.166 | 0.159 |
| Control Delay, s/veh | 4.4 | 4.9 | 4.7 | 4.5 |
| LOS | A | A | A | A |
| 95th %tile Queue, veh | 1 | 1 | 1 | 1 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.9 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 120 | 160 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 120 | 160 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 130 | 174 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay | 7.8 | 8 | 0 |
| HCM LOS | A | A | - |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 0% | 0% | 0% |
| Vol Thru, % | 100% | 100% | 100% |
| Vol Right, % | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 120 | 160 | 0 |
| LT Vol | 0 | 0 | 0 |
| Through Vol | 120 | 160 | 0 |
| RT Vol | 0 | 0 | 0 |
| Lane Flow Rate | 130 | 174 | 0 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.147 | 0.195 | 0 |
| Departure Headway (Hd) | 4.063 | 4.031 | 4.583 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 880 | 890 | 0 |
| Service Time | 2.096 | 2.056 | 2.583 |
| HCM Lane V/C Ratio | 0.148 | 0.196 | 0 |
| HCM Control Delay | 7.8 | 8 | 7.6 |
| HCM Lane LOS | A | A | N |
| HCM 95th-tile Q | 0.5 | 0.7 | 0 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.9 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 120 | 160 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 120 | 160 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 130 | 174 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay | 7.8 | 8 | 0 |
| HCM LOS | A | A | - |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 0% | 0% | 0% |
| Vol Thru, % | 100% | 100% | 100% |
| Vol Right, % | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 120 | 160 | 0 |
| LT Vol | 0 | 0 | 0 |
| Through Vol | 120 | 160 | 0 |
| RT Vol | 0 | 0 | 0 |
| Lane Flow Rate | 130 | 174 | 0 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.147 | 0.195 | 0 |
| Departure Headway (Hd) | 4.063 | 4.031 | 4.583 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 880 | 890 | 0 |
| Service Time | 2.096 | 2.056 | 2.583 |
| HCM Lane V/C Ratio | 0.148 | 0.196 | 0 |
| HCM Control Delay | 7.8 | 8 | 7.6 |
| HCM Lane LOS | A | A | N |
| HCM 95th-tile Q | 0.5 | 0.7 | 0 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 20 | 100 | 140 | 20 | 10 | 20 |
| Future Vol, veh/h | 20 | 100 | 140 | 20 | 10 | 20 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 22 | 109 | 152 | 22 | 11 | 22 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 1 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 2 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 2 | 1 |
| HCM Control Delay | 8 | 8 | 7.7 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|
| Vol Left, % | 17% | 0% | 100% | 0% |
| Vol Thru, % | 83% | 88% | 0% | 0% |
| Vol Right, % | 0% | 12% | 0% | 100% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 120 | 160 | 10 | 20 |
| LT Vol | 20 | 0 | 10 | 0 |
| Through Vol | 100 | 140 | 0 | 0 |
| RT Vol | 0 | 20 | 0 | 20 |
| Lane Flow Rate | 130 | 174 | 11 | 22 |
| Geometry Grp | 2 | 2 | 7 | 7 |
| Degree of Util (X) | 0.151 | 0.194 | 0.017 | 0.027 |
| Departure Headway (Hd) | 4.155 | 4.013 | 5.694 | 4.487 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 856 | 887 | 632 | 803 |
| Service Time | 2.218 | 2.072 | 3.394 | 2.187 |
| HCM Lane V/C Ratio | 0.152 | 0.196 | 0.017 | 0.027 |
| HCM Control Delay | 8 | 8 | 8.5 | 7.3 |
| HCM Lane LOS | A | A | A | A |
| HCM 95th-tile Q | 0.5 | 0.7 | 0.1 | 0.1 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.9 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 110 | 160 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 110 | 160 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 120 | 174 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay | 7.7 | 8 | 0 |
| HCM LOS | A | A | - |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 0% | 0% | 0% |
| Vol Thru, % | 100% | 100% | 100% |
| Vol Right, % | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 110 | 160 | 0 |
| LT Vol | 0 | 0 | 0 |
| Through Vol | 110 | 160 | 0 |
| RT Vol | 0 | 0 | 0 |
| Lane Flow Rate | 120 | 174 | 0 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.135 | 0.194 | 0 |
| Departure Headway (Hd) | 4.063 | 4.022 | 4.559 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 881 | 892 | 0 |
| Service Time | 2.096 | 2.046 | 2.559 |
| HCM Lane V/C Ratio | 0.136 | 0.195 | 0 |
| HCM Control Delay | 7.7 | 8 | 7.6 |
| HCM Lane LOS | A | A | N |
| HCM 95th-tile Q | 0.5 | 0.7 | 0 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.1 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 15 | 85 | 10 | 10 | 120 | 20 | 10 | 10 | 10 | 35 | 10 | 30 |
| Future Vol, veh/h | 15 | 85 | 10 | 10 | 120 | 20 | 10 | 10 | 10 | 35 | 10 | 30 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 92 | 11 | 11 | 130 | 22 | 11 | 11 | 11 | 38 | 11 | 33 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 8.1 | 8.3 | 7.7 | 8 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 33% | 14% | 7% | 47% |
| Vol Thru, % | 33% | 77% | 80% | 13% |
| Vol Right, % | 33% | 9% | 13% | 40% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 30 | 110 | 150 | 75 |
| LT Vol | 10 | 15 | 10 | 35 |
| Through Vol | 10 | 85 | 120 | 10 |
| RT Vol | 10 | 10 | 20 | 30 |
| Lane Flow Rate | 33 | 120 | 163 | 82 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.041 | 0.144 | 0.193 | 0.101 |
| Departure Headway (Hd) | 4.524 | 4.339 | 4.272 | 4.452 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 793 | 829 | 845 | 807 |
| Service Time | 2.543 | 2.356 | 2.272 | 2.469 |
| HCM Lane V/C Ratio | 0.042 | 0.145 | 0.193 | 0.102 |
| HCM Control Delay | 7.7 | 8.1 | 8.3 | 8 |
| HCM Lane LOS | A | A | A | A |
| HCM 95th-tile Q | 0.1 | 0.5 | 0.7 | 0.3 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 45 | 75 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 45 | 75 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 49 | 82 | 0 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 131 | 82 | 82 | 0 | - | 0 |
| Stage 1 | 82 | - | - | - | - | - |
| Stage 2 | 49 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 863 | 978 | 1515 | - | - | - |
| Stage 1 | 941 | - | - | - | - | - |
| Stage 2 | 973 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 863 | 978 | 1515 | - | - | - |
| Mov Cap-2 Maneuver | 863 | - | - | - | - | - |
| Stage 1 | 941 | - | - | - | - | - |
| Stage 2 | 973 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1515 | - | - | - | - |
| HCM Lane V/C Ratio | - | - | - | - | - |
| HCM Control Delay (s) | 0 | - | 0 | - | - |
| HCM Lane LOS | A | - | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.2 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 0 | 30 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 0 | 30 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 0 | 0 | 33 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 0 | 0 | 7.2 | 7.1 |
| HCM LOS | - | - | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 0% | 0% | 0% | 0% |
| Vol Thru, % | 100% | 100% | 100% | 100% |
| Vol Right, % | 0% | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 40 | 0 | 0 | 30 |
| LT Vol | 0 | 0 | 0 | 0 |
| Through Vol | 40 | 0 | 0 | 30 |
| RT Vol | 0 | 0 | 0 | 0 |
| Lane Flow Rate | 43 | 0 | 0 | 33 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.048 | 0 | 0 | 0.036 |
| Departure Headway (Hd) | 3.958 | 4.066 | 4.066 | 3.966 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 909 | 0 | 0 | 907 |
| Service Time | 1.964 | 2.097 | 2.097 | 1.974 |
| HCM Lane V/C Ratio | 0.047 | 0 | 0 | 0.036 |
| HCM Control Delay | 7.2 | 7.1 | 7.1 | 7.1 |
| HCM Lane LOS | A | N | N | A |
| HCM 95th-tile Q | 0.2 | 0 | 0 | 0.1 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.2 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 0 | 30 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 0 | 30 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 0 | 0 | 33 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 0 | 0 | 7.2 | 7.1 |
| HCM LOS | - | - | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 0% | 0% | 0% | 0% |
| Vol Thru, % | 100% | 100% | 100% | 100% |
| Vol Right, % | 0% | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 40 | 0 | 0 | 30 |
| LT Vol | 0 | 0 | 0 | 0 |
| Through Vol | 40 | 0 | 0 | 30 |
| RT Vol | 0 | 0 | 0 | 0 |
| Lane Flow Rate | 43 | 0 | 0 | 33 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.048 | 0 | 0 | 0.036 |
| Departure Headway (Hd) | 3.958 | 4.066 | 4.066 | 3.966 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 909 | 0 | 0 | 907 |
| Service Time | 1.964 | 2.097 | 2.097 | 1.974 |
| HCM Lane V/C Ratio | 0.047 | 0 | 0 | 0.036 |
| HCM Control Delay | 7.2 | 7.1 | 7.1 | 7.1 |
| HCM Lane LOS | A | N | N | A |
| HCM 95th-tile Q | 0.2 | 0 | 0 | 0.1 |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 90 | 15 | 25 | 10 | 25 | 10 | 100 | 165 | 10 | 25 | 140 | 25 |
| Future Volume (veh/h) | 90 | 15 | 25 | 10 | 25 | 10 | 100 | 165 | 10 | 25 | 140 | 25 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 98 | 16 | 27 | 11 | 27 | 11 | 109 | 179 | 11 | 27 | 152 | 27 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 203 | 348 | 295 | 26 | 162 | 137 | 171 | 410 | 348 | 59 | 293 | 248 |
| Arrive On Green | 0.11 | 0.19 | 0.19 | 0.01 | 0.09 | 0.09 | 0.10 | 0.22 | 0.22 | 0.03 | 0.16 | 0.16 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Grp Volume(v), veh/h | 98 | 16 | 27 | 11 | 27 | 11 | 109 | 179 | 11 | 27 | 152 | 27 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Q Serve(g_s), s | 1.7 | 0.2 | 0.5 | 0.2 | 0.4 | 0.2 | 1.9 | 2.7 | 0.2 | 0.5 | 2.5 | 0.5 |
| Cycle Q Clear(g_c), s | 1.7 | 0.2 | 0.5 | 0.2 | 0.4 | 0.2 | 1.9 | 2.7 | 0.2 | 0.5 | 2.5 | 0.5 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 203 | 348 | 295 | 26 | 162 | 137 | 171 | 410 | 348 | 59 | 293 | 248 |
| V/C Ratio(X) | 0.48 | 0.05 | 0.09 | 0.42 | 0.17 | 0.08 | 0.64 | 0.44 | 0.03 | 0.46 | 0.52 | 0.11 |
| Avail Cap(c_a), veh/h | 568 | 1364 | 1156 | 406 | 1193 | 1011 | 406 | 1307 | 1108 | 406 | 1307 | 1108 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 13.7 | 11.0 | 11.1 | 16.1 | 13.9 | 13.8 | 14.3 | 11.1 | 10.1 | 15.6 | 12.7 | 11.9 |
| Incr Delay (d2), s/veh | 1.8 | 0.1 | 0.1 | 10.7 | 0.5 | 0.2 | 3.9 | 0.7 | 0.0 | 5.4 | 1.4 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.6 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.7 | 0.8 | 0.1 | 0.2 | 0.8 | 0.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 15.4 | 11.1 | 11.2 | 26.7 | 14.4 | 14.1 | 18.3 | 11.8 | 10.1 | 21.0 | 14.2 | 12.1 |
| LnGrp LOS | B | B | B | C | B | B | B | B | B | C | B | B |
| Approach Vol, veh/h | | 141 | | | 49 | | | 299 | | | 206 | |
| Approach Delay, s/veh | | 14.1 | | | 17.1 | | | 14.1 | | | 14.8 | |
| Approach LOS | | B | | | B | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.6 | 11.7 | 5.0 | 10.6 | 7.7 | 9.7 | 8.3 | 7.3 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 7.5 | 23.0 | 7.5 | 24.0 | 7.5 | 23.0 | 10.5 | 21.0 |
| Max Q Clear Time (g_c+I1), s | 2.5 | 4.7 | 2.2 | 2.5 | 3.9 | 4.5 | 3.7 | 2.4 |
| Green Ext Time (p_c), s | 0.0 | 0.8 | 0.0 | 0.1 | 0.1 | 0.7 | 0.1 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 14.5 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 8.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 15 | 385 | 35 | 20 | 55 | 80 |
| Future Vol, veh/h | 15 | 385 | 35 | 20 | 55 | 80 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 400 | - | - | 300 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 418 | 38 | 22 | 60 | 87 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 256 | 49 | 0 | 0 | 60 | 0 |
| Stage 1 | 49 | - | - | - | - | - |
| Stage 2 | 207 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 733 | 1020 | - | - | 1544 | - |
| Stage 1 | 973 | - | - | - | - | - |
| Stage 2 | 828 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 704 | 1020 | - | - | 1544 | - |
| Mov Cap-2 Maneuver | 704 | - | - | - | - | - |
| Stage 1 | 973 | - | - | - | - | - |
| Stage 2 | 796 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 11 | 0 | 3 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 704 | 1020 | 1544 | - |
| HCM Lane V/C Ratio | - | - | 0.023 | 0.41 | 0.039 | - |
| HCM Control Delay (s) | - | - | 10.2 | 11 | 7.4 | - |
| HCM Lane LOS | - | - | B | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 0.1 | 2 | 0.1 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 30 | 5 | 5 | 415 | 130 | 20 |
| Future Vol, veh/h | 30 | 5 | 5 | 415 | 130 | 20 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 33 | 5 | 5 | 451 | 141 | 22 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 613 | 152 | 163 | 0 | - | 0 |
| Stage 1 | 152 | - | - | - | - | - |
| Stage 2 | 461 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 456 | 894 | 1416 | - | - | - |
| Stage 1 | 876 | - | - | - | - | - |
| Stage 2 | 635 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 454 | 894 | 1416 | - | - | - |
| Mov Cap-2 Maneuver | 454 | - | - | - | - | - |
| Stage 1 | 872 | - | - | - | - | - |
| Stage 2 | 635 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 13 | 0.1 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1416 | - | 488 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | 0.078 | - | - |
| HCM Control Delay (s) | 7.6 | 0 | 13 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.3 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.4 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 15 | 5 | 5 | 40 | 70 | 25 |
| Future Vol, veh/h | 15 | 5 | 5 | 40 | 70 | 25 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 100 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 5 | 5 | 43 | 76 | 27 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 143 | 90 | 103 | 0 | - | 0 |
| Stage 1 | 90 | - | - | - | - | - |
| Stage 2 | 53 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 850 | 968 | 1489 | - | - | - |
| Stage 1 | 934 | - | - | - | - | - |
| Stage 2 | 970 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 847 | 968 | 1489 | - | - | - |
| Mov Cap-2 Maneuver | 847 | - | - | - | - | - |
| Stage 1 | 931 | - | - | - | - | - |
| Stage 2 | 970 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.2 | 0.8 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1489 | - | 847 | 968 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | 0.019 | 0.006 | - | - |
| HCM Control Delay (s) | 7.4 | 0 | 9.3 | 8.7 | - | - |
| HCM Lane LOS | A | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | 0 | - | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.8 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 30 | 5 | 5 | 5 | 5 | 40 | 5 | 90 | 5 | 20 | 25 | 15 |
| Future Vol, veh/h | 30 | 5 | 5 | 5 | 5 | 40 | 5 | 90 | 5 | 20 | 25 | 15 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 33 | 5 | 5 | 5 | 5 | 43 | 5 | 98 | 5 | 22 | 27 | 16 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 1 | 1 |
| HCM Control Delay | 7.7 | 7.2 | 8.2 | 7.7 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 75% | 10% | 100% | 0% |
| Vol Thru, % | 0% | 95% | 12% | 10% | 0% | 62% |
| Vol Right, % | 0% | 5% | 12% | 80% | 0% | 38% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 5 | 95 | 40 | 50 | 20 | 40 |
| LT Vol | 5 | 0 | 30 | 5 | 20 | 0 |
| Through Vol | 0 | 90 | 5 | 5 | 0 | 25 |
| RT Vol | 0 | 5 | 5 | 40 | 0 | 15 |
| Lane Flow Rate | 5 | 103 | 43 | 54 | 22 | 43 |
| Geometry Grp | 7 | 7 | 2 | 2 | 7 | 7 |
| Degree of Util (X) | 0.008 | 0.135 | 0.054 | 0.06 | 0.032 | 0.054 |
| Departure Headway (Hd) | 5.241 | 4.703 | 4.488 | 3.947 | 5.264 | 4.5 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 678 | 756 | 802 | 913 | 674 | 787 |
| Service Time | 3.013 | 2.474 | 2.491 | 1.949 | 3.047 | 2.282 |
| HCM Lane V/C Ratio | 0.007 | 0.136 | 0.054 | 0.059 | 0.033 | 0.055 |
| HCM Control Delay | 8.1 | 8.2 | 7.7 | 7.2 | 8.2 | 7.5 |
| HCM Lane LOS | A | A | A | A | A | A |
| HCM 95th-tile Q | 0 | 0.5 | 0.2 | 0.2 | 0.1 | 0.2 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.5 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 25 | 5 | 10 | 10 | 5 | 35 | 10 | 40 | 10 | 15 | 10 | 10 |
| Future Vol, veh/h | 25 | 5 | 10 | 10 | 5 | 35 | 10 | 40 | 10 | 15 | 10 | 10 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 27 | 5 | 11 | 11 | 5 | 38 | 11 | 43 | 11 | 16 | 11 | 11 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 1 | 1 |
| HCM Control Delay | 7.4 | 7.1 | 7.8 | 7.6 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 62% | 20% | 100% | 0% |
| Vol Thru, % | 0% | 80% | 12% | 10% | 0% | 50% |
| Vol Right, % | 0% | 20% | 25% | 70% | 0% | 50% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 10 | 50 | 40 | 50 | 15 | 20 |
| LT Vol | 10 | 0 | 25 | 10 | 15 | 0 |
| Through Vol | 0 | 40 | 5 | 5 | 0 | 10 |
| RT Vol | 0 | 10 | 10 | 35 | 0 | 10 |
| Lane Flow Rate | 11 | 54 | 43 | 54 | 16 | 22 |
| Geometry Grp | 7 | 7 | 2 | 2 | 7 | 7 |
| Degree of Util (X) | 0.016 | 0.069 | 0.05 | 0.057 | 0.024 | 0.027 |
| Departure Headway (Hd) | 5.226 | 4.585 | 4.122 | 3.759 | 5.241 | 4.389 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 682 | 778 | 855 | 935 | 680 | 810 |
| Service Time | 2.977 | 2.335 | 2.214 | 1.852 | 2.998 | 2.145 |
| HCM Lane V/C Ratio | 0.016 | 0.069 | 0.05 | 0.058 | 0.024 | 0.027 |
| HCM Control Delay | 8.1 | 7.7 | 7.4 | 7.1 | 8.1 | 7.3 |
| HCM Lane LOS | A | A | A | A | A | A |
| HCM 95th-tile Q | 0 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.6 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 20 | 5 | 10 | 10 | 5 | 20 | 10 | 20 | 10 | 10 | 10 | 10 |
| Future Vol, veh/h | 20 | 5 | 10 | 10 | 5 | 20 | 10 | 20 | 10 | 10 | 10 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 75 | - | - | 75 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 22 | 5 | 11 | 11 | 5 | 22 | 11 | 22 | 11 | 11 | 11 | 11 |

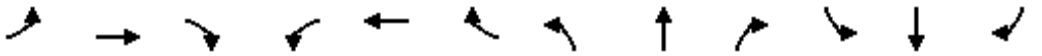
| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 102 | 94 | 17 | 97 | 94 | 28 | 22 | 0 | 0 | 33 | 0 | 0 |
| Stage 1 | 39 | 39 | - | 50 | 50 | - | - | - | - | - | - | - |
| Stage 2 | 63 | 55 | - | 47 | 44 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 879 | 796 | 1062 | 885 | 796 | 1047 | 1593 | - | - | 1579 | - | - |
| Stage 1 | 976 | 862 | - | 963 | 853 | - | - | - | - | - | - | - |
| Stage 2 | 948 | 849 | - | 967 | 858 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 847 | 785 | 1062 | 862 | 785 | 1047 | 1593 | - | - | 1579 | - | - |
| Mov Cap-2 Maneuver | 847 | 785 | - | 862 | 785 | - | - | - | - | - | - | - |
| Stage 1 | 969 | 856 | - | 956 | 847 | - | - | - | - | - | - | - |
| Stage 2 | 916 | 843 | - | 944 | 852 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 9.2 | 9 | 1.8 | 2.4 |
| HCM LOS | A | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1593 | - | - | 888 | 944 | 1579 | - | - |
| HCM Lane V/C Ratio | 0.007 | - | - | 0.043 | 0.04 | 0.007 | - | - |
| HCM Control Delay (s) | 7.3 | - | - | 9.2 | 9 | 7.3 | - | - |
| HCM Lane LOS | A | - | - | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 0.1 | 0 | - | - |

# Appendix F:
# Cumulative PM Peak Hour Intersection Level of Service Analysis

FEHR PEERS



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 180 | 270 | 170 | 20 | 120 | 190 | 70 | 300 | 30 | 240 | 510 | 230 |
| Future Volume (veh/h) | 180 | 270 | 170 | 20 | 120 | 190 | 70 | 300 | 30 | 240 | 510 | 230 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 196 | 293 | 185 | 22 | 130 | 207 | 76 | 326 | 33 | 261 | 554 | 250 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 250 | 556 | 472 | 46 | 343 | 291 | 111 | 538 | 54 | 328 | 1019 | 455 |
| Arrive On Green | 0.14 | 0.30 | 0.30 | 0.03 | 0.18 | 0.18 | 0.06 | 0.16 | 0.16 | 0.18 | 0.29 | 0.29 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 3260 | 328 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 196 | 293 | 185 | 22 | 130 | 207 | 76 | 177 | 182 | 261 | 554 | 250 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1777 | 1811 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 5.8 | 7.2 | 5.1 | 0.7 | 3.4 | 6.7 | 2.3 | 5.1 | 5.1 | 7.7 | 7.2 | 7.3 |
| Cycle Q Clear(g_c), s | 5.8 | 7.2 | 5.1 | 0.7 | 3.4 | 6.7 | 2.3 | 5.1 | 5.1 | 7.7 | 7.2 | 7.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.18 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 250 | 556 | 472 | 46 | 343 | 291 | 111 | 293 | 299 | 328 | 1019 | 455 |
| V/C Ratio(X) | 0.79 | 0.53 | 0.39 | 0.48 | 0.38 | 0.71 | 0.68 | 0.60 | 0.61 | 0.79 | 0.54 | 0.55 |
| Avail Cap(c_a), veh/h | 453 | 1224 | 1037 | 291 | 1054 | 893 | 405 | 905 | 922 | 777 | 2552 | 1138 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.8 | 16.1 | 15.4 | 26.4 | 19.7 | 21.1 | 25.3 | 21.3 | 21.3 | 21.4 | 16.6 | 16.6 |
| Incr Delay (d2), s/veh | 5.4 | 0.8 | 0.5 | 7.4 | 0.7 | 3.2 | 7.2 | 2.0 | 2.0 | 4.4 | 0.5 | 1.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.6 | 2.8 | 1.7 | 0.4 | 1.4 | 2.5 | 1.1 | 2.1 | 2.1 | 3.3 | 2.6 | 2.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 28.3 | 16.9 | 15.9 | 33.8 | 20.4 | 24.3 | 32.4 | 23.3 | 23.3 | 25.8 | 17.0 | 17.6 |
| LnGrp LOS | C | B | B | C | C | C | C | C | C | C | B | B |
| Approach Vol, veh/h | | 674 | | | 359 | | | 435 | | | 1065 | |
| Approach Delay, s/veh | | 19.9 | | | 23.5 | | | 24.9 | | | 19.3 | |
| Approach LOS | | B | | | C | | | C | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.6 | 13.6 | 5.9 | 20.9 | 7.9 | 20.3 | 12.2 | 14.6 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 24.0 | 28.0 | 9.0 | 36.0 | 12.5 | 39.5 | 14.0 | 31.0 |
| Max Q Clear Time (g_c+I1), s | 9.7 | 7.1 | 2.7 | 9.2 | 4.3 | 9.3 | 7.8 | 8.7 |
| Green Ext Time (p_c), s | 0.6 | 1.9 | 0.0 | 2.3 | 0.1 | 4.9 | 0.3 | 1.3 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 21.0 |
| HCM 6th LOS | C |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 275 | 160 | 30 | 195 | 90 | 45 |
| Future Volume (veh/h) | 275 | 160 | 30 | 195 | 90 | 45 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 299 | 174 | 33 | 212 | 98 | 49 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 627 | 355 | 72 | 1745 | 324 | 288 |
| Arrive On Green | 0.29 | 0.29 | 0.04 | 0.49 | 0.18 | 0.18 |
| Sat Flow, veh/h | 2279 | 1239 | 1781 | 3647 | 1781 | 1585 |
| Grp Volume(v), veh/h | 242 | 231 | 33 | 212 | 98 | 49 |
| Grp Sat Flow(s),veh/h/ln | 1777 | 1647 | 1781 | 1777 | 1781 | 1585 |
| Q Serve(g_s), s | 3.1 | 3.2 | 0.5 | 0.9 | 1.3 | 0.7 |
| Cycle Q Clear(g_c), s | 3.1 | 3.2 | 0.5 | 0.9 | 1.3 | 0.7 |
| Prop In Lane | | 0.75 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 510 | 473 | 72 | 1745 | 324 | 288 |
| V/C Ratio(X) | 0.47 | 0.49 | 0.46 | 0.12 | 0.30 | 0.17 |
| Avail Cap(c_a), veh/h | 1647 | 1527 | 615 | 5104 | 1716 | 1527 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 8.1 | 8.1 | 12.9 | 3.8 | 9.7 | 9.5 |
| Incr Delay (d2), s/veh | 0.7 | 0.8 | 4.5 | 0.0 | 0.5 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.8 | 0.7 | 0.2 | 0.1 | 0.4 | 0.2 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 8.8 | 8.9 | 17.4 | 3.8 | 10.3 | 9.8 |
| LnGrp LOS | A | A | B | A | B | A |
| Approach Vol, veh/h | 473 | | | 245 | 147 | |
| Approach Delay, s/veh | 8.9 | | | 5.6 | 10.1 | |
| Approach LOS | A | | | A | B | |

| Timer - Assigned Phs | 1 | 2 | | | | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.6 | 12.4 | | | | 18.0 | 9.5 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | | | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 9.5 | 25.5 | | | | 39.5 | 26.5 |
| Max Q Clear Time (g_c+I1), s | 2.5 | 5.2 | | | | 2.9 | 3.3 |
| Green Ext Time (p_c), s | 0.0 | 2.7 | | | | 1.4 | 0.4 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 8.2 |
| HCM 6th LOS | A |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 10 | 165 | 120 | 65 | 90 | 10 | 145 | 90 | 195 | 10 | 60 | 10 |
| Future Volume (veh/h) | 10 | 165 | 120 | 65 | 90 | 10 | 145 | 90 | 195 | 10 | 60 | 10 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 11 | 179 | 130 | 71 | 98 | 11 | 158 | 98 | 212 | 11 | 65 | 11 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 26 | 602 | 268 | 126 | 728 | 80 | 204 | 427 | 381 | 26 | 428 | 71 |
| Arrive On Green | 0.01 | 0.17 | 0.17 | 0.07 | 0.23 | 0.23 | 0.11 | 0.24 | 0.24 | 0.01 | 0.14 | 0.14 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 1781 | 3226 | 357 | 1781 | 1777 | 1585 | 1781 | 3052 | 504 |
| Grp Volume(v), veh/h | 11 | 179 | 130 | 71 | 53 | 56 | 158 | 98 | 212 | 11 | 37 | 39 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1781 | 1777 | 1806 | 1781 | 1777 | 1585 | 1781 | 1777 | 1780 |
| Q Serve(g_s), s | 0.2 | 1.6 | 2.6 | 1.4 | 0.9 | 0.9 | 3.1 | 1.6 | 4.2 | 0.2 | 0.7 | 0.7 |
| Cycle Q Clear(g_c), s | 0.2 | 1.6 | 2.6 | 1.4 | 0.9 | 0.9 | 3.1 | 1.6 | 4.2 | 0.2 | 0.7 | 0.7 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.20 | 1.00 | | 1.00 | 1.00 | | 0.28 |
| Lane Grp Cap(c), veh/h | 26 | 602 | 268 | 126 | 401 | 408 | 204 | 427 | 381 | 26 | 249 | 250 |
| V/C Ratio(X) | 0.43 | 0.30 | 0.48 | 0.56 | 0.13 | 0.14 | 0.77 | 0.23 | 0.56 | 0.43 | 0.15 | 0.16 |
| Avail Cap(c_a), veh/h | 375 | 2882 | 1285 | 375 | 1441 | 1465 | 375 | 1401 | 1250 | 375 | 1401 | 1403 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 17.4 | 12.9 | 13.4 | 16.0 | 11.0 | 11.0 | 15.3 | 10.9 | 11.9 | 17.4 | 13.5 | 13.5 |
| Incr Delay (d2), s/veh | 10.8 | 0.3 | 1.4 | 3.9 | 0.1 | 0.2 | 6.2 | 0.3 | 1.3 | 10.8 | 0.3 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.2 | 0.5 | 0.8 | 0.6 | 0.3 | 0.3 | 1.3 | 0.5 | 1.2 | 0.2 | 0.2 | 0.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 28.2 | 13.2 | 14.7 | 19.9 | 11.2 | 11.2 | 21.5 | 11.2 | 13.1 | 28.2 | 13.7 | 13.7 |
| LnGrp LOS | C | B | B | B | B | B | C | B | B | C | B | B |
| Approach Vol, veh/h | | 320 | | | 180 | | | 468 | | | 87 | |
| Approach Delay, s/veh | | 14.4 | | | 14.6 | | | 15.6 | | | 15.6 | |
| Approach LOS | | B | | | B | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.0 | 10.5 | 8.6 | 9.5 | 5.0 | 12.5 | 5.0 | 13.1 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 7.5 | 28.9 | 7.5 | 28.1 | 7.5 | 28.9 | 7.5 | 28.1 |
| Max Q Clear Time (g_c+I1), s | 3.4 | 4.6 | 5.1 | 2.7 | 2.2 | 2.9 | 2.2 | 6.2 |
| Green Ext Time (p_c), s | 0.0 | 1.5 | 0.1 | 0.3 | 0.0 | 0.5 | 0.0 | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 15.0 |
| HCM 6th LOS | B |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 465 | 100 | 65 | 60 | 215 | 155 |
| Future Volume (veh/h) | 465 | 100 | 65 | 60 | 215 | 155 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1752 | 1870 | 1870 | 1752 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 505 | 109 | 71 | 65 | 234 | 168 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 10 | 2 | 2 | 10 | 2 | 2 |
| Cap, veh/h | 619 | 134 | 117 | 1067 | 339 | 302 |
| Arrive On Green | 0.44 | 0.44 | 0.07 | 0.61 | 0.19 | 0.19 |
| Sat Flow, veh/h | 1396 | 301 | 1781 | 1752 | 1781 | 1585 |
| Grp Volume(v), veh/h | 0 | 614 | 71 | 65 | 234 | 168 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1698 | 1781 | 1752 | 1781 | 1585 |
| Q Serve(g_s), s | 0.0 | 14.2 | 1.7 | 0.7 | 5.5 | 4.3 |
| Cycle Q Clear(g_c), s | 0.0 | 14.2 | 1.7 | 0.7 | 5.5 | 4.3 |
| Prop In Lane | | 0.18 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 0 | 752 | 117 | 1067 | 339 | 302 |
| V/C Ratio(X) | 0.00 | 0.82 | 0.61 | 0.06 | 0.69 | 0.56 |
| Avail Cap(c_a), veh/h | 0 | 1362 | 377 | 1952 | 834 | 742 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 10.9 | 20.4 | 3.6 | 16.9 | 16.4 |
| Incr Delay (d2), s/veh | 0.0 | 2.2 | 5.1 | 0.0 | 2.5 | 1.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 3.7 | 0.8 | 0.1 | 2.1 | 1.4 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 13.1 | 25.5 | 3.6 | 19.4 | 18.0 |
| LnGrp LOS | A | B | C | A | B | B |
| Approach Vol, veh/h | 614 | | | 136 | 402 | |
| Approach Delay, s/veh | 13.1 | | | 15.0 | 18.8 | |
| Approach LOS | B | | | B | B | |

| Timer - Assigned Phs | 1 | 2 | | | | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.4 | 24.4 | | | | 31.8 | 13.0 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | | | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 9.5 | 36.0 | | | | 50.0 | 21.0 |
| Max Q Clear Time (g_c+I1), s | 3.7 | 16.2 | | | | 2.7 | 7.5 |
| Green Ext Time (p_c), s | 0.1 | 3.7 | | | | 0.3 | 1.1 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | 15.3 | |
| HCM 6th LOS | B | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 150 | 100 | 50 | 120 | 90 | 80 | 30 | 590 | 70 | 130 | 790 | 260 |
| Future Volume (veh/h) | 150 | 100 | 50 | 120 | 90 | 80 | 30 | 590 | 70 | 130 | 790 | 260 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 163 | 109 | 54 | 130 | 98 | 87 | 33 | 641 | 76 | 141 | 859 | 283 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 207 | 487 | 216 | 167 | 215 | 173 | 120 | 2138 | 664 | 246 | 2325 | 722 |
| Arrive On Green | 0.12 | 0.14 | 0.14 | 0.09 | 0.11 | 0.11 | 0.03 | 0.42 | 0.42 | 0.07 | 0.46 | 0.46 |
| Sat Flow, veh/h | 1781 | 3554 | 1575 | 1781 | 1868 | 1508 | 3456 | 5106 | 1585 | 3456 | 5106 | 1585 |
| Grp Volume(v), veh/h | 163 | 109 | 54 | 130 | 93 | 92 | 33 | 641 | 76 | 141 | 859 | 283 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1575 | 1781 | 1777 | 1599 | 1728 | 1702 | 1585 | 1728 | 1702 | 1585 |
| Q Serve(g_s), s | 5.7 | 1.8 | 2.0 | 4.6 | 3.1 | 3.5 | 0.6 | 5.4 | 1.9 | 2.5 | 7.1 | 7.6 |
| Cycle Q Clear(g_c), s | 5.7 | 1.8 | 2.0 | 4.6 | 3.1 | 3.5 | 0.6 | 5.4 | 1.9 | 2.5 | 7.1 | 7.6 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.94 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 207 | 487 | 216 | 167 | 204 | 184 | 120 | 2138 | 664 | 246 | 2325 | 722 |
| V/C Ratio(X) | 0.79 | 0.22 | 0.25 | 0.78 | 0.45 | 0.50 | 0.28 | 0.30 | 0.11 | 0.57 | 0.37 | 0.39 |
| Avail Cap(c_a), veh/h | 345 | 2204 | 977 | 290 | 1047 | 942 | 402 | 2138 | 664 | 509 | 2325 | 722 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 27.7 | 24.8 | 24.9 | 28.6 | 26.7 | 26.8 | 30.3 | 12.5 | 11.4 | 29.0 | 11.5 | 11.6 |
| Incr Delay (d2), s/veh | 6.6 | 0.2 | 0.6 | 7.6 | 1.6 | 2.1 | 1.2 | 0.4 | 0.4 | 2.1 | 0.5 | 1.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.7 | 0.7 | 0.7 | 2.2 | 1.3 | 1.4 | 0.3 | 1.9 | 0.6 | 1.1 | 2.4 | 2.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 34.3 | 25.0 | 25.5 | 36.2 | 28.2 | 28.9 | 31.6 | 12.8 | 11.8 | 31.1 | 12.0 | 13.2 |
| LnGrp LOS | C | C | C | D | C | C | C | B | B | C | B | B |
| Approach Vol, veh/h | | 326 | | | 315 | | | 750 | | | 1283 | |
| Approach Delay, s/veh | | 29.7 | | | 31.7 | | | 13.5 | | | 14.3 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 9.1 | 31.5 | 10.5 | 13.3 | 6.7 | 33.9 | 12.0 | 11.9 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 9.5 | 27.0 | 10.5 | 40.0 | 7.5 | 29.0 | 12.5 | 38.0 |
| Max Q Clear Time (g_c+I1), s | 4.6 | 7.4 | 6.6 | 4.0 | 2.6 | 9.6 | 7.7 | 5.5 |
| Green Ext Time (p_c), s | 0.2 | 4.4 | 0.1 | 0.8 | 0.0 | 6.8 | 0.2 | 1.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 18.0 |
| HCM 6th LOS | B |

**Notes**

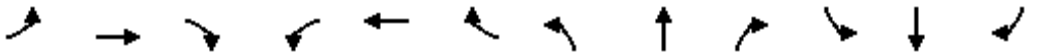
User approved pedestrian interval to be less than phase max green.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 180 | 160 | 180 | 230 | 140 | 70 | 340 | 700 | 250 | 100 | 780 | 110 |
| Future Volume (veh/h) | 180 | 160 | 180 | 230 | 140 | 70 | 340 | 700 | 250 | 100 | 780 | 110 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1752 | 1870 | 1870 | 1870 | 1870 | 1752 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 196 | 174 | 196 | 250 | 152 | 76 | 370 | 761 | 272 | 109 | 848 | 120 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 10 | 2 | 2 | 2 | 2 | 10 | 2 | 2 | 2 |
| Cap, veh/h | 276 | 331 | 279 | 321 | 367 | 310 | 443 | 1128 | 403 | 138 | 1217 | 172 |
| Arrive On Green | 0.08 | 0.18 | 0.18 | 0.10 | 0.20 | 0.20 | 0.13 | 0.44 | 0.44 | 0.08 | 0.39 | 0.39 |
| Sat Flow, veh/h | 3456 | 1870 | 1577 | 3237 | 1870 | 1578 | 3456 | 2563 | 916 | 1781 | 3124 | 442 |
| Grp Volume(v), veh/h | 196 | 174 | 196 | 250 | 152 | 76 | 370 | 528 | 505 | 109 | 482 | 486 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1577 | 1618 | 1870 | 1578 | 1728 | 1777 | 1702 | 1781 | 1777 | 1789 |
| Q Serve(g_s), s | 4.8 | 7.4 | 10.2 | 6.6 | 6.2 | 3.6 | 9.1 | 20.6 | 20.6 | 5.2 | 19.9 | 19.9 |
| Cycle Q Clear(g_c), s | 4.8 | 7.4 | 10.2 | 6.6 | 6.2 | 3.6 | 9.1 | 20.6 | 20.6 | 5.2 | 19.9 | 19.9 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.54 | 1.00 | | 0.25 |
| Lane Grp Cap(c), veh/h | 276 | 331 | 279 | 321 | 367 | 310 | 443 | 782 | 749 | 138 | 692 | 697 |
| V/C Ratio(X) | 0.71 | 0.53 | 0.70 | 0.78 | 0.41 | 0.25 | 0.84 | 0.67 | 0.67 | 0.79 | 0.70 | 0.70 |
| Avail Cap(c_a), veh/h | 416 | 793 | 669 | 352 | 771 | 651 | 455 | 782 | 749 | 194 | 692 | 697 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 39.2 | 32.6 | 33.8 | 38.4 | 30.7 | 29.6 | 37.1 | 19.5 | 19.5 | 39.5 | 22.3 | 22.3 |
| Incr Delay (d2), s/veh | 3.4 | 1.3 | 3.2 | 9.9 | 0.7 | 0.4 | 12.5 | 4.6 | 4.8 | 13.3 | 5.7 | 5.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.1 | 3.4 | 4.0 | 3.0 | 2.8 | 1.3 | 4.5 | 8.9 | 8.5 | 2.7 | 8.8 | 8.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 42.5 | 33.9 | 37.0 | 48.2 | 31.4 | 30.0 | 49.6 | 24.1 | 24.3 | 52.9 | 28.1 | 28.0 |
| LnGrp LOS | D | C | D | D | C | C | D | C | C | D | C | C |
| Approach Vol, veh/h | | 566 | | | 478 | | | 1403 | | | 1077 | |
| Approach Delay, s/veh | | 37.9 | | | 40.0 | | | 30.9 | | | 30.6 | |
| Approach LOS | | D | | | D | | | C | | | C | |

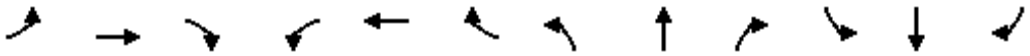
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 11.3 | 42.9 | 13.1 | 19.9 | 15.7 | 38.5 | 11.5 | 21.6 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 9.5 | 36.0 | 9.5 | 37.0 | 11.5 | 34.0 | 10.5 | 36.0 |
| Max Q Clear Time (g_c+I1), s | 11.2 | 22.6 | 8.6 | 12.2 | 11.1 | 21.9 | 6.8 | 8.2 |
| Green Ext Time (p_c), s | 0.0 | 5.6 | 0.1 | 1.6 | 0.1 | 4.8 | 0.2 | 1.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 33.2 |
| HCM 6th LOS | C |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 240 | 0 | 250 | 270 | 1090 | 0 | 0 | 700 | 540 |
| Future Volume (vph) | 0 | 0 | 0 | 240 | 0 | 250 | 270 | 1090 | 0 | 0 | 700 | 540 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Lane Util. Factor | | | | 0.95 | 0.91 | 0.95 | 1.00 | 0.95 | | | 0.95 | 1.00 |
| Frt | | | | 1.00 | 0.91 | 0.85 | 1.00 | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | 0.95 | 0.98 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | 1681 | 1451 | 1395 | 1770 | 3539 | | | 3471 | 1553 |
| Flt Permitted | | | | 0.95 | 0.98 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | 1681 | 1451 | 1395 | 1770 | 3539 | | | 3471 | 1553 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 0 | 261 | 0 | 272 | 293 | 1185 | 0 | 0 | 761 | 587 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 61 | 87 | 0 | 0 | 0 | 0 | 0 | 318 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 185 | 118 | 82 | 293 | 1185 | 0 | 0 | 761 | 269 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 10% | 2% | 2% | 2% | 2% | 4% | 4% |
| Turn Type | | | | Perm | NA | Perm | Prot | NA | | | NA | Perm |
| Protected Phases | | | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | | | | 8 | | 8 | | | | | | 6 |
| Actuated Green, G (s) | | | | 15.4 | 15.4 | 15.4 | 19.8 | 65.6 | | | 41.3 | 41.3 |
| Effective Green, g (s) | | | | 15.4 | 15.4 | 15.4 | 19.8 | 65.6 | | | 41.3 | 41.3 |
| Actuated g/C Ratio | | | | 0.17 | 0.17 | 0.17 | 0.22 | 0.73 | | | 0.46 | 0.46 |
| Clearance Time (s) | | | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Vehicle Extension (s) | | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | | | 287 | 248 | 238 | 389 | 2579 | | | 1592 | 712 |
| v/s Ratio Prot | | | | | | | c0.17 | c0.33 | | | 0.22 | |
| v/s Ratio Perm | | | | c0.11 | 0.08 | 0.06 | | | | | | 0.17 |
| v/c Ratio | | | | 0.64 | 0.48 | 0.34 | 0.75 | 0.46 | | | 0.48 | 0.38 |
| Uniform Delay, d1 | | | | 34.8 | 33.7 | 32.9 | 32.8 | 5.0 | | | 16.9 | 15.9 |
| Progression Factor | | | | 1.00 | 1.00 | 1.00 | 0.96 | 0.39 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | | | 4.9 | 1.5 | 0.9 | 6.3 | 0.5 | | | 1.0 | 1.5 |
| Delay (s) | | | | 39.7 | 35.1 | 33.7 | 37.6 | 2.4 | | | 17.9 | 17.5 |
| Level of Service | | | | D | D | C | D | A | | | B | B |
| Approach Delay (s) | | 0.0 | | | 36.3 | | | 9.4 | | | 17.7 | |
| Approach LOS | | A | | | D | | | A | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 17.0 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.59 | | |
| Actuated Cycle Length (s) | 90.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 68.8% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 660 | 0 | 440 | 0 | 0 | 0 | 0 | 700 | 120 | 200 | 740 | 0 |
| Future Volume (vph) | 660 | 0 | 440 | 0 | 0 | 0 | 0 | 700 | 120 | 200 | 740 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.0 | 4.5 | | | | | 4.5 | 4.5 | 4.5 | 4.5 | |
| Lane Util. Factor | 0.97 | 0.95 | 0.95 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | |
| Frt | 1.00 | 0.85 | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (prot) | 3335 | 1504 | 1504 | | | | | 3539 | 1583 | 1719 | 3539 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (perm) | 3335 | 1504 | 1504 | | | | | 3539 | 1583 | 1719 | 3539 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 717 | 0 | 478 | 0 | 0 | 0 | 0 | 761 | 130 | 217 | 804 | 0 |
| RTOR Reduction (vph) | 0 | 239 | 146 | 0 | 0 | 0 | 0 | 0 | 76 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 717 | 0 | 93 | 0 | 0 | 0 | 0 | 761 | 54 | 217 | 804 | 0 |
| Heavy Vehicles (%) | 5% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 5% | 2% | 2% |
| Turn Type | custom | NA | custom | | | | | NA | Perm | Prot | NA | |
| Protected Phases | | | | | | | | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | | | | | | 2 | | | |
| Actuated Green, G (s) | 23.5 | 0.0 | 23.5 | | | | | 37.1 | 37.1 | 15.9 | 57.5 | |
| Effective Green, g (s) | 23.5 | 0.0 | 23.5 | | | | | 37.1 | 37.1 | 15.9 | 57.5 | |
| Actuated g/C Ratio | 0.26 | 0.00 | 0.26 | | | | | 0.41 | 0.41 | 0.18 | 0.64 | |
| Clearance Time (s) | 4.5 | | 4.5 | | | | | 4.5 | 4.5 | 4.5 | 4.5 | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 870 | 0 | 392 | | | | | 1458 | 652 | 303 | 2261 | |
| v/s Ratio Prot | | | | | | | | c0.22 | | c0.13 | 0.23 | |
| v/s Ratio Perm | c0.21 | | 0.06 | | | | | | 0.03 | | | |
| v/c Ratio | 0.82 | 0.00 | 0.24 | | | | | 0.52 | 0.08 | 0.72 | 0.36 | |
| Uniform Delay, d1 | 31.3 | 45.0 | 26.2 | | | | | 19.8 | 16.1 | 34.9 | 7.6 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | | | | | 1.00 | 1.00 | 1.07 | 0.32 | |
| Incremental Delay, d2 | 6.4 | 0.0 | 0.3 | | | | | 1.3 | 0.2 | 7.0 | 0.4 | |
| Delay (s) | 37.7 | 45.0 | 26.5 | | | | | 21.1 | 16.3 | 44.3 | 2.8 | |
| Level of Service | D | D | C | | | | | C | B | D | A | |
| Approach Delay (s) | | 36.9 | | | 0.0 | | | 20.4 | | | 11.6 | |
| Approach LOS | | D | | | A | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 23.9 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.65 | | |
| Actuated Cycle Length (s) | 90.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 68.8% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.5 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↑ | ↑ | | ↰ | ↱ |
| Traffic Vol, veh/h | 0 | 620 | 5 | 0 | 5 | 120 |
| Future Vol, veh/h | 0 | 620 | 5 | 0 | 5 | 120 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 25 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 674 | 5 | 0 | 5 | 130 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | 679 | 5 |
| Stage 1 | - | - | - | - | 5 | - |
| Stage 2 | - | - | - | - | 674 | - |
| Critical Hdwy | - | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | 0 | 417 | 1078 |
| Stage 1 | 0 | - | - | 0 | 1018 | - |
| Stage 2 | 0 | - | - | 0 | 506 | - |
| Platoon blocked, % | | - | - | | | |
| Mov Cap-1 Maneuver | - | - | - | - | 417 | 1078 |
| Mov Cap-2 Maneuver | - | - | - | - | 417 | - |
| Stage 1 | - | - | - | - | 1018 | - |
| Stage 2 | - | - | - | - | 506 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 9 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBT | WBT | SBLn1 | SBLn2 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | 417 | 1078 |
| HCM Lane V/C Ratio | - | - | 0.013 | 0.121 |
| HCM Control Delay (s) | - | - | 13.7 | 8.8 |
| HCM Lane LOS | - | - | B | A |
| HCM 95th %tile Q(veh) | - | - | 0 | 0.4 |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 320 | 0 | 145 | 80 | 270 | 0 | 0 | 190 | 40 |
| Future Volume (veh/h) | 0 | 0 | 0 | 320 | 0 | 145 | 80 | 270 | 0 | 0 | 190 | 40 |
| Initial Q (Qb), veh | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | | | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | | | | 1870 | 0 | 1870 | 1870 | 1870 | 0 | 0 | 1870 | 1870 |
| Adj Flow Rate, veh/h | | | | 348 | 0 | 158 | 87 | 293 | 0 | 0 | 207 | 43 |
| Peak Hour Factor | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | | | | 2 | 0 | 2 | 2 | 2 | 0 | 0 | 2 | 2 |
| Cap, veh/h | | | | 506 | 0 | 450 | 154 | 1456 | 0 | 0 | 500 | 102 |
| Arrive On Green | | | | 0.28 | 0.00 | 0.28 | 0.09 | 0.41 | 0.00 | 0.00 | 0.17 | 0.17 |
| Sat Flow, veh/h | | | | 1781 | 0 | 1585 | 1781 | 3647 | 0 | 0 | 3034 | 599 |
| Grp Volume(v), veh/h | | | | 348 | 0 | 158 | 87 | 293 | 0 | 0 | 123 | 127 |
| Grp Sat Flow(s),veh/h/ln | | | | 1781 | 0 | 1585 | 1781 | 1777 | 0 | 0 | 1777 | 1763 |
| Q Serve(g_s), s | | | | 5.1 | 0.0 | 2.3 | 1.4 | 1.6 | 0.0 | 0.0 | 1.8 | 1.9 |
| Cycle Q Clear(g_c), s | | | | 5.1 | 0.0 | 2.3 | 1.4 | 1.6 | 0.0 | 0.0 | 1.8 | 1.9 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 0.34 |
| Lane Grp Cap(c), veh/h | | | | 506 | 0 | 450 | 154 | 1456 | 0 | 0 | 302 | 300 |
| V/C Ratio(X) | | | | 0.69 | 0.00 | 0.35 | 0.56 | 0.20 | 0.00 | 0.00 | 0.41 | 0.42 |
| Avail Cap(c_a), veh/h | | | | 1243 | 0 | 1106 | 455 | 3688 | 0 | 0 | 1118 | 1109 |
| HCM Platoon Ratio | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | | | | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | | | | 9.4 | 0.0 | 8.4 | 12.9 | 5.6 | 0.0 | 0.0 | 10.9 | 10.9 |
| Incr Delay (d2), s/veh | | | | 1.7 | 0.0 | 0.5 | 3.2 | 0.1 | 0.0 | 0.0 | 0.9 | 0.9 |
| Initial Q Delay(d3),s/veh | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | | | | 1.4 | 0.0 | 0.5 | 0.5 | 0.2 | 0.0 | 0.0 | 0.5 | 0.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 11.0 | 0.0 | 8.8 | 16.1 | 5.6 | 0.0 | 0.0 | 11.8 | 11.8 |
| LnGrp LOS | | | | B | A | A | B | A | A | A | B | B |
| Approach Vol, veh/h | | | | | 506 | | | 380 | | | 250 | |
| Approach Delay, s/veh | | | | | 10.3 | | | 8.0 | | | 11.8 | |
| Approach LOS | | | | | B | | | A | | | B | |

| Timer - Assigned Phs | 2 | | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 16.5 | | 7.0 | 9.5 | | 12.8 |
| Change Period (Y+Rc), s | 4.5 | | 4.5 | 4.5 | | 4.5 |
| Max Green Setting (Gmax), s | 30.5 | | 7.5 | 18.5 | | 20.5 |
| Max Q Clear Time (g_c+I1), s | 3.6 | | 3.4 | 3.9 | | 7.1 |
| Green Ext Time (p_c), s | 1.8 | | 0.1 | 1.1 | | 1.4 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 9.9 |
| HCM 6th LOS | | A |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 6.1 |
| Intersection LOS | A |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Entry Lanes | 1 | 1 | 1 | 1 |
| Conflicting Circle Lanes | 1 | 1 | 1 | 1 |
| Adj Approach Flow, veh/h | 185 | 256 | 164 | 424 |
| Demand Flow Rate, veh/h | 189 | 261 | 167 | 432 |
| Vehicles Circulating, veh/h | 332 | 189 | 210 | 211 |
| Vehicles Exiting, veh/h | 311 | 188 | 311 | 239 |
| Ped Vol Crossing Leg, #/h | 0 | 0 | 0 | 0 |
| Ped Cap Adj | 1.000 | 1.000 | 1.000 | 1.000 |
| Approach Delay, s/veh | 5.6 | 5.3 | 4.6 | 7.3 |
| Approach LOS | A | A | A | A |

| Lane | Left | Left | Left | Left |
|---|---|---|---|---|
| Designated Moves | LTR | LTR | LTR | LTR |
| Assumed Moves | LTR | LTR | LTR | LTR |
| RT Channelized | | | | |
| Lane Util | 1.000 | 1.000 | 1.000 | 1.000 |
| Follow-Up Headway, s | 2.609 | 2.609 | 2.609 | 2.609 |
| Critical Headway, s | 4.976 | 4.976 | 4.976 | 4.976 |
| Entry Flow, veh/h | 189 | 261 | 167 | 432 |
| Cap Entry Lane, veh/h | 984 | 1138 | 1114 | 1113 |
| Entry HV Adj Factor | 0.978 | 0.981 | 0.981 | 0.981 |
| Flow Entry, veh/h | 185 | 256 | 164 | 424 |
| Cap Entry, veh/h | 962 | 1116 | 1093 | 1092 |
| V/C Ratio | 0.192 | 0.229 | 0.150 | 0.388 |
| Control Delay, s/veh | 5.6 | 5.3 | 4.6 | 7.3 |
| LOS | A | A | A | A |
| 95th %tile Queue, veh | 1 | 1 | 1 | 2 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.6 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 170 | 235 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 170 | 235 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 185 | 255 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay | 8.3 | 8.8 | 0 |
| HCM LOS | A | A | - |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 0% | 0% | 0% |
| Vol Thru, % | 100% | 100% | 100% |
| Vol Right, % | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 170 | 235 | 0 |
| LT Vol | 0 | 0 | 0 |
| Through Vol | 170 | 235 | 0 |
| RT Vol | 0 | 0 | 0 |
| Lane Flow Rate | 185 | 255 | 0 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.212 | 0.289 | 0 |
| Departure Headway (Hd) | 4.123 | 4.071 | 4.871 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 865 | 879 | 0 |
| Service Time | 2.175 | 2.111 | 2.871 |
| HCM Lane V/C Ratio | 0.214 | 0.29 | 0 |
| HCM Control Delay | 8.3 | 8.8 | 7.9 |
| HCM Lane LOS | A | A | N |
| HCM 95th-tile Q | 0.8 | 1.2 | 0 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.6 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 170 | 235 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 170 | 235 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 185 | 255 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay | 8.3 | 8.8 | 0 |
| HCM LOS | A | A | - |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 0% | 0% | 0% |
| Vol Thru, % | 100% | 100% | 100% |
| Vol Right, % | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 170 | 235 | 0 |
| LT Vol | 0 | 0 | 0 |
| Through Vol | 170 | 235 | 0 |
| RT Vol | 0 | 0 | 0 |
| Lane Flow Rate | 185 | 255 | 0 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.212 | 0.289 | 0 |
| Departure Headway (Hd) | 4.123 | 4.071 | 4.871 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 865 | 879 | 0 |
| Service Time | 2.175 | 2.111 | 2.871 |
| HCM Lane V/C Ratio | 0.214 | 0.29 | 0 |
| HCM Control Delay | 8.3 | 8.8 | 7.9 |
| HCM Lane LOS | A | A | N |
| HCM 95th-tile Q | 0.8 | 1.2 | 0 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.7 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 25 | 145 | 200 | 20 | 25 | 35 |
| Future Vol, veh/h | 25 | 145 | 200 | 20 | 25 | 35 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 27 | 158 | 217 | 22 | 27 | 38 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 1 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 2 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 2 | 1 |
| HCM Control Delay | 8.7 | 8.9 | 8.2 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|
| Vol Left, % | 15% | 0% | 100% | 0% |
| Vol Thru, % | 85% | 91% | 0% | 0% |
| Vol Right, % | 0% | 9% | 0% | 100% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 170 | 220 | 25 | 35 |
| LT Vol | 25 | 0 | 25 | 0 |
| Through Vol | 145 | 200 | 0 | 0 |
| RT Vol | 0 | 20 | 0 | 35 |
| Lane Flow Rate | 185 | 239 | 27 | 38 |
| Geometry Grp | 2 | 2 | 7 | 7 |
| Degree of Util (X) | 0.225 | 0.282 | 0.045 | 0.05 |
| Departure Headway (Hd) | 4.376 | 4.244 | 5.965 | 4.755 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 822 | 849 | 601 | 754 |
| Service Time | 2.391 | 2.257 | 3.69 | 2.48 |
| HCM Lane V/C Ratio | 0.225 | 0.282 | 0.045 | 0.05 |
| HCM Control Delay | 8.7 | 8.9 | 9 | 7.7 |
| HCM Lane LOS | A | A | A | A |
| HCM 95th-tile Q | 0.9 | 1.2 | 0.1 | 0.2 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.5 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 170 | 220 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 170 | 220 | 0 | 0 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 185 | 239 | 0 | 0 | 0 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 1 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 1 | 1 |
| HCM Control Delay | 8.3 | 8.6 | 0 |
| HCM LOS | A | A | - |

| Lane | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|
| Vol Left, % | 0% | 0% | 0% |
| Vol Thru, % | 100% | 100% | 100% |
| Vol Right, % | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 170 | 220 | 0 |
| LT Vol | 0 | 0 | 0 |
| Through Vol | 170 | 220 | 0 |
| RT Vol | 0 | 0 | 0 |
| Lane Flow Rate | 185 | 239 | 0 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.211 | 0.27 | 0 |
| Departure Headway (Hd) | 4.111 | 4.071 | 4.835 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 868 | 880 | 0 |
| Service Time | 2.159 | 2.11 | 2.835 |
| HCM Lane V/C Ratio | 0.213 | 0.272 | 0 |
| HCM Control Delay | 8.3 | 8.6 | 7.8 |
| HCM Lane LOS | A | A | N |
| HCM 95th-tile Q | 0.8 | 1.1 | 0 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.7 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 15 | 145 | 10 | 10 | 185 | 20 | 10 | 10 | 10 | 25 | 10 | 25 |
| Future Vol, veh/h | 15 | 145 | 10 | 10 | 185 | 20 | 10 | 10 | 10 | 25 | 10 | 25 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 158 | 11 | 11 | 201 | 22 | 11 | 11 | 11 | 27 | 11 | 27 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 8.7 | 9 | 8.1 | 8.2 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 33% | 9% | 5% | 42% |
| Vol Thru, % | 33% | 85% | 86% | 17% |
| Vol Right, % | 33% | 6% | 9% | 42% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 30 | 170 | 215 | 60 |
| LT Vol | 10 | 15 | 10 | 25 |
| Through Vol | 10 | 145 | 185 | 10 |
| RT Vol | 10 | 10 | 20 | 25 |
| Lane Flow Rate | 33 | 185 | 234 | 65 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.044 | 0.226 | 0.28 | 0.086 |
| Departure Headway (Hd) | 4.813 | 4.398 | 4.321 | 4.734 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 744 | 817 | 832 | 757 |
| Service Time | 2.844 | 2.419 | 2.341 | 2.763 |
| HCM Lane V/C Ratio | 0.044 | 0.226 | 0.281 | 0.086 |
| HCM Control Delay | 8.1 | 8.7 | 9 | 8.2 |
| HCM Lane LOS | A | A | A | A |
| HCM 95th-tile Q | 0.1 | 0.9 | 1.1 | 0.3 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 45 | 60 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 45 | 60 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 49 | 65 | 0 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 114 | 65 | 65 | 0 | - | 0 |
| Stage 1 | 65 | - | - | - | - | - |
| Stage 2 | 49 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 882 | 999 | 1537 | - | - | - |
| Stage 1 | 958 | - | - | - | - | - |
| Stage 2 | 973 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 882 | 999 | 1537 | - | - | - |
| Mov Cap-2 Maneuver | 882 | - | - | - | - | - |
| Stage 1 | 958 | - | - | - | - | - |
| Stage 2 | 973 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1537 | - | - | - | - |
| HCM Lane V/C Ratio | - | - | - | - | - |
| HCM Control Delay (s) | 0 | - | 0 | - | - |
| HCM Lane LOS | A | - | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.3 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 0 | 0 | 60 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 0 | 0 | 60 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 65 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 0 | 0 | 7.2 | 7.3 |
| HCM LOS | - | - | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 0% | 0% | 0% | 0% |
| Vol Thru, % | 100% | 100% | 100% | 100% |
| Vol Right, % | 0% | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 45 | 0 | 0 | 60 |
| LT Vol | 0 | 0 | 0 | 0 |
| Through Vol | 45 | 0 | 0 | 60 |
| RT Vol | 0 | 0 | 0 | 0 |
| Lane Flow Rate | 49 | 0 | 0 | 65 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.054 | 0 | 0 | 0.072 |
| Departure Headway (Hd) | 3.982 | 4.13 | 4.13 | 3.97 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 902 | 0 | 0 | 906 |
| Service Time | 1.994 | 2.178 | 2.178 | 1.979 |
| HCM Lane V/C Ratio | 0.054 | 0 | 0 | 0.072 |
| HCM Control Delay | 7.2 | 7.2 | 7.2 | 7.3 |
| HCM Lane LOS | A | N | N | A |
| HCM 95th-tile Q | 0.2 | 0 | 0 | 0.2 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.3 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 0 | 0 | 60 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 0 | 0 | 60 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 65 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 0 | 0 | 7.2 | 7.3 |
| HCM LOS | - | - | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 0% | 0% | 0% | 0% |
| Vol Thru, % | 100% | 100% | 100% | 100% |
| Vol Right, % | 0% | 0% | 0% | 0% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 45 | 0 | 0 | 60 |
| LT Vol | 0 | 0 | 0 | 0 |
| Through Vol | 45 | 0 | 0 | 60 |
| RT Vol | 0 | 0 | 0 | 0 |
| Lane Flow Rate | 49 | 0 | 0 | 65 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.054 | 0 | 0 | 0.072 |
| Departure Headway (Hd) | 3.982 | 4.13 | 4.13 | 3.97 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 902 | 0 | 0 | 906 |
| Service Time | 1.994 | 2.178 | 2.178 | 1.979 |
| HCM Lane V/C Ratio | 0.054 | 0 | 0 | 0.072 |
| HCM Control Delay | 7.2 | 7.2 | 7.2 | 7.3 |
| HCM Lane LOS | A | N | N | A |
| HCM 95th-tile Q | 0.2 | 0 | 0 | 0.2 |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 95 | 35 | 50 | 10 | 95 | 45 | 95 | 205 | 10 | 60 | 180 | 25 |
| Future Volume (veh/h) | 95 | 35 | 50 | 10 | 95 | 45 | 95 | 205 | 10 | 60 | 180 | 25 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 103 | 38 | 54 | 11 | 103 | 49 | 103 | 223 | 11 | 65 | 196 | 27 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 213 | 432 | 366 | 26 | 236 | 200 | 158 | 371 | 314 | 118 | 329 | 279 |
| Arrive On Green | 0.12 | 0.23 | 0.23 | 0.01 | 0.13 | 0.13 | 0.09 | 0.20 | 0.20 | 0.07 | 0.18 | 0.18 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Grp Volume(v), veh/h | 103 | 38 | 54 | 11 | 103 | 49 | 103 | 223 | 11 | 65 | 196 | 27 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Q Serve(g_s), s | 2.0 | 0.6 | 1.0 | 0.2 | 1.9 | 1.0 | 2.1 | 4.0 | 0.2 | 1.3 | 3.5 | 0.5 |
| Cycle Q Clear(g_c), s | 2.0 | 0.6 | 1.0 | 0.2 | 1.9 | 1.0 | 2.1 | 4.0 | 0.2 | 1.3 | 3.5 | 0.5 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 213 | 432 | 366 | 26 | 236 | 200 | 158 | 371 | 314 | 118 | 329 | 279 |
| V/C Ratio(X) | 0.48 | 0.09 | 0.15 | 0.43 | 0.44 | 0.25 | 0.65 | 0.60 | 0.03 | 0.55 | 0.60 | 0.10 |
| Avail Cap(c_a), veh/h | 509 | 1222 | 1036 | 364 | 1070 | 906 | 364 | 1171 | 993 | 364 | 1171 | 993 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 15.1 | 11.1 | 11.2 | 17.9 | 14.8 | 14.5 | 16.2 | 13.4 | 11.9 | 16.6 | 13.9 | 12.7 |
| Incr Delay (d2), s/veh | 1.7 | 0.1 | 0.2 | 10.8 | 1.3 | 0.6 | 4.5 | 1.6 | 0.0 | 4.0 | 1.7 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.7 | 0.2 | 0.3 | 0.2 | 0.7 | 0.3 | 0.8 | 1.3 | 0.1 | 0.5 | 1.2 | 0.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 16.8 | 11.2 | 11.4 | 28.8 | 16.1 | 15.1 | 20.7 | 15.0 | 11.9 | 20.6 | 15.7 | 12.8 |
| LnGrp LOS | B | B | B | C | B | B | C | B | B | C | B | B |
| Approach Vol, veh/h | | 195 | | | 163 | | | 337 | | | 288 | |
| Approach Delay, s/veh | | 14.2 | | | 16.7 | | | 16.6 | | | 16.5 | |
| Approach LOS | | B | | | B | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.9 | 11.8 | 5.0 | 13.0 | 7.8 | 11.0 | 8.9 | 9.1 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 7.5 | 23.0 | 7.5 | 24.0 | 7.5 | 23.0 | 10.5 | 21.0 |
| Max Q Clear Time (g_c+I1), s | 3.3 | 6.0 | 2.2 | 3.0 | 4.1 | 5.5 | 4.0 | 3.9 |
| Green Ext Time (p_c), s | 0.0 | 1.0 | 0.0 | 0.3 | 0.1 | 0.9 | 0.1 | 0.6 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 16.1 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 8.2 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 15 | 380 | 35 | 15 | 140 | 70 |
| Future Vol, veh/h | 15 | 380 | 35 | 15 | 140 | 70 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 400 | - | - | 300 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 413 | 38 | 16 | 152 | 76 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 426 | 46 | 0 | 0 | 54 | 0 |
| Stage 1 | 46 | - | - | - | - | - |
| Stage 2 | 380 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 585 | 1023 | - | - | 1551 | - |
| Stage 1 | 976 | - | - | - | - | - |
| Stage 2 | 691 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 528 | 1023 | - | - | 1551 | - |
| Mov Cap-2 Maneuver | 528 | - | - | - | - | - |
| Stage 1 | 976 | - | - | - | - | - |
| Stage 2 | 623 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 10.9 | 0 | 5 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 528 | 1023 | 1551 | - |
| HCM Lane V/C Ratio | - | - | 0.031 | 0.404 | 0.098 | - |
| HCM Control Delay (s) | - | - | 12 | 10.9 | 7.6 | - |
| HCM Lane LOS | - | - | B | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 0.1 | 2 | 0.3 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 20 | 5 | 5 | 410 | 205 | 40 |
| Future Vol, veh/h | 20 | 5 | 5 | 410 | 205 | 40 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 22 | 5 | 5 | 446 | 223 | 43 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 701 | 245 | 266 | 0 | - | 0 |
| Stage 1 | 245 | - | - | - | - | - |
| Stage 2 | 456 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 405 | 794 | 1298 | - | - | - |
| Stage 1 | 796 | - | - | - | - | - |
| Stage 2 | 638 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 403 | 794 | 1298 | - | - | - |
| Mov Cap-2 Maneuver | 403 | - | - | - | - | - |
| Stage 1 | 792 | - | - | - | - | - |
| Stage 2 | 638 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 13.6 | 0.1 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1298 | - | 447 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | 0.061 | - | - |
| HCM Control Delay (s) | 7.8 | 0 | 13.6 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.2 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.2 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 10 | 5 | 5 | 40 | 55 | 30 |
| Future Vol, veh/h | 10 | 5 | 5 | 40 | 55 | 30 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 100 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 5 | 5 | 43 | 60 | 33 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 130 | 77 | 93 | 0 | - | 0 |
| Stage 1 | 77 | - | - | - | - | - |
| Stage 2 | 53 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 864 | 984 | 1501 | - | - | - |
| Stage 1 | 946 | - | - | - | - | - |
| Stage 2 | 970 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 861 | 984 | 1501 | - | - | - |
| Mov Cap-2 Maneuver | 861 | - | - | - | - | - |
| Stage 1 | 943 | - | - | - | - | - |
| Stage 2 | 970 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9 | 0.8 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1501 | - | 861 | 984 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | 0.013 | 0.006 | - | - |
| HCM Control Delay (s) | 7.4 | 0 | 9.2 | 8.7 | - | - |
| HCM Lane LOS | A | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0 | 0 | - | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.3 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 20 | 5 | 5 | 5 | 5 | 35 | 5 | 80 | 5 | 45 | 115 | 30 |
| Future Vol, veh/h | 20 | 5 | 5 | 5 | 5 | 35 | 5 | 80 | 5 | 45 | 115 | 30 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 22 | 5 | 5 | 5 | 5 | 38 | 5 | 87 | 5 | 49 | 125 | 33 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 1 | 1 |
| HCM Control Delay | 8 | 7.5 | 8.2 | 8.5 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 67% | 11% | 100% | 0% |
| Vol Thru, % | 0% | 94% | 17% | 11% | 0% | 79% |
| Vol Right, % | 0% | 6% | 17% | 78% | 0% | 21% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 5 | 85 | 30 | 45 | 45 | 145 |
| LT Vol | 5 | 0 | 20 | 5 | 45 | 0 |
| Through Vol | 0 | 80 | 5 | 5 | 0 | 115 |
| RT Vol | 0 | 5 | 5 | 35 | 0 | 30 |
| Lane Flow Rate | 5 | 92 | 33 | 49 | 49 | 158 |
| Geometry Grp | 7 | 7 | 2 | 2 | 7 | 7 |
| Degree of Util (X) | 0.008 | 0.124 | 0.043 | 0.058 | 0.071 | 0.201 |
| Departure Headway (Hd) | 5.392 | 4.849 | 4.743 | 4.249 | 5.228 | 4.581 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 666 | 742 | 758 | 847 | 678 | 774 |
| Service Time | 3.105 | 2.562 | 2.75 | 2.255 | 3.014 | 2.367 |
| HCM Lane V/C Ratio | 0.008 | 0.124 | 0.044 | 0.058 | 0.072 | 0.204 |
| HCM Control Delay | 8.1 | 8.2 | 8 | 7.5 | 8.4 | 8.5 |
| HCM Lane LOS | A | A | A | A | A | A |
| HCM 95th-tile Q | 0 | 0.4 | 0.1 | 0.2 | 0.2 | 0.7 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.8 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 20 | 5 | 10 | 10 | 5 | 35 | 10 | 35 | 10 | 35 | 65 | 25 |
| Future Vol, veh/h | 20 | 5 | 10 | 10 | 5 | 35 | 10 | 35 | 10 | 35 | 65 | 25 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 22 | 5 | 11 | 11 | 5 | 38 | 11 | 38 | 11 | 38 | 71 | 27 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 1 | 1 |
| HCM Control Delay | 7.6 | 7.3 | 7.8 | 8 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 57% | 20% | 100% | 0% |
| Vol Thru, % | 0% | 78% | 14% | 10% | 0% | 72% |
| Vol Right, % | 0% | 22% | 29% | 70% | 0% | 28% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 10 | 45 | 35 | 50 | 35 | 90 |
| LT Vol | 10 | 0 | 20 | 10 | 35 | 0 |
| Through Vol | 0 | 35 | 5 | 5 | 0 | 65 |
| RT Vol | 0 | 10 | 10 | 35 | 0 | 25 |
| Lane Flow Rate | 11 | 49 | 38 | 54 | 38 | 98 |
| Geometry Grp | 7 | 7 | 2 | 2 | 7 | 7 |
| Degree of Util (X) | 0.016 | 0.063 | 0.047 | 0.061 | 0.055 | 0.123 |
| Departure Headway (Hd) | 5.269 | 4.612 | 4.401 | 4.064 | 5.228 | 4.532 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 672 | 766 | 818 | 886 | 680 | 784 |
| Service Time | 3.059 | 2.401 | 2.403 | 2.066 | 2.996 | 2.3 |
| HCM Lane V/C Ratio | 0.016 | 0.064 | 0.046 | 0.061 | 0.056 | 0.125 |
| HCM Control Delay | 8.1 | 7.7 | 7.6 | 7.3 | 8.3 | 7.9 |
| HCM Lane LOS | A | A | A | A | A | A |
| HCM 95th-tile Q | 0 | 0.2 | 0.1 | 0.2 | 0.2 | 0.4 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↔ | | | ↔ | | ↰ | ↑ | | ↰ | ↑ | |
| Traffic Vol, veh/h | 20 | 5 | 10 | 10 | 5 | 15 | 15 | 20 | 10 | 25 | 40 | 20 |
| Future Vol, veh/h | 20 | 5 | 10 | 10 | 5 | 15 | 15 | 20 | 10 | 25 | 40 | 20 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 75 | - | - | 75 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 22 | 5 | 11 | 11 | 5 | 16 | 16 | 22 | 11 | 27 | 43 | 22 |

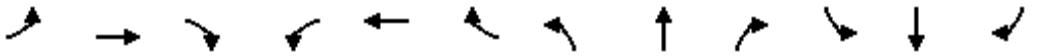
| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 178 | 173 | 54 | 176 | 179 | 28 | 65 | 0 | 0 | 33 | 0 | 0 |
| Stage 1 | 108 | 108 | - | 60 | 60 | - | - | - | - | - | - | - |
| Stage 2 | 70 | 65 | - | 116 | 119 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 784 | 720 | 1013 | 786 | 715 | 1047 | 1537 | - | - | 1579 | - | - |
| Stage 1 | 897 | 806 | - | 951 | 845 | - | - | - | - | - | - | - |
| Stage 2 | 940 | 841 | - | 889 | 797 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 751 | 701 | 1013 | 757 | 696 | 1047 | 1537 | - | - | 1579 | - | - |
| Mov Cap-2 Maneuver | 751 | 701 | - | 757 | 696 | - | - | - | - | - | - | - |
| Stage 1 | 888 | 792 | - | 941 | 837 | - | - | - | - | - | - | - |
| Stage 2 | 910 | 833 | - | 858 | 783 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 9.7 | 9.3 | 2.5 | 2.2 |
| HCM LOS | A | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1537 | - | - | 802 | 864 | 1579 | - | - |
| HCM Lane V/C Ratio | 0.011 | - | - | 0.047 | 0.038 | 0.017 | - | - |
| HCM Control Delay (s) | 7.4 | - | - | 9.7 | 9.3 | 7.3 | - | - |
| HCM Lane LOS | A | - | - | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 0.1 | 0.1 | - | - |

# Appendix G:
# Cumulative + Project AM Peak Hour Intersection Level of Service Analysis

FEHR PEERS



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 190 | 100 | 110 | 30 | 110 | 150 | 120 | 550 | 30 | 100 | 280 | 160 |
| Future Volume (veh/h) | 190 | 106 | 110 | 30 | 128 | 274 | 120 | 550 | 30 | 137 | 280 | 160 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 207 | 115 | 120 | 33 | 139 | 298 | 130 | 598 | 33 | 149 | 304 | 174 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 254 | 638 | 541 | 61 | 436 | 370 | 166 | 832 | 46 | 188 | 908 | 405 |
| Arrive On Green | 0.14 | 0.34 | 0.34 | 0.03 | 0.23 | 0.23 | 0.09 | 0.24 | 0.24 | 0.11 | 0.26 | 0.26 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 3424 | 189 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 207 | 115 | 120 | 33 | 139 | 298 | 130 | 310 | 321 | 149 | 304 | 174 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1777 | 1836 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 7.4 | 2.8 | 3.5 | 1.2 | 4.0 | 11.6 | 4.7 | 10.5 | 10.5 | 5.3 | 4.6 | 6.0 |
| Cycle Q Clear(g_c), s | 7.4 | 2.8 | 3.5 | 1.2 | 4.0 | 11.6 | 4.7 | 10.5 | 10.5 | 5.3 | 4.6 | 6.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.10 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 254 | 638 | 541 | 61 | 436 | 370 | 166 | 432 | 446 | 188 | 908 | 405 |
| V/C Ratio(X) | 0.82 | 0.18 | 0.22 | 0.54 | 0.32 | 0.81 | 0.78 | 0.72 | 0.72 | 0.79 | 0.33 | 0.43 |
| Avail Cap(c_a), veh/h | 341 | 1030 | 873 | 204 | 887 | 752 | 259 | 788 | 815 | 259 | 1577 | 703 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 27.2 | 15.1 | 15.3 | 31.0 | 20.8 | 23.7 | 29.0 | 22.7 | 22.7 | 28.5 | 19.8 | 20.3 |
| Incr Delay (d2), s/veh | 10.7 | 0.1 | 0.2 | 7.1 | 0.4 | 4.2 | 7.9 | 2.2 | 2.2 | 10.8 | 0.2 | 0.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.7 | 1.1 | 1.2 | 0.6 | 1.7 | 4.4 | 2.2 | 4.3 | 4.4 | 2.7 | 1.8 | 2.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 37.9 | 15.2 | 15.5 | 38.1 | 21.2 | 27.8 | 36.8 | 24.9 | 24.9 | 39.3 | 20.0 | 21.1 |
| LnGrp LOS | D | B | B | D | C | C | D | C | C | D | C | C |
| Approach Vol, veh/h | | 442 | | | 470 | | | 761 | | | 627 | |
| Approach Delay, s/veh | | 25.9 | | | 26.6 | | | 26.9 | | | 24.9 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 11.4 | 20.4 | 6.8 | 26.8 | 10.6 | 21.2 | 13.8 | 19.7 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 9.5 | 29.0 | 7.5 | 36.0 | 9.5 | 29.0 | 12.5 | 31.0 |
| Max Q Clear Time (g_c+I1), s | 7.3 | 12.5 | 3.2 | 5.5 | 6.7 | 8.0 | 9.4 | 13.6 |
| Green Ext Time (p_c), s | 0.1 | 3.4 | 0.0 | 1.0 | 0.1 | 2.4 | 0.2 | 1.6 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 26.1 |
| HCM 6th LOS | C |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 120 | 40 | 20 | 120 | 110 | 50 |
| Future Volume (veh/h) | 136 | 67 | 22 | 169 | 203 | 69 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 148 | 73 | 24 | 184 | 221 | 75 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 449 | 211 | 55 | 1441 | 404 | 360 |
| Arrive On Green | 0.19 | 0.19 | 0.03 | 0.41 | 0.23 | 0.23 |
| Sat Flow, veh/h | 2440 | 1102 | 1781 | 3647 | 1781 | 1585 |
| Grp Volume(v), veh/h | 110 | 111 | 24 | 184 | 221 | 75 |
| Grp Sat Flow(s),veh/h/ln | 1777 | 1672 | 1781 | 1777 | 1781 | 1585 |
| Q Serve(g_s), s | 1.3 | 1.4 | 0.3 | 0.8 | 2.7 | 0.9 |
| Cycle Q Clear(g_c), s | 1.3 | 1.4 | 0.3 | 0.8 | 2.7 | 0.9 |
| Prop In Lane | | 0.66 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 340 | 320 | 55 | 1441 | 404 | 360 |
| V/C Ratio(X) | 0.32 | 0.35 | 0.44 | 0.13 | 0.55 | 0.21 |
| Avail Cap(c_a), veh/h | 1850 | 1740 | 691 | 5730 | 1927 | 1715 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 8.5 | 8.6 | 11.7 | 4.6 | 8.4 | 7.7 |
| Incr Delay (d2), s/veh | 0.5 | 0.6 | 5.4 | 0.0 | 1.2 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.3 | 0.3 | 0.2 | 0.1 | 0.8 | 0.2 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 9.1 | 9.2 | 17.1 | 4.6 | 9.5 | 8.0 |
| LnGrp LOS | A | A | B | A | A | A |
| Approach Vol, veh/h | 221 | | | 208 | 296 | |
| Approach Delay, s/veh | 9.2 | | | 6.0 | 9.1 | |
| Approach LOS | A | | | A | A | |

| Timer - Assigned Phs | 1 | 2 | | | | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.3 | 9.2 | | | | 14.4 | 10.1 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | | | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 9.5 | 25.5 | | | | 39.5 | 26.5 |
| Max Q Clear Time (g_c+I1), s | 2.3 | 3.4 | | | | 2.8 | 4.7 |
| Green Ext Time (p_c), s | 0.0 | 1.2 | | | | 1.2 | 0.9 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 8.2 |
| HCM 6th LOS | A |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 10 | 210 | 20 | 120 | 90 | 10 | 75 | 50 | 320 | 10 | 10 | 10 |
| Future Volume (veh/h) | 10 | 229 | 36 | 124 | 92 | 10 | 124 | 53 | 333 | 10 | 11 | 10 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 11 | 249 | 39 | 135 | 100 | 11 | 135 | 58 | 362 | 11 | 12 | 11 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 26 | 530 | 236 | 174 | 752 | 81 | 174 | 552 | 493 | 26 | 427 | 341 |
| Arrive On Green | 0.01 | 0.15 | 0.15 | 0.10 | 0.23 | 0.23 | 0.10 | 0.31 | 0.31 | 0.01 | 0.23 | 0.23 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 1781 | 3234 | 351 | 1781 | 1777 | 1585 | 1781 | 1879 | 1498 |
| Grp Volume(v), veh/h | 11 | 249 | 39 | 135 | 54 | 57 | 135 | 58 | 362 | 11 | 11 | 12 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1781 | 1777 | 1807 | 1781 | 1777 | 1585 | 1781 | 1777 | 1601 |
| Q Serve(g_s), s | 0.3 | 2.7 | 0.9 | 3.1 | 1.0 | 1.0 | 3.1 | 1.0 | 8.6 | 0.3 | 0.2 | 0.2 |
| Cycle Q Clear(g_c), s | 0.3 | 2.7 | 0.9 | 3.1 | 1.0 | 1.0 | 3.1 | 1.0 | 8.6 | 0.3 | 0.2 | 0.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.19 | 1.00 | | 1.00 | 1.00 | | 0.94 |
| Lane Grp Cap(c), veh/h | 26 | 530 | 236 | 174 | 413 | 420 | 174 | 552 | 493 | 26 | 404 | 364 |
| V/C Ratio(X) | 0.43 | 0.47 | 0.17 | 0.78 | 0.13 | 0.13 | 0.78 | 0.11 | 0.73 | 0.43 | 0.03 | 0.03 |
| Avail Cap(c_a), veh/h | 318 | 2442 | 1089 | 318 | 1221 | 1242 | 318 | 1187 | 1059 | 318 | 1187 | 1069 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 20.6 | 16.4 | 15.6 | 18.5 | 12.8 | 12.8 | 18.5 | 10.3 | 12.9 | 20.6 | 12.6 | 12.6 |
| Incr Delay (d2), s/veh | 11.0 | 0.6 | 0.3 | 7.2 | 0.1 | 0.1 | 7.2 | 0.1 | 2.1 | 11.0 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.2 | 1.0 | 0.3 | 1.4 | 0.3 | 0.4 | 1.4 | 0.3 | 2.6 | 0.2 | 0.1 | 0.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 31.6 | 17.0 | 15.9 | 25.7 | 12.9 | 12.9 | 25.7 | 10.4 | 15.1 | 31.6 | 12.7 | 12.7 |
| LnGrp LOS | C | B | B | C | B | B | C | B | B | C | B | B |
| Approach Vol, veh/h | | 299 | | | 246 | | | 555 | | | 34 | |
| Approach Delay, s/veh | | 17.4 | | | 19.9 | | | 17.2 | | | 18.8 | |
| Approach LOS | | B | | | B | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.6 | 10.8 | 8.6 | 14.1 | 5.1 | 14.3 | 5.1 | 17.6 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 7.5 | 28.9 | 7.5 | 28.1 | 7.5 | 28.9 | 7.5 | 28.1 |
| Max Q Clear Time (g_c+I1), s | 5.1 | 4.7 | 5.1 | 2.2 | 2.3 | 3.0 | 2.3 | 10.6 |
| Green Ext Time (p_c), s | 0.1 | 1.6 | 0.1 | 0.1 | 0.0 | 0.5 | 0.0 | 2.5 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 17.9 |
| HCM 6th LOS | B |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 300 | 120 | 100 | 20 | 335 | 205 |
| Future Volume (veh/h) | 300 | 121 | 105 | 20 | 338 | 234 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1752 | 1870 | 1870 | 1752 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 326 | 132 | 114 | 22 | 367 | 254 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 10 | 2 | 2 | 10 | 2 | 2 |
| Cap, veh/h | 414 | 168 | 150 | 933 | 479 | 426 |
| Arrive On Green | 0.35 | 0.35 | 0.08 | 0.53 | 0.27 | 0.27 |
| Sat Flow, veh/h | 1185 | 480 | 1781 | 1752 | 1781 | 1585 |
| Grp Volume(v), veh/h | 0 | 458 | 114 | 22 | 367 | 254 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1665 | 1781 | 1752 | 1781 | 1585 |
| Q Serve(g_s), s | 0.0 | 11.2 | 2.8 | 0.3 | 8.6 | 6.3 |
| Cycle Q Clear(g_c), s | 0.0 | 11.2 | 2.8 | 0.3 | 8.6 | 6.3 |
| Prop In Lane | | 0.29 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 0 | 582 | 150 | 933 | 479 | 426 |
| V/C Ratio(X) | 0.00 | 0.79 | 0.76 | 0.02 | 0.77 | 0.60 |
| Avail Cap(c_a), veh/h | 0 | 1322 | 373 | 1931 | 825 | 734 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 13.2 | 20.3 | 5.0 | 15.3 | 14.4 |
| Incr Delay (d2), s/veh | 0.0 | 2.4 | 7.7 | 0.0 | 2.6 | 1.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 3.3 | 1.3 | 0.1 | 3.2 | 2.0 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 15.6 | 28.1 | 5.0 | 17.9 | 15.8 |
| LnGrp LOS | A | B | C | A | B | B |
| Approach Vol, veh/h | 458 | | | 136 | 621 | |
| Approach Delay, s/veh | 15.6 | | | 24.4 | 17.0 | |
| Approach LOS | B | | | C | B | |

| Timer - Assigned Phs | 1 | 2 | | | | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.3 | 20.4 | | | | 28.7 | 16.7 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | | | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 9.5 | 36.0 | | | | 50.0 | 21.0 |
| Max Q Clear Time (g_c+I1), s | 4.8 | 13.2 | | | | 2.3 | 10.6 |
| Green Ext Time (p_c), s | 0.1 | 2.7 | | | | 0.1 | 1.6 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 17.3 |
| HCM 6th LOS | | B |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 100 | 40 | 30 | 40 | 50 | 140 | 30 | 760 | 100 | 70 | 470 | 110 |
| Future Volume (veh/h) | 100 | 40 | 31 | 40 | 50 | 140 | 41 | 1041 | 100 | 70 | 546 | 110 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 109 | 43 | 34 | 43 | 54 | 152 | 45 | 1132 | 109 | 76 | 593 | 120 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 140 | 672 | 298 | 74 | 270 | 241 | 148 | 2212 | 687 | 199 | 2287 | 710 |
| Arrive On Green | 0.08 | 0.19 | 0.19 | 0.04 | 0.15 | 0.15 | 0.04 | 0.43 | 0.43 | 0.06 | 0.45 | 0.45 |
| Sat Flow, veh/h | 1781 | 3554 | 1578 | 1781 | 1777 | 1585 | 3456 | 5106 | 1585 | 3456 | 5106 | 1585 |
| Grp Volume(v), veh/h | 109 | 43 | 34 | 43 | 54 | 152 | 45 | 1132 | 109 | 76 | 593 | 120 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1578 | 1781 | 1777 | 1585 | 1728 | 1702 | 1585 | 1728 | 1702 | 1585 |
| Q Serve(g_s), s | 3.9 | 0.6 | 1.2 | 1.5 | 1.7 | 5.8 | 0.8 | 10.4 | 2.7 | 1.4 | 4.7 | 2.9 |
| Cycle Q Clear(g_c), s | 3.9 | 0.6 | 1.2 | 1.5 | 1.7 | 5.8 | 0.8 | 10.4 | 2.7 | 1.4 | 4.7 | 2.9 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 140 | 672 | 298 | 74 | 270 | 241 | 148 | 2212 | 687 | 199 | 2287 | 710 |
| V/C Ratio(X) | 0.78 | 0.06 | 0.11 | 0.58 | 0.20 | 0.63 | 0.30 | 0.51 | 0.16 | 0.38 | 0.26 | 0.17 |
| Avail Cap(c_a), veh/h | 234 | 2089 | 927 | 234 | 1045 | 932 | 401 | 2212 | 687 | 401 | 2287 | 710 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 29.2 | 21.5 | 21.7 | 30.4 | 24.0 | 25.7 | 30.0 | 13.3 | 11.1 | 29.3 | 11.1 | 10.7 |
| Incr Delay (d2), s/veh | 8.8 | 0.0 | 0.2 | 7.0 | 0.4 | 2.7 | 1.1 | 0.8 | 0.5 | 1.2 | 0.3 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.9 | 0.3 | 0.4 | 0.8 | 0.7 | 2.2 | 0.3 | 3.6 | 0.9 | 0.6 | 1.6 | 1.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 38.0 | 21.6 | 21.9 | 37.4 | 24.3 | 28.4 | 31.1 | 14.2 | 11.6 | 30.5 | 11.4 | 11.2 |
| LnGrp LOS | D | C | C | D | C | C | C | B | B | C | B | B |
| Approach Vol, veh/h | | 186 | | | 249 | | | 1286 | | | 789 | |
| Approach Delay, s/veh | | 31.3 | | | 29.1 | | | 14.6 | | | 13.2 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.2 | 32.5 | 7.2 | 16.7 | 7.3 | 33.5 | 9.6 | 14.3 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 7.5 | 28.0 | 8.5 | 38.0 | 7.5 | 28.0 | 8.5 | 38.0 |
| Max Q Clear Time (g_c+I1), s | 3.4 | 12.4 | 3.5 | 3.2 | 2.8 | 6.7 | 5.9 | 7.8 |
| Green Ext Time (p_c), s | 0.1 | 7.3 | 0.0 | 0.3 | 0.0 | 4.3 | 0.1 | 1.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 16.8 |
| HCM 6th LOS | B |

**Notes**

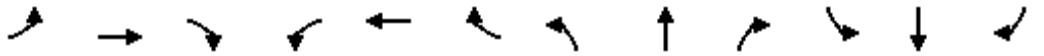
User approved pedestrian interval to be less than phase max green.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 60 | 50 | 90 | 180 | 50 | 40 | 210 | 550 | 220 | 90 | 440 | 60 |
| Future Volume (veh/h) | 60 | 50 | 97 | 195 | 50 | 40 | 254 | 640 | 257 | 90 | 472 | 60 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1752 | 1870 | 1870 | 1870 | 1870 | 1752 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 65 | 54 | 105 | 212 | 54 | 43 | 276 | 696 | 279 | 98 | 513 | 65 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 10 | 2 | 2 | 2 | 2 | 10 | 2 | 2 | 2 |
| Cap, veh/h | 166 | 224 | 189 | 290 | 302 | 255 | 365 | 1215 | 487 | 126 | 1449 | 183 |
| Arrive On Green | 0.05 | 0.12 | 0.12 | 0.09 | 0.16 | 0.16 | 0.11 | 0.49 | 0.49 | 0.07 | 0.46 | 0.46 |
| Sat Flow, veh/h | 3456 | 1870 | 1573 | 3237 | 1870 | 1576 | 3456 | 2474 | 992 | 1781 | 3173 | 401 |
| Grp Volume(v), veh/h | 65 | 54 | 105 | 212 | 54 | 43 | 276 | 500 | 475 | 98 | 286 | 292 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1573 | 1618 | 1870 | 1576 | 1728 | 1777 | 1688 | 1781 | 1777 | 1797 |
| Q Serve(g_s), s | 1.4 | 2.1 | 5.0 | 5.0 | 2.0 | 1.9 | 6.1 | 15.7 | 15.7 | 4.3 | 8.2 | 8.3 |
| Cycle Q Clear(g_c), s | 1.4 | 2.1 | 5.0 | 5.0 | 2.0 | 1.9 | 6.1 | 15.7 | 15.7 | 4.3 | 8.2 | 8.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.59 | 1.00 | | 0.22 |
| Lane Grp Cap(c), veh/h | 166 | 224 | 189 | 290 | 302 | 255 | 365 | 873 | 830 | 126 | 811 | 820 |
| V/C Ratio(X) | 0.39 | 0.24 | 0.56 | 0.73 | 0.18 | 0.17 | 0.76 | 0.57 | 0.57 | 0.78 | 0.35 | 0.36 |
| Avail Cap(c_a), veh/h | 329 | 878 | 738 | 349 | 901 | 760 | 460 | 873 | 830 | 215 | 811 | 820 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 36.4 | 31.4 | 32.7 | 35.0 | 28.5 | 28.5 | 34.3 | 14.2 | 14.2 | 36.0 | 13.9 | 13.9 |
| Incr Delay (d2), s/veh | 1.5 | 0.5 | 2.5 | 6.2 | 0.3 | 0.3 | 5.4 | 2.7 | 2.9 | 9.8 | 1.2 | 1.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.6 | 0.9 | 2.0 | 2.2 | 0.9 | 0.7 | 2.7 | 6.3 | 6.0 | 2.1 | 3.3 | 3.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 37.9 | 32.0 | 35.3 | 41.1 | 28.8 | 28.8 | 39.7 | 16.9 | 17.1 | 45.8 | 15.1 | 15.1 |
| LnGrp LOS | D | C | D | D | C | C | D | B | B | D | B | B |
| Approach Vol, veh/h | | 224 | | | 309 | | | 1251 | | | 676 | |
| Approach Delay, s/veh | | 35.2 | | | 37.3 | | | 22.0 | | | 19.6 | |
| Approach LOS | | D | | | D | | | C | | | B | |

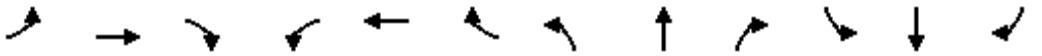
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 10.1 | 43.2 | 11.6 | 14.0 | 12.8 | 40.5 | 8.3 | 17.2 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 9.5 | 37.0 | 8.5 | 37.0 | 10.5 | 36.0 | 7.5 | 38.0 |
| Max Q Clear Time (g_c+I1), s | 6.3 | 17.7 | 7.0 | 7.0 | 8.1 | 10.3 | 3.4 | 4.0 |
| Green Ext Time (p_c), s | 0.1 | 6.3 | 0.1 | 0.6 | 0.2 | 3.5 | 0.0 | 0.4 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 24.5 |
| HCM 6th LOS | C |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 150 | 0 | 190 | 550 | 750 | 0 | 0 | 370 | 380 |
| Future Volume (vph) | 0 | 0 | 0 | 154 | 0 | 190 | 637 | 921 | 0 | 0 | 424 | 380 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Lane Util. Factor | | | | 0.95 | 0.91 | 0.95 | 1.00 | 0.95 | | | 0.95 | 1.00 |
| Frt | | | | 1.00 | 0.89 | 0.85 | 1.00 | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | 0.95 | 0.99 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | 1681 | 1416 | 1395 | 1770 | 3539 | | | 3471 | 1553 |
| Flt Permitted | | | | 0.95 | 0.99 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | 1681 | 1416 | 1395 | 1770 | 3539 | | | 3471 | 1553 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 0 | 167 | 0 | 207 | 692 | 1001 | 0 | 0 | 461 | 413 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 74 | 103 | 0 | 0 | 0 | 0 | 0 | 316 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 130 | 50 | 17 | 692 | 1001 | 0 | 0 | 461 | 97 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 10% | 2% | 2% | 2% | 2% | 4% | 4% |
| Turn Type | | | | Perm | NA | Perm | Prot | NA | | | NA | Perm |
| Protected Phases | | | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | | | | 8 | | 8 | | | | | | 6 |
| Actuated Green, G (s) | | | | 11.6 | 11.6 | 11.6 | 36.2 | 59.4 | | | 18.7 | 18.7 |
| Effective Green, g (s) | | | | 11.6 | 11.6 | 11.6 | 36.2 | 59.4 | | | 18.7 | 18.7 |
| Actuated g/C Ratio | | | | 0.14 | 0.14 | 0.14 | 0.45 | 0.74 | | | 0.23 | 0.23 |
| Clearance Time (s) | | | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Vehicle Extension (s) | | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | | | 243 | 205 | 202 | 800 | 2627 | | | 811 | 363 |
| v/s Ratio Prot | | | | | | | c0.39 | 0.28 | | | c0.13 | |
| v/s Ratio Perm | | | | c0.08 | 0.04 | 0.01 | | | | | | 0.06 |
| v/c Ratio | | | | 0.53 | 0.24 | 0.09 | 0.86 | 0.38 | | | 0.57 | 0.27 |
| Uniform Delay, d1 | | | | 31.7 | 30.3 | 29.6 | 19.7 | 3.7 | | | 27.1 | 25.0 |
| Progression Factor | | | | 1.00 | 1.00 | 1.00 | 0.85 | 0.10 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | | | 2.3 | 0.6 | 0.2 | 7.3 | 0.3 | | | 2.9 | 1.8 |
| Delay (s) | | | | 34.0 | 30.9 | 29.8 | 24.1 | 0.7 | | | 30.0 | 26.8 |
| Level of Service | | | | C | C | C | C | A | | | C | C |
| Approach Delay (s) | | 0.0 | | | 31.6 | | | 10.3 | | | 28.5 | |
| Approach LOS | | A | | | C | | | B | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 18.4 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.72 | | |
| Actuated Cycle Length (s) | 80.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 71.3% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 470 | 0 | 260 | 0 | 0 | 0 | 0 | 830 | 170 | 130 | 390 | 0 |
| Future Volume (vph) | 470 | 0 | 278 | 0 | 0 | 0 | 0 | 1088 | 193 | 130 | 448 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | | | | | 4.5 | 4.5 | 4.5 | 4.5 | |
| Lane Util. Factor | 0.97 | 0.95 | 0.95 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | |
| Frt | 1.00 | 0.85 | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (prot) | 3335 | 1504 | 1504 | | | | | 3539 | 1583 | 1719 | 3539 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (perm) | 3335 | 1504 | 1504 | | | | | 3539 | 1583 | 1719 | 3539 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 511 | 0 | 302 | 0 | 0 | 0 | 0 | 1183 | 210 | 141 | 487 | 0 |
| RTOR Reduction (vph) | 0 | 119 | 119 | 0 | 0 | 0 | 0 | 0 | 106 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 511 | 32 | 32 | 0 | 0 | 0 | 0 | 1183 | 104 | 141 | 487 | 0 |
| Heavy Vehicles (%) | 5% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 5% | 2% | 2% |
| Turn Type | Perm | NA | Perm | | | | | NA | Perm | Prot | NA | |
| Protected Phases | | 4 | | | | | | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | | | | | | 2 | | | |
| Actuated Green, G (s) | 16.9 | 16.9 | 16.9 | | | | | 39.8 | 39.8 | 9.8 | 54.1 | |
| Effective Green, g (s) | 16.9 | 16.9 | 16.9 | | | | | 39.8 | 39.8 | 9.8 | 54.1 | |
| Actuated g/C Ratio | 0.21 | 0.21 | 0.21 | | | | | 0.50 | 0.50 | 0.12 | 0.68 | |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | | | | | 4.5 | 4.5 | 4.5 | 4.5 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 704 | 317 | 317 | | | | | 1760 | 787 | 210 | 2393 | |
| v/s Ratio Prot | | 0.02 | | | | | | c0.33 | | c0.08 | 0.14 | |
| v/s Ratio Perm | c0.15 | | 0.02 | | | | | | 0.07 | | | |
| v/c Ratio | 0.73 | 0.10 | 0.10 | | | | | 0.67 | 0.13 | 0.67 | 0.20 | |
| Uniform Delay, d1 | 29.4 | 25.4 | 25.4 | | | | | 15.2 | 10.8 | 33.6 | 4.9 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | | | | | 1.00 | 1.00 | 1.13 | 0.92 | |
| Incremental Delay, d2 | 3.7 | 0.1 | 0.1 | | | | | 2.1 | 0.3 | 7.2 | 0.2 | |
| Delay (s) | 33.1 | 25.6 | 25.6 | | | | | 17.2 | 11.2 | 45.2 | 4.7 | |
| Level of Service | C | C | C | | | | | B | B | D | A | |
| Approach Delay (s) | | 30.3 | | | 0.0 | | | 16.3 | | | 13.8 | |
| Approach LOS | | C | | | A | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 19.8 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.69 | | |
| Actuated Cycle Length (s) | 80.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 71.3% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.7 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↑ | ↑ | | ↰ | ↱ |
| Traffic Vol, veh/h | 0 | 505 | 5 | 0 | 5 | 115 |
| Future Vol, veh/h | 0 | 534 | 5 | 0 | 5 | 120 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 25 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 580 | 5 | 0 | 5 | 130 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | 585 | 5 |
| Stage 1 | - | - | - | - | 5 | - |
| Stage 2 | - | - | - | - | 580 | - |
| Critical Hdwy | - | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | 0 | 473 | 1078 |
| Stage 1 | 0 | - | - | 0 | 1018 | - |
| Stage 2 | 0 | - | - | 0 | 560 | - |
| Platoon blocked, % | | - | - | | | |
| Mov Cap-1 Maneuver | - | - | - | - | 473 | 1078 |
| Mov Cap-2 Maneuver | - | - | - | - | 473 | - |
| Stage 1 | - | - | - | - | 1018 | - |
| Stage 2 | - | - | - | - | 560 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 9 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBT | WBT | SBLn1 | SBLn2 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | 473 | 1078 |
| HCM Lane V/C Ratio | - | - | 0.011 | 0.121 |
| HCM Control Delay (s) | - | - | 12.7 | 8.8 |
| HCM Lane LOS | - | - | B | A |
| HCM 95th %tile Q(veh) | - | - | 0 | 0.4 |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 310 | 0 | 60 | 130 | 100 | 0 | 0 | 170 | 50 |
| Future Volume (veh/h) | 0 | 0 | 0 | 337 | 0 | 60 | 161 | 121 | 0 | 0 | 188 | 50 |
| Initial Q (Qb), veh | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | | | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | | | | 1870 | 0 | 1870 | 1870 | 1870 | 0 | 0 | 1870 | 1870 |
| Adj Flow Rate, veh/h | | | | 366 | 0 | 65 | 175 | 132 | 0 | 0 | 204 | 54 |
| Peak Hour Factor | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | | | | 2 | 0 | 2 | 2 | 2 | 0 | 0 | 2 | 2 |
| Cap, veh/h | | | | 496 | 0 | 442 | 226 | 1548 | 0 | 0 | 463 | 120 |
| Arrive On Green | | | | 0.28 | 0.00 | 0.28 | 0.13 | 0.44 | 0.00 | 0.00 | 0.17 | 0.17 |
| Sat Flow, veh/h | | | | 1781 | 0 | 1585 | 1781 | 3647 | 0 | 0 | 2889 | 722 |
| Grp Volume(v), veh/h | | | | 366 | 0 | 65 | 175 | 132 | 0 | 0 | 128 | 130 |
| Grp Sat Flow(s),veh/h/ln | | | | 1781 | 0 | 1585 | 1781 | 1777 | 0 | 0 | 1777 | 1740 |
| Q Serve(g_s), s | | | | 5.9 | 0.0 | 1.0 | 3.0 | 0.7 | 0.0 | 0.0 | 2.0 | 2.1 |
| Cycle Q Clear(g_c), s | | | | 5.9 | 0.0 | 1.0 | 3.0 | 0.7 | 0.0 | 0.0 | 2.0 | 2.1 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 0.41 |
| Lane Grp Cap(c), veh/h | | | | 496 | 0 | 442 | 226 | 1548 | 0 | 0 | 295 | 289 |
| V/C Ratio(X) | | | | 0.74 | 0.00 | 0.15 | 0.77 | 0.09 | 0.00 | 0.00 | 0.43 | 0.45 |
| Avail Cap(c_a), veh/h | | | | 1159 | 0 | 1032 | 424 | 3441 | 0 | 0 | 1044 | 1022 |
| HCM Platoon Ratio | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | | | | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | | | | 10.3 | 0.0 | 8.5 | 13.3 | 5.2 | 0.0 | 0.0 | 11.8 | 11.8 |
| Incr Delay (d2), s/veh | | | | 2.2 | 0.0 | 0.2 | 5.6 | 0.0 | 0.0 | 0.0 | 1.0 | 1.1 |
| Initial Q Delay(d3),s/veh | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | | | | 1.8 | 0.0 | 0.2 | 1.2 | 0.1 | 0.0 | 0.0 | 0.6 | 0.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 12.5 | 0.0 | 8.7 | 18.9 | 5.2 | 0.0 | 0.0 | 12.8 | 12.9 |
| LnGrp LOS | | | | B | A | A | B | A | A | A | B | B |
| Approach Vol, veh/h | | | | | 431 | | | 307 | | | 258 | |
| Approach Delay, s/veh | | | | | 11.9 | | | 13.0 | | | 12.9 | |
| Approach LOS | | | | | B | | | B | | | B | |

| Timer - Assigned Phs | 2 | | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 18.2 | | 8.5 | 9.7 | | 13.3 |
| Change Period (Y+Rc), s | 4.5 | | 4.5 | 4.5 | | 4.5 |
| Max Green Setting (Gmax), s | 30.5 | | 7.5 | 18.5 | | 20.5 |
| Max Q Clear Time (g_c+I1), s | 2.7 | | 5.0 | 4.1 | | 7.9 |
| Green Ext Time (p_c), s | 0.7 | | 0.1 | 1.1 | | 1.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 12.5 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 4.6 |
| Intersection LOS | A |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Entry Lanes | 1 | 1 | 1 | 1 |
| Conflicting Circle Lanes | 1 | 1 | 1 | 1 |
| Adj Approach Flow, veh/h | 174 | 174 | 185 | 185 |
| Demand Flow Rate, veh/h | 177 | 177 | 189 | 189 |
| Vehicles Circulating, veh/h | 145 | 244 | 189 | 145 |
| Vehicles Exiting, veh/h | 189 | 134 | 133 | 276 |
| Ped Vol Crossing Leg, #/h | 0 | 0 | 0 | 0 |
| Ped Cap Adj | 1.000 | 1.000 | 1.000 | 1.000 |
| Approach Delay, s/veh | 4.4 | 4.9 | 4.7 | 4.5 |
| Approach LOS | A | A | A | A |

| Lane | Left | Left | Left | Left |
|---|---|---|---|---|
| Designated Moves | LTR | LTR | LTR | LTR |
| Assumed Moves | LTR | LTR | LTR | LTR |
| RT Channelized | | | | |
| Lane Util | 1.000 | 1.000 | 1.000 | 1.000 |
| Follow-Up Headway, s | 2.609 | 2.609 | 2.609 | 2.609 |
| Critical Headway, s | 4.976 | 4.976 | 4.976 | 4.976 |
| Entry Flow, veh/h | 177 | 177 | 189 | 189 |
| Cap Entry Lane, veh/h | 1190 | 1076 | 1138 | 1190 |
| Entry HV Adj Factor | 0.984 | 0.983 | 0.980 | 0.979 |
| Flow Entry, veh/h | 174 | 174 | 185 | 185 |
| Cap Entry, veh/h | 1172 | 1058 | 1115 | 1165 |
| V/C Ratio | 0.149 | 0.165 | 0.166 | 0.159 |
| Control Delay, s/veh | 4.4 | 4.9 | 4.7 | 4.5 |
| LOS | A | A | A | A |
| 95th %tile Queue, veh | 1 | 1 | 1 | 1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.7 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 19 | 144 | 265 | 30 | 0 | 76 |
| Future Vol, veh/h | 19 | 144 | 265 | 30 | 0 | 76 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 100 | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 21 | 157 | 288 | 33 | 0 | 83 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 321 | 0 | - | 0 | - | 161 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | 4.14 | - | - | - | - | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | 2.22 | - | - | - | - | 3.32 |
| Pot Cap-1 Maneuver | 1236 | - | - | - | 0 | 855 |
| Stage 1 | - | - | - | - | 0 | - |
| Stage 2 | - | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1236 | - | - | - | - | 855 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.9 | 0 | 9.7 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1236 | - | - | - | 855 |
| HCM Lane V/C Ratio | 0.017 | - | - | - | 0.097 |
| HCM Control Delay (s) | 8 | - | - | - | 9.7 |
| HCM Lane LOS | A | - | - | - | A |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.3 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 10 | 134 | 256 | 22 | 0 | 39 |
| Future Vol, veh/h | 10 | 134 | 256 | 22 | 0 | 39 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 100 | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 146 | 278 | 24 | 0 | 42 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 302 | 0 | - | 0 | - | 151 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | 4.14 | - | - | - | - | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | 2.22 | - | - | - | - | 3.32 |
| Pot Cap-1 Maneuver | 1256 | - | - | - | 0 | 868 |
| Stage 1 | - | - | - | - | 0 | - |
| Stage 2 | - | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1256 | - | - | - | - | 868 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.5 | 0 | 9.4 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1256 | - | - | - | 868 |
| HCM Lane V/C Ratio | 0.009 | - | - | - | 0.049 |
| HCM Control Delay (s) | 7.9 | - | - | - | 9.4 |
| HCM Lane LOS | A | - | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.2 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 9.2 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 20 | 114 | 251 | 35 | 92 | 27 |
| Future Vol, veh/h | 20 | 114 | 251 | 35 | 92 | 27 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 22 | 124 | 273 | 38 | 100 | 29 |
| Number of Lanes | 1 | 2 | 2 | 0 | 1 | 1 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 2 | 3 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 2 | 0 | 2 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 2 | 3 |
| HCM Control Delay | 8.1 | 9.5 | 9.7 |
| HCM LOS | A | A | A |

| Lane | EBLn1 | EBLn2 | EBLn3 | WBLn1 | WBLn2 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 0% | 0% | 0% | 100% | 0% |
| Vol Thru, % | 0% | 100% | 100% | 100% | 71% | 0% | 0% |
| Vol Right, % | 0% | 0% | 0% | 0% | 29% | 0% | 100% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 20 | 57 | 57 | 167 | 119 | 92 | 27 |
| LT Vol | 20 | 0 | 0 | 0 | 0 | 92 | 0 |
| Through Vol | 0 | 57 | 57 | 167 | 84 | 0 | 0 |
| RT Vol | 0 | 0 | 0 | 0 | 35 | 0 | 27 |
| Lane Flow Rate | 22 | 62 | 62 | 182 | 129 | 100 | 29 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.037 | 0.096 | 0.066 | 0.264 | 0.18 | 0.171 | 0.041 |
| Departure Headway (Hd) | 6.077 | 5.574 | 3.828 | 5.233 | 5.025 | 6.171 | 4.969 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 587 | 641 | 928 | 684 | 711 | 579 | 715 |
| Service Time | 3.832 | 3.329 | 1.583 | 2.982 | 2.775 | 3.938 | 2.736 |
| HCM Lane V/C Ratio | 0.037 | 0.097 | 0.067 | 0.266 | 0.181 | 0.173 | 0.041 |
| HCM Control Delay | 9.1 | 8.9 | 6.9 | 9.9 | 8.9 | 10.2 | 8 |
| HCM Lane LOS | A | A | A | A | A | B | A |
| HCM 95th-tile Q | 0.1 | 0.3 | 0.2 | 1.1 | 0.7 | 0.6 | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 35 | 171 | 209 | 9 | 0 | 77 |
| Future Vol, veh/h | 35 | 171 | 209 | 9 | 0 | 77 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 100 | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 38 | 186 | 227 | 10 | 0 | 84 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 237 | 0 | - | 0 | - | 119 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | 4.14 | - | - | - | - | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | 2.22 | - | - | - | - | 3.32 |
| Pot Cap-1 Maneuver | 1327 | - | - | - | 0 | 910 |
| Stage 1 | - | - | - | - | 0 | - |
| Stage 2 | - | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1327 | - | - | - | - | 910 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 1.3 | 0 | 9.4 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1327 | - | - | - | 910 |
| HCM Lane V/C Ratio | 0.029 | - | - | - | 0.092 |
| HCM Control Delay (s) | 7.8 | - | - | - | 9.4 |
| HCM Lane LOS | A | - | - | - | A |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.3 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.9 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 42 | 119 | 10 | 10 | 155 | 23 | 10 | 10 | 10 | 51 | 10 | 53 |
| Future Vol, veh/h | 42 | 119 | 10 | 10 | 155 | 23 | 10 | 10 | 10 | 51 | 10 | 53 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 46 | 129 | 11 | 11 | 168 | 25 | 11 | 11 | 11 | 55 | 11 | 58 |
| Number of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 1 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 3 | 3 | 3 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 3 | 2 | 3 | 3 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 3 | 3 | 3 |
| HCM Control Delay | 8.9 | 8.9 | 8.7 | 8.8 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | NBLn2 | EBLn1 | EBLn2 | EBLn3 | WBLn1 | WBLn2 | WBLn3 | SBLn1 | SBLn2 | SBLn3 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 100% | 0% | 0% | 100% | 0% | 0% | 100% | 0% | 0% |
| Vol Thru, % | 0% | 50% | 0% | 100% | 80% | 0% | 100% | 69% | 0% | 100% | 0% |
| Vol Right, % | 0% | 50% | 0% | 0% | 20% | 0% | 0% | 31% | 0% | 0% | 100% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 10 | 20 | 42 | 79 | 50 | 10 | 103 | 75 | 51 | 10 | 53 |
| LT Vol | 10 | 0 | 42 | 0 | 0 | 10 | 0 | 0 | 51 | 0 | 0 |
| Through Vol | 0 | 10 | 0 | 79 | 40 | 0 | 103 | 52 | 0 | 10 | 0 |
| RT Vol | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 23 | 0 | 0 | 53 |
| Lane Flow Rate | 11 | 22 | 46 | 86 | 54 | 11 | 112 | 81 | 55 | 11 | 58 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.019 | 0.033 | 0.075 | 0.129 | 0.079 | 0.018 | 0.168 | 0.116 | 0.094 | 0.017 | 0.079 |
| Departure Headway (Hd) | 6.301 | 5.451 | 5.896 | 5.395 | 5.253 | 5.87 | 5.369 | 5.153 | 6.122 | 5.623 | 4.923 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 565 | 652 | 605 | 661 | 679 | 608 | 665 | 692 | 583 | 633 | 723 |
| Service Time | 4.075 | 3.225 | 3.654 | 3.152 | 3.011 | 3.625 | 3.124 | 2.907 | 3.886 | 3.386 | 2.687 |
| HCM Lane V/C Ratio | 0.019 | 0.034 | 0.076 | 0.13 | 0.08 | 0.018 | 0.168 | 0.117 | 0.094 | 0.017 | 0.08 |
| HCM Control Delay | 9.2 | 8.4 | 9.1 | 9 | 8.5 | 8.7 | 9.2 | 8.6 | 9.5 | 8.5 | 8.1 |
| HCM Lane LOS | A | A | A | A | A | A | A | A | A | A | A |
| HCM 95th-tile Q | 0.1 | 0.1 | 0.2 | 0.4 | 0.3 | 0.1 | 0.6 | 0.4 | 0.3 | 0.1 | 0.3 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 45 | 75 | 0 |
| Future Vol, veh/h | 61 | 21 | 23 | 52 | 81 | 22 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 66 | 23 | 25 | 57 | 88 | 24 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 207 | 100 | 112 | 0 | - | 0 |
| Stage 1 | 100 | - | - | - | - | - |
| Stage 2 | 107 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 781 | 956 | 1478 | - | - | - |
| Stage 1 | 924 | - | - | - | - | - |
| Stage 2 | 917 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 768 | 956 | 1478 | - | - | - |
| Mov Cap-2 Maneuver | 768 | - | - | - | - | - |
| Stage 1 | 908 | - | - | - | - | - |
| Stage 2 | 917 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 10 | 2.3 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1478 | - | 809 | - | - |
| HCM Lane V/C Ratio | 0.017 | - | 0.11 | - | - |
| HCM Control Delay (s) | 7.5 | 0 | 10 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 0.4 | - | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.7 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 0 | 30 | 0 |
| Future Vol, veh/h | 8 | 21 | 1 | 5 | 18 | 39 | 1 | 105 | 5 | 10 | 48 | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 9 | 23 | 1 | 5 | 20 | 42 | 1 | 114 | 5 | 11 | 52 | 1 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 7.6 | 7.3 | 7.9 | 7.7 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 1% | 27% | 8% | 17% |
| Vol Thru, % | 95% | 70% | 29% | 81% |
| Vol Right, % | 5% | 3% | 63% | 2% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 111 | 30 | 62 | 59 |
| LT Vol | 1 | 8 | 5 | 10 |
| Through Vol | 105 | 21 | 18 | 48 |
| RT Vol | 5 | 1 | 39 | 1 |
| Lane Flow Rate | 121 | 33 | 67 | 64 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.138 | 0.04 | 0.075 | 0.075 |
| Departure Headway (Hd) | 4.132 | 4.446 | 4.018 | 4.225 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 859 | 810 | 897 | 838 |
| Service Time | 2.199 | 2.448 | 2.019 | 2.303 |
| HCM Lane V/C Ratio | 0.141 | 0.041 | 0.075 | 0.076 |
| HCM Control Delay | 7.9 | 7.6 | 7.3 | 7.7 |
| HCM Lane LOS | A | A | A | A |
| HCM 95th-tile Q | 0.5 | 0.1 | 0.2 | 0.2 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.5 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 0 | 30 | 0 |
| Future Vol, veh/h | 25 | 21 | 13 | 5 | 18 | 40 | 4 | 46 | 5 | 10 | 36 | 8 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 27 | 23 | 14 | 5 | 20 | 43 | 4 | 50 | 5 | 11 | 39 | 9 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 7.6 | 7.2 | 7.6 | 7.5 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 7% | 42% | 8% | 19% |
| Vol Thru, % | 84% | 36% | 29% | 67% |
| Vol Right, % | 9% | 22% | 63% | 15% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 55 | 59 | 63 | 54 |
| LT Vol | 4 | 25 | 5 | 10 |
| Through Vol | 46 | 21 | 18 | 36 |
| RT Vol | 5 | 13 | 40 | 8 |
| Lane Flow Rate | 60 | 64 | 68 | 59 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.069 | 0.074 | 0.073 | 0.068 |
| Departure Headway (Hd) | 4.169 | 4.144 | 3.822 | 4.158 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 850 | 855 | 924 | 852 |
| Service Time | 2.24 | 2.217 | 1.9 | 2.229 |
| HCM Lane V/C Ratio | 0.071 | 0.075 | 0.074 | 0.069 |
| HCM Control Delay | 7.6 | 7.6 | 7.2 | 7.5 |
| HCM Lane LOS | A | A | A | A |
| HCM 95th-tile Q | 0.2 | 0.2 | 0.2 | 0.2 |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 90 | 15 | 25 | 10 | 25 | 10 | 100 | 165 | 10 | 25 | 140 | 25 |
| Future Volume (veh/h) | 139 | 15 | 26 | 10 | 25 | 10 | 100 | 165 | 10 | 25 | 140 | 63 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 151 | 16 | 28 | 11 | 27 | 11 | 109 | 179 | 11 | 27 | 152 | 68 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 226 | 371 | 315 | 26 | 161 | 137 | 169 | 412 | 349 | 59 | 297 | 251 |
| Arrive On Green | 0.13 | 0.20 | 0.20 | 0.01 | 0.09 | 0.09 | 0.09 | 0.22 | 0.22 | 0.03 | 0.16 | 0.16 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Grp Volume(v), veh/h | 151 | 16 | 28 | 11 | 27 | 11 | 109 | 179 | 11 | 27 | 152 | 68 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Q Serve(g_s), s | 2.7 | 0.2 | 0.5 | 0.2 | 0.5 | 0.2 | 2.0 | 2.8 | 0.2 | 0.5 | 2.5 | 1.3 |
| Cycle Q Clear(g_c), s | 2.7 | 0.2 | 0.5 | 0.2 | 0.5 | 0.2 | 2.0 | 2.8 | 0.2 | 0.5 | 2.5 | 1.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 226 | 371 | 315 | 26 | 161 | 137 | 169 | 412 | 349 | 59 | 297 | 251 |
| V/C Ratio(X) | 0.67 | 0.04 | 0.09 | 0.43 | 0.17 | 0.08 | 0.65 | 0.43 | 0.03 | 0.46 | 0.51 | 0.27 |
| Avail Cap(c_a), veh/h | 555 | 1331 | 1128 | 396 | 1164 | 987 | 396 | 1275 | 1081 | 396 | 1275 | 1081 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 14.1 | 10.9 | 11.0 | 16.5 | 14.3 | 14.2 | 14.7 | 11.3 | 10.3 | 16.0 | 13.0 | 12.5 |
| Incr Delay (d2), s/veh | 3.4 | 0.0 | 0.1 | 10.7 | 0.5 | 0.2 | 4.1 | 0.7 | 0.0 | 5.4 | 1.4 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.8 | 0.8 | 0.1 | 0.2 | 0.8 | 0.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 17.5 | 11.0 | 11.2 | 27.2 | 14.8 | 14.4 | 18.8 | 12.1 | 10.4 | 21.4 | 14.4 | 13.0 |
| LnGrp LOS | B | B | B | C | B | B | B | B | B | C | B | B |
| Approach Vol, veh/h | | 195 | | | 49 | | | 299 | | | 247 | |
| Approach Delay, s/veh | | 16.0 | | | 17.5 | | | 14.5 | | | 14.8 | |
| Approach LOS | | B | | | B | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.6 | 11.9 | 5.0 | 11.2 | 7.7 | 9.8 | 8.8 | 7.4 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 7.5 | 23.0 | 7.5 | 24.0 | 7.5 | 23.0 | 10.5 | 21.0 |
| Max Q Clear Time (g_c+I1), s | 2.5 | 4.8 | 2.2 | 2.5 | 4.0 | 4.5 | 4.7 | 2.5 |
| Green Ext Time (p_c), s | 0.0 | 0.8 | 0.0 | 0.1 | 0.1 | 0.8 | 0.2 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 15.1 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.7 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 15 | 385 | 35 | 20 | 55 | 80 |
| Future Vol, veh/h | 22 | 385 | 100 | 23 | 55 | 101 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 400 | - | - | 300 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 24 | 418 | 109 | 25 | 60 | 110 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 352 | 122 | 0 | 0 | 134 | 0 |
| Stage 1 | 122 | - | - | - | - | - |
| Stage 2 | 230 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 646 | 929 | - | - | 1451 | - |
| Stage 1 | 903 | - | - | - | - | - |
| Stage 2 | 808 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 620 | 929 | - | - | 1451 | - |
| Mov Cap-2 Maneuver | 620 | - | - | - | - | - |
| Stage 1 | 903 | - | - | - | - | - |
| Stage 2 | 775 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 11.9 | 0 | 2.7 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 620 | 929 | 1451 | - |
| HCM Lane V/C Ratio | - | - | 0.039 | 0.45 | 0.041 | - |
| HCM Control Delay (s) | - | - | 11 | 12 | 7.6 | - |
| HCM Lane LOS | - | - | B | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 0.1 | 2.4 | 0.1 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 30 | 5 | 5 | 415 | 130 | 20 |
| Future Vol, veh/h | 30 | 5 | 5 | 480 | 151 | 20 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 33 | 5 | 5 | 522 | 164 | 22 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 707 | 175 | 186 | 0 | - | 0 |
| Stage 1 | 175 | - | - | - | - | - |
| Stage 2 | 532 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 402 | 868 | 1388 | - | - | - |
| Stage 1 | 855 | - | - | - | - | - |
| Stage 2 | 589 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 400 | 868 | 1388 | - | - | - |
| Mov Cap-2 Maneuver | 400 | - | - | - | - | - |
| Stage 1 | 851 | - | - | - | - | - |
| Stage 2 | 589 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 14.1 | 0.1 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1388 | - | 433 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | 0.088 | - | - |
| HCM Control Delay (s) | 7.6 | 0 | 14.1 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.3 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.9 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 15 | 5 | 5 | 40 | 70 | 25 |
| Future Vol, veh/h | 15 | 5 | 5 | 108 | 98 | 25 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 100 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 5 | 5 | 117 | 107 | 27 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 248 | 121 | 134 | 0 | - | 0 |
| Stage 1 | 121 | - | - | - | - | - |
| Stage 2 | 127 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 740 | 930 | 1451 | - | - | - |
| Stage 1 | 904 | - | - | - | - | - |
| Stage 2 | 899 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 737 | 930 | 1451 | - | - | - |
| Mov Cap-2 Maneuver | 737 | - | - | - | - | - |
| Stage 1 | 900 | - | - | - | - | - |
| Stage 2 | 899 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.7 | 0.3 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1451 | - | 737 | 930 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | 0.022 | 0.006 | - | - |
| HCM Control Delay (s) | 7.5 | 0 | 10 | 8.9 | - | - |
| HCM Lane LOS | A | A | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | 0 | - | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.9 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 30 | 5 | 5 | 5 | 5 | 40 | 5 | 90 | 5 | 20 | 25 | 15 |
| Future Vol, veh/h | 30 | 5 | 5 | 5 | 5 | 40 | 5 | 202 | 5 | 20 | 54 | 15 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 33 | 5 | 5 | 5 | 5 | 43 | 5 | 220 | 5 | 22 | 59 | 16 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 1 | 1 |
| HCM Control Delay | 8.2 | 7.7 | 9.6 | 8.2 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 75% | 10% | 100% | 0% |
| Vol Thru, % | 0% | 98% | 12% | 10% | 0% | 78% |
| Vol Right, % | 0% | 2% | 12% | 80% | 0% | 22% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 5 | 207 | 40 | 50 | 20 | 69 |
| LT Vol | 5 | 0 | 30 | 5 | 20 | 0 |
| Through Vol | 0 | 202 | 5 | 5 | 0 | 54 |
| RT Vol | 0 | 5 | 5 | 40 | 0 | 15 |
| Lane Flow Rate | 5 | 225 | 43 | 54 | 22 | 75 |
| Geometry Grp | 7 | 7 | 2 | 2 | 7 | 7 |
| Degree of Util (X) | 0.008 | 0.303 | 0.059 | 0.065 | 0.033 | 0.1 |
| Departure Headway (Hd) | 5.363 | 4.844 | 4.868 | 4.325 | 5.453 | 4.798 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 671 | 747 | 737 | 829 | 658 | 749 |
| Service Time | 3.063 | 2.544 | 2.892 | 2.348 | 3.173 | 2.518 |
| HCM Lane V/C Ratio | 0.007 | 0.301 | 0.058 | 0.065 | 0.033 | 0.1 |
| HCM Control Delay | 8.1 | 9.6 | 8.2 | 7.7 | 8.4 | 8.1 |
| HCM Lane LOS | A | A | A | A | A | A |
| HCM 95th-tile Q | 0 | 1.3 | 0.2 | 0.2 | 0.1 | 0.3 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.4 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 25 | 5 | 10 | 10 | 5 | 35 | 10 | 40 | 10 | 15 | 10 | 10 |
| Future Vol, veh/h | 25 | 5 | 10 | 10 | 5 | 35 | 10 | 152 | 10 | 15 | 39 | 10 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 27 | 5 | 11 | 11 | 5 | 38 | 11 | 165 | 11 | 16 | 42 | 11 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 1 | 1 |
| HCM Control Delay | 7.9 | 7.5 | 8.9 | 7.9 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 62% | 20% | 100% | 0% |
| Vol Thru, % | 0% | 94% | 12% | 10% | 0% | 80% |
| Vol Right, % | 0% | 6% | 25% | 70% | 0% | 20% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 10 | 162 | 40 | 50 | 15 | 49 |
| LT Vol | 10 | 0 | 25 | 10 | 15 | 0 |
| Through Vol | 0 | 152 | 5 | 5 | 0 | 39 |
| RT Vol | 0 | 10 | 10 | 35 | 0 | 10 |
| Lane Flow Rate | 11 | 176 | 43 | 54 | 16 | 53 |
| Geometry Grp | 7 | 7 | 2 | 2 | 7 | 7 |
| Degree of Util (X) | 0.016 | 0.23 | 0.055 | 0.064 | 0.025 | 0.071 |
| Departure Headway (Hd) | 5.243 | 4.698 | 4.595 | 4.23 | 5.412 | 4.766 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 676 | 755 | 783 | 851 | 664 | 754 |
| Service Time | 3.029 | 2.484 | 2.603 | 2.237 | 3.123 | 2.477 |
| HCM Lane V/C Ratio | 0.016 | 0.233 | 0.055 | 0.063 | 0.024 | 0.07 |
| HCM Control Delay | 8.1 | 8.9 | 7.9 | 7.5 | 8.3 | 7.8 |
| HCM Lane LOS | A | A | A | A | A | A |
| HCM 95th-tile Q | 0 | 0.9 | 0.2 | 0.2 | 0.1 | 0.2 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↔ | | | ↔ | | ↰ | ↱ | | ↰ | ↱ | |
| Traffic Vol, veh/h | 20 | 5 | 10 | 10 | 5 | 20 | 10 | 20 | 10 | 10 | 10 | 10 |
| Future Vol, veh/h | 20 | 5 | 10 | 10 | 5 | 20 | 10 | 132 | 10 | 10 | 39 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 75 | - | - | 75 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 22 | 5 | 11 | 11 | 5 | 22 | 11 | 143 | 11 | 11 | 42 | 11 |

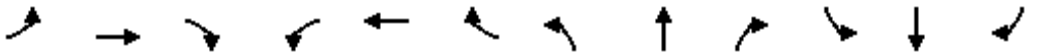
| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 254 | 246 | 48 | 249 | 246 | 149 | 53 | 0 | 0 | 154 | 0 | 0 |
| Stage 1 | 70 | 70 | - | 171 | 171 | - | - | - | - | - | - | - |
| Stage 2 | 184 | 176 | - | 78 | 75 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 699 | 656 | 1021 | 705 | 656 | 898 | 1553 | - | - | 1426 | - | - |
| Stage 1 | 940 | 837 | - | 831 | 757 | - | - | - | - | - | - | - |
| Stage 2 | 818 | 753 | - | 931 | 833 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 670 | 646 | 1021 | 685 | 646 | 898 | 1553 | - | - | 1426 | - | - |
| Mov Cap-2 Maneuver | 670 | 646 | - | 685 | 646 | - | - | - | - | - | - | - |
| Stage 1 | 933 | 830 | - | 825 | 752 | - | - | - | - | - | - | - |
| Stage 2 | 787 | 748 | - | 908 | 826 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 10.1 | 9.8 | 0.5 | 1.3 |
| HCM LOS | B | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1553 | - | - | 739 | 785 | 1426 | - | - |
| HCM Lane V/C Ratio | 0.007 | - | - | 0.051 | 0.048 | 0.008 | - | - |
| HCM Control Delay (s) | 7.3 | - | - | 10.1 | 9.8 | 7.5 | - | - |
| HCM Lane LOS | A | - | - | B | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.2 | 0.2 | 0 | - | - |

# Appendix H:
# Cumulative + Project PM Peak Hour Intersection Level of Service Analysis

FEHR PEERS



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 180 | 270 | 170 | 20 | 120 | 190 | 70 | 300 | 30 | 240 | 510 | 230 |
| Future Volume (veh/h) | 180 | 289 | 170 | 20 | 131 | 270 | 70 | 300 | 30 | 370 | 510 | 230 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 196 | 314 | 185 | 22 | 142 | 293 | 76 | 326 | 33 | 402 | 554 | 250 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 239 | 624 | 529 | 44 | 419 | 355 | 99 | 480 | 48 | 451 | 1227 | 547 |
| Arrive On Green | 0.13 | 0.33 | 0.33 | 0.02 | 0.22 | 0.22 | 0.06 | 0.15 | 0.15 | 0.25 | 0.35 | 0.35 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 3260 | 328 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 196 | 314 | 185 | 22 | 142 | 293 | 76 | 177 | 182 | 402 | 554 | 250 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1777 | 1811 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 8.0 | 10.0 | 6.6 | 0.9 | 4.8 | 13.1 | 3.1 | 7.0 | 7.1 | 16.2 | 9.0 | 9.1 |
| Cycle Q Clear(g_c), s | 8.0 | 10.0 | 6.6 | 0.9 | 4.8 | 13.1 | 3.1 | 7.0 | 7.1 | 16.2 | 9.0 | 9.1 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.18 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 239 | 624 | 529 | 44 | 419 | 355 | 99 | 262 | 267 | 451 | 1227 | 547 |
| V/C Ratio(X) | 0.82 | 0.50 | 0.35 | 0.50 | 0.34 | 0.83 | 0.77 | 0.67 | 0.68 | 0.89 | 0.45 | 0.46 |
| Avail Cap(c_a), veh/h | 334 | 902 | 765 | 215 | 777 | 658 | 298 | 667 | 680 | 573 | 1881 | 839 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.4 | 19.9 | 18.8 | 35.9 | 24.3 | 27.6 | 34.8 | 30.1 | 30.2 | 26.9 | 19.0 | 19.0 |
| Incr Delay (d2), s/veh | 10.7 | 0.6 | 0.4 | 8.7 | 0.5 | 4.9 | 11.8 | 3.0 | 3.1 | 13.6 | 0.3 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.0 | 4.1 | 2.3 | 0.5 | 2.1 | 5.1 | 1.6 | 3.1 | 3.2 | 8.1 | 3.5 | 3.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 42.2 | 20.5 | 19.2 | 44.6 | 24.8 | 32.4 | 46.6 | 33.1 | 33.2 | 40.4 | 19.2 | 19.6 |
| LnGrp LOS | D | C | B | D | C | C | D | C | C | D | B | B |
| Approach Vol, veh/h | | 695 | | | 457 | | | 435 | | | 1206 | |
| Approach Delay, s/veh | | 26.3 | | | 30.6 | | | 35.5 | | | 26.4 | |
| Approach LOS | | C | | | C | | | D | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 23.4 | 15.5 | 6.3 | 29.4 | 8.6 | 30.3 | 14.5 | 21.2 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 24.0 | 28.0 | 9.0 | 36.0 | 12.5 | 39.5 | 14.0 | 31.0 |
| Max Q Clear Time (g_c+I1), s | 18.2 | 9.1 | 2.9 | 12.0 | 5.1 | 11.1 | 10.0 | 15.1 |
| Green Ext Time (p_c), s | 0.7 | 1.9 | 0.0 | 2.4 | 0.1 | 4.8 | 0.2 | 1.6 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 28.5 |
| HCM 6th LOS | C |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 275 | 160 | 30 | 195 | 90 | 45 |
| Future Volume (veh/h) | 331 | 253 | 36 | 226 | 150 | 58 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 360 | 275 | 39 | 246 | 163 | 63 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 661 | 497 | 82 | 1903 | 303 | 270 |
| Arrive On Green | 0.34 | 0.34 | 0.05 | 0.54 | 0.17 | 0.17 |
| Sat Flow, veh/h | 2026 | 1453 | 1781 | 3647 | 1781 | 1585 |
| Grp Volume(v), veh/h | 331 | 304 | 39 | 246 | 163 | 63 |
| Grp Sat Flow(s),veh/h/ln | 1777 | 1609 | 1781 | 1777 | 1781 | 1585 |
| Q Serve(g_s), s | 4.6 | 4.7 | 0.7 | 1.1 | 2.6 | 1.1 |
| Cycle Q Clear(g_c), s | 4.6 | 4.7 | 0.7 | 1.1 | 2.6 | 1.1 |
| Prop In Lane | | 0.90 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 608 | 551 | 82 | 1903 | 303 | 270 |
| V/C Ratio(X) | 0.54 | 0.55 | 0.47 | 0.13 | 0.54 | 0.23 |
| Avail Cap(c_a), veh/h | 1482 | 1342 | 553 | 4590 | 1544 | 1374 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 8.1 | 8.2 | 14.2 | 3.5 | 11.6 | 11.0 |
| Incr Delay (d2), s/veh | 0.8 | 0.9 | 4.2 | 0.0 | 1.5 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.1 | 1.1 | 0.3 | 0.1 | 0.9 | 0.3 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 8.9 | 9.0 | 18.4 | 3.6 | 13.1 | 11.4 |
| LnGrp LOS | A | A | B | A | B | B |
| Approach Vol, veh/h | 635 | | | 285 | 226 | |
| Approach Delay, s/veh | 9.0 | | | 5.6 | 12.6 | |
| Approach LOS | A | | | A | B | |

| Timer - Assigned Phs | 1 | 2 | | | | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.9 | 15.0 | | | | 20.9 | 9.7 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | | | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 9.5 | 25.5 | | | | 39.5 | 26.5 |
| Max Q Clear Time (g_c+I1), s | 2.7 | 6.7 | | | | 3.1 | 4.6 |
| Green Ext Time (p_c), s | 0.0 | 3.8 | | | | 1.6 | 0.6 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 8.8 |
| HCM 6th LOS | A |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 10 | 165 | 120 | 65 | 90 | 10 | 145 | 90 | 195 | 10 | 60 | 10 |
| Future Volume (veh/h) | 10 | 178 | 176 | 77 | 96 | 10 | 176 | 92 | 203 | 10 | 65 | 10 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 11 | 193 | 191 | 84 | 104 | 11 | 191 | 100 | 221 | 11 | 71 | 11 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 26 | 724 | 323 | 136 | 863 | 90 | 244 | 443 | 395 | 26 | 392 | 59 |
| Arrive On Green | 0.01 | 0.20 | 0.20 | 0.08 | 0.27 | 0.27 | 0.14 | 0.25 | 0.25 | 0.01 | 0.13 | 0.13 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 1781 | 3248 | 339 | 1781 | 1777 | 1585 | 1781 | 3094 | 469 |
| Grp Volume(v), veh/h | 11 | 193 | 191 | 84 | 56 | 59 | 191 | 100 | 221 | 11 | 40 | 42 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1781 | 1777 | 1809 | 1781 | 1777 | 1585 | 1781 | 1777 | 1786 |
| Q Serve(g_s), s | 0.2 | 1.8 | 4.3 | 1.8 | 0.9 | 1.0 | 4.1 | 1.8 | 4.8 | 0.2 | 0.8 | 0.8 |
| Cycle Q Clear(g_c), s | 0.2 | 1.8 | 4.3 | 1.8 | 0.9 | 1.0 | 4.1 | 1.8 | 4.8 | 0.2 | 0.8 | 0.8 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.19 | 1.00 | | 1.00 | 1.00 | | 0.26 |
| Lane Grp Cap(c), veh/h | 26 | 724 | 323 | 136 | 472 | 481 | 244 | 443 | 395 | 26 | 225 | 226 |
| V/C Ratio(X) | 0.43 | 0.27 | 0.59 | 0.62 | 0.12 | 0.12 | 0.78 | 0.23 | 0.56 | 0.43 | 0.18 | 0.19 |
| Avail Cap(c_a), veh/h | 339 | 2603 | 1161 | 339 | 1302 | 1326 | 339 | 1266 | 1129 | 339 | 1266 | 1272 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 19.3 | 13.2 | 14.2 | 17.7 | 11.0 | 11.0 | 16.5 | 11.8 | 12.9 | 19.3 | 15.4 | 15.4 |
| Incr Delay (d2), s/veh | 10.9 | 0.2 | 1.7 | 4.5 | 0.1 | 0.1 | 7.8 | 0.3 | 1.2 | 10.9 | 0.4 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.2 | 0.6 | 1.4 | 0.8 | 0.3 | 0.3 | 1.9 | 0.6 | 1.4 | 0.2 | 0.3 | 0.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 30.2 | 13.4 | 15.9 | 22.2 | 11.1 | 11.1 | 24.3 | 12.0 | 14.2 | 30.2 | 15.8 | 15.8 |
| LnGrp LOS | C | B | B | C | B | B | C | B | B | C | B | B |
| Approach Vol, veh/h | | 395 | | | 199 | | | 512 | | | 93 | |
| Approach Delay, s/veh | | 15.1 | | | 15.8 | | | 17.5 | | | 17.5 | |
| Approach LOS | | B | | | B | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.5 | 12.5 | 9.9 | 9.5 | 5.1 | 15.0 | 5.1 | 14.3 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 7.5 | 28.9 | 7.5 | 28.1 | 7.5 | 28.9 | 7.5 | 28.1 |
| Max Q Clear Time (g_c+I1), s | 3.0 | 6.3 | 6.1 | 2.8 | 2.2 | 3.0 | 2.2 | 6.8 |
| Green Ext Time (p_c), s | 0.0 | 1.8 | 0.1 | 0.4 | 0.0 | 0.5 | 0.0 | 1.9 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 16.4 |
| HCM 6th LOS | B |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 465 | 100 | 65 | 60 | 215 | 155 |
| Future Volume (veh/h) | 465 | 104 | 79 | 60 | 217 | 174 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1752 | 1870 | 1870 | 1752 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 505 | 113 | 86 | 65 | 236 | 189 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 10 | 2 | 2 | 10 | 2 | 2 |
| Cap, veh/h | 614 | 138 | 129 | 1075 | 341 | 303 |
| Arrive On Green | 0.44 | 0.44 | 0.07 | 0.61 | 0.19 | 0.19 |
| Sat Flow, veh/h | 1386 | 310 | 1781 | 1752 | 1781 | 1585 |
| Grp Volume(v), veh/h | 0 | 618 | 86 | 65 | 236 | 189 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1696 | 1781 | 1752 | 1781 | 1585 |
| Q Serve(g_s), s | 0.0 | 14.7 | 2.2 | 0.7 | 5.7 | 5.0 |
| Cycle Q Clear(g_c), s | 0.0 | 14.7 | 2.2 | 0.7 | 5.7 | 5.0 |
| Prop In Lane | | 0.18 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 0 | 752 | 129 | 1075 | 341 | 303 |
| V/C Ratio(X) | 0.00 | 0.82 | 0.67 | 0.06 | 0.69 | 0.62 |
| Avail Cap(c_a), veh/h | 0 | 1325 | 367 | 1900 | 812 | 722 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 11.2 | 20.8 | 3.6 | 17.4 | 17.1 |
| Incr Delay (d2), s/veh | 0.0 | 2.3 | 5.8 | 0.0 | 2.5 | 2.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 4.0 | 1.0 | 0.1 | 2.2 | 1.7 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 13.6 | 26.6 | 3.6 | 19.9 | 19.2 |
| LnGrp LOS | A | B | C | A | B | B |
| Approach Vol, veh/h | 618 | | | 151 | 425 | |
| Approach Delay, s/veh | 13.6 | | | 16.7 | 19.6 | |
| Approach LOS | B | | | B | B | |

| Timer - Assigned Phs | 1 | 2 | | | | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.8 | 24.9 | | | | 32.8 | 13.3 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | | | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 9.5 | 36.0 | | | | 50.0 | 21.0 |
| Max Q Clear Time (g_c+I1), s | 4.2 | 16.7 | | | | 2.7 | 7.7 |
| Green Ext Time (p_c), s | 0.1 | 3.7 | | | | 0.3 | 1.1 |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 6th Ctrl Delay | | 16.1 | |
| HCM 6th LOS | | B | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 150 | 100 | 50 | 120 | 90 | 80 | 30 | 590 | 70 | 130 | 790 | 260 |
| Future Volume (veh/h) | 150 | 100 | 57 | 120 | 90 | 80 | 37 | 770 | 70 | 130 | 1055 | 260 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 163 | 109 | 62 | 130 | 98 | 87 | 40 | 837 | 76 | 141 | 1147 | 283 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 207 | 487 | 216 | 167 | 215 | 173 | 137 | 2138 | 664 | 246 | 2299 | 714 |
| Arrive On Green | 0.12 | 0.14 | 0.14 | 0.09 | 0.11 | 0.11 | 0.04 | 0.42 | 0.42 | 0.07 | 0.45 | 0.45 |
| Sat Flow, veh/h | 1781 | 3554 | 1575 | 1781 | 1868 | 1508 | 3456 | 5106 | 1585 | 3456 | 5106 | 1585 |
| Grp Volume(v), veh/h | 163 | 109 | 62 | 130 | 93 | 92 | 40 | 837 | 76 | 141 | 1147 | 283 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1575 | 1781 | 1777 | 1599 | 1728 | 1702 | 1585 | 1728 | 1702 | 1585 |
| Q Serve(g_s), s | 5.7 | 1.8 | 2.3 | 4.6 | 3.1 | 3.5 | 0.7 | 7.4 | 1.9 | 2.5 | 10.3 | 7.7 |
| Cycle Q Clear(g_c), s | 5.7 | 1.8 | 2.3 | 4.6 | 3.1 | 3.5 | 0.7 | 7.4 | 1.9 | 2.5 | 10.3 | 7.7 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.94 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 207 | 487 | 216 | 167 | 204 | 184 | 137 | 2138 | 664 | 246 | 2299 | 714 |
| V/C Ratio(X) | 0.79 | 0.22 | 0.29 | 0.78 | 0.45 | 0.50 | 0.29 | 0.39 | 0.11 | 0.57 | 0.50 | 0.40 |
| Avail Cap(c_a), veh/h | 345 | 2204 | 977 | 290 | 1047 | 942 | 402 | 2138 | 664 | 509 | 2299 | 714 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 27.7 | 24.8 | 25.0 | 28.6 | 26.7 | 26.8 | 30.1 | 13.0 | 11.4 | 29.0 | 12.6 | 11.9 |
| Incr Delay (d2), s/veh | 6.6 | 0.2 | 0.7 | 7.6 | 1.6 | 2.1 | 1.2 | 0.5 | 0.4 | 2.1 | 0.8 | 1.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.7 | 0.7 | 0.8 | 2.2 | 1.3 | 1.4 | 0.3 | 2.5 | 0.6 | 1.1 | 3.5 | 2.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 34.3 | 25.0 | 25.7 | 36.2 | 28.2 | 28.9 | 31.3 | 13.6 | 11.8 | 31.1 | 13.3 | 13.5 |
| LnGrp LOS | C | C | C | D | C | C | C | B | B | C | B | B |
| Approach Vol, veh/h | | 334 | | | 315 | | | 953 | | | 1571 | |
| Approach Delay, s/veh | | 29.7 | | | 31.7 | | | 14.2 | | | 15.0 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 9.1 | 31.5 | 10.5 | 13.3 | 7.1 | 33.5 | 12.0 | 11.9 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 9.5 | 27.0 | 10.5 | 40.0 | 7.5 | 29.0 | 12.5 | 38.0 |
| Max Q Clear Time (g_c+I1), s | 4.5 | 9.4 | 6.6 | 4.3 | 2.7 | 12.3 | 7.7 | 5.5 |
| Green Ext Time (p_c), s | 0.2 | 5.6 | 0.1 | 0.9 | 0.0 | 8.3 | 0.2 | 1.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 17.9 |
| HCM 6th LOS | B |

**Notes**

User approved pedestrian interval to be less than phase max green.



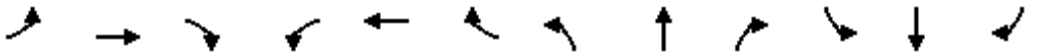
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 180 | 160 | 180 | 230 | 140 | 70 | 340 | 700 | 250 | 100 | 780 | 110 |
| Future Volume (veh/h) | 180 | 160 | 203 | 279 | 140 | 70 | 368 | 756 | 274 | 100 | 893 | 110 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1752 | 1870 | 1870 | 1870 | 1870 | 1752 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 196 | 174 | 221 | 303 | 152 | 76 | 400 | 822 | 298 | 109 | 971 | 120 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 10 | 2 | 2 | 2 | 2 | 10 | 2 | 2 | 2 |
| Cap, veh/h | 273 | 356 | 300 | 341 | 405 | 342 | 441 | 1091 | 395 | 138 | 1200 | 148 |
| Arrive On Green | 0.08 | 0.19 | 0.19 | 0.11 | 0.22 | 0.22 | 0.13 | 0.43 | 0.43 | 0.08 | 0.38 | 0.38 |
| Sat Flow, veh/h | 3456 | 1870 | 1578 | 3237 | 1870 | 1578 | 3456 | 2553 | 924 | 1781 | 3182 | 393 |
| Grp Volume(v), veh/h | 196 | 174 | 221 | 303 | 152 | 76 | 400 | 572 | 548 | 109 | 542 | 549 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1578 | 1618 | 1870 | 1578 | 1728 | 1777 | 1700 | 1781 | 1777 | 1798 |
| Q Serve(g_s), s | 5.0 | 7.5 | 11.9 | 8.3 | 6.2 | 3.6 | 10.3 | 24.5 | 24.6 | 5.4 | 24.7 | 24.7 |
| Cycle Q Clear(g_c), s | 5.0 | 7.5 | 11.9 | 8.3 | 6.2 | 3.6 | 10.3 | 24.5 | 24.6 | 5.4 | 24.7 | 24.7 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.54 | 1.00 | | 0.22 |
| Lane Grp Cap(c), veh/h | 273 | 356 | 300 | 341 | 405 | 342 | 441 | 759 | 727 | 138 | 670 | 678 |
| V/C Ratio(X) | 0.72 | 0.49 | 0.74 | 0.89 | 0.38 | 0.22 | 0.91 | 0.75 | 0.75 | 0.79 | 0.81 | 0.81 |
| Avail Cap(c_a), veh/h | 403 | 768 | 648 | 341 | 747 | 630 | 441 | 759 | 727 | 188 | 670 | 678 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 40.5 | 32.6 | 34.4 | 39.8 | 30.1 | 29.1 | 38.8 | 21.8 | 21.8 | 40.9 | 25.2 | 25.2 |
| Incr Delay (d2), s/veh | 3.5 | 1.0 | 3.5 | 23.6 | 0.6 | 0.3 | 22.3 | 6.8 | 7.2 | 14.6 | 10.2 | 10.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.2 | 3.4 | 4.7 | 4.3 | 2.8 | 1.3 | 5.6 | 10.9 | 10.5 | 2.9 | 11.6 | 11.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 44.0 | 33.6 | 37.9 | 63.4 | 30.7 | 29.4 | 61.1 | 28.6 | 29.0 | 55.5 | 35.3 | 35.3 |
| LnGrp LOS | D | C | D | E | C | C | E | C | C | E | D | D |
| Approach Vol, veh/h | | 591 | | | 531 | | | 1520 | | | 1200 | |
| Approach Delay, s/veh | | 38.7 | | | 49.1 | | | 37.3 | | | 37.1 | |
| Approach LOS | | D | | | D | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 11.5 | 43.0 | 14.0 | 21.6 | 16.0 | 38.5 | 11.6 | 24.0 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 9.5 | 36.0 | 9.5 | 37.0 | 11.5 | 34.0 | 10.5 | 36.0 |
| Max Q Clear Time (g_c+I1), s | 7.4 | 26.6 | 10.3 | 13.9 | 12.3 | 26.7 | 7.0 | 8.2 |
| Green Ext Time (p_c), s | 0.0 | 4.9 | 0.0 | 1.7 | 0.0 | 3.9 | 0.2 | 1.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 39.1 |
| HCM 6th LOS | D |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 240 | 0 | 250 | 270 | 1090 | 0 | 0 | 700 | 540 |
| Future Volume (vph) | 0 | 0 | 0 | 258 | 0 | 250 | 325 | 1198 | 0 | 0 | 885 | 540 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Lane Util. Factor | | | | 0.95 | 0.91 | 0.95 | 1.00 | 0.95 | | | 0.95 | 1.00 |
| Frt | | | | 1.00 | 0.92 | 0.85 | 1.00 | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | 0.95 | 0.98 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | 1681 | 1468 | 1395 | 1770 | 3539 | | | 3471 | 1553 |
| Flt Permitted | | | | 0.95 | 0.98 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | 1681 | 1468 | 1395 | 1770 | 3539 | | | 3471 | 1553 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 0 | 280 | 0 | 272 | 353 | 1302 | 0 | 0 | 962 | 587 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 60 | 69 | 0 | 0 | 0 | 0 | 0 | 333 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 190 | 125 | 108 | 353 | 1302 | 0 | 0 | 962 | 254 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 10% | 2% | 2% | 2% | 2% | 4% | 4% |
| Turn Type | | | | Perm | NA | Perm | Prot | NA | | | NA | Perm |
| Protected Phases | | | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | | | | 8 | | 8 | | | | | | 6 |
| Actuated Green, G (s) | | | | 15.6 | 15.6 | 15.6 | 22.0 | 65.4 | | | 38.9 | 38.9 |
| Effective Green, g (s) | | | | 15.6 | 15.6 | 15.6 | 22.0 | 65.4 | | | 38.9 | 38.9 |
| Actuated g/C Ratio | | | | 0.17 | 0.17 | 0.17 | 0.24 | 0.73 | | | 0.43 | 0.43 |
| Clearance Time (s) | | | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Vehicle Extension (s) | | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | | | 291 | 254 | 241 | 432 | 2571 | | | 1500 | 671 |
| v/s Ratio Prot | | | | | | | c0.20 | 0.37 | | | c0.28 | |
| v/s Ratio Perm | | | | c0.11 | 0.08 | 0.08 | | | | | | 0.16 |
| v/c Ratio | | | | 0.65 | 0.49 | 0.45 | 0.82 | 0.51 | | | 0.64 | 0.38 |
| Uniform Delay, d1 | | | | 34.7 | 33.6 | 33.4 | 32.1 | 5.3 | | | 20.1 | 17.3 |
| Progression Factor | | | | 1.00 | 1.00 | 1.00 | 0.99 | 0.32 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | | | 5.2 | 1.5 | 1.3 | 8.3 | 0.5 | | | 2.1 | 1.6 |
| Delay (s) | | | | 39.9 | 35.1 | 34.7 | 40.2 | 2.2 | | | 22.2 | 19.0 |
| Level of Service | | | | D | D | C | D | A | | | C | B |
| Approach Delay (s) | | 0.0 | | | 36.6 | | | 10.3 | | | 21.0 | |
| Approach LOS | | A | | | D | | | B | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 18.6 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.69 | | |
| Actuated Cycle Length (s) | 90.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 68.8% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 660 | 0 | 440 | 0 | 0 | 0 | 0 | 700 | 120 | 200 | 740 | 0 |
| Future Volume (vph) | 660 | 0 | 502 | 0 | 0 | 0 | 0 | 863 | 137 | 200 | 943 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.0 | 4.5 | | | | | 4.5 | 4.5 | 4.5 | 4.5 | |
| Lane Util. Factor | 0.97 | 0.95 | 0.95 | | | | | 0.95 | 1.00 | 1.00 | 0.95 | |
| Frt | 1.00 | 0.85 | 0.85 | | | | | 1.00 | 0.85 | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (prot) | 3335 | 1504 | 1504 | | | | | 3539 | 1583 | 1719 | 3539 | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | | | | | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (perm) | 3335 | 1504 | 1504 | | | | | 3539 | 1583 | 1719 | 3539 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 717 | 0 | 546 | 0 | 0 | 0 | 0 | 938 | 149 | 217 | 1025 | 0 |
| RTOR Reduction (vph) | 0 | 273 | 89 | 0 | 0 | 0 | 0 | 0 | 88 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 717 | 0 | 184 | 0 | 0 | 0 | 0 | 938 | 61 | 217 | 1025 | 0 |
| Heavy Vehicles (%) | 5% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 5% | 2% | 2% |
| Turn Type | custom | NA | custom | | | | | NA | Perm | Prot | NA | |
| Protected Phases | | | | | | | | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | | | | | | 2 | | | |
| Actuated Green, G (s) | 23.5 | 0.0 | 23.5 | | | | | 37.1 | 37.1 | 15.9 | 57.5 | |
| Effective Green, g (s) | 23.5 | 0.0 | 23.5 | | | | | 37.1 | 37.1 | 15.9 | 57.5 | |
| Actuated g/C Ratio | 0.26 | 0.00 | 0.26 | | | | | 0.41 | 0.41 | 0.18 | 0.64 | |
| Clearance Time (s) | 4.5 | | 4.5 | | | | | 4.5 | 4.5 | 4.5 | 4.5 | |
| Vehicle Extension (s) | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 870 | 0 | 392 | | | | | 1458 | 652 | 303 | 2261 | |
| v/s Ratio Prot | | | | | | | | c0.27 | | c0.13 | 0.29 | |
| v/s Ratio Perm | c0.21 | | 0.12 | | | | | | 0.04 | | | |
| v/c Ratio | 0.82 | 0.00 | 0.47 | | | | | 0.64 | 0.09 | 0.72 | 0.45 | |
| Uniform Delay, d1 | 31.3 | 45.0 | 28.0 | | | | | 21.2 | 16.2 | 34.9 | 8.3 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | | | | | 1.00 | 1.00 | 1.27 | 0.25 | |
| Incremental Delay, d2 | 6.4 | 0.0 | 0.9 | | | | | 2.2 | 0.3 | 6.3 | 0.5 | |
| Delay (s) | 37.7 | 45.0 | 28.9 | | | | | 23.4 | 16.5 | 50.6 | 2.6 | |
| Level of Service | D | D | C | | | | | C | B | D | A | |
| Approach Delay (s) | | 37.4 | | | 0.0 | | | 22.4 | | | 11.0 | |
| Approach LOS | | D | | | A | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 23.7 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.71 | | |
| Actuated Cycle Length (s) | 90.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 68.8% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.6 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↑ | ↑ | | ↰ | ↱ |
| Traffic Vol, veh/h | 0 | 620 | 5 | 0 | 5 | 120 |
| Future Vol, veh/h | 0 | 639 | 5 | 0 | 5 | 134 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 25 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 695 | 5 | 0 | 5 | 146 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | 700 | 5 |
| Stage 1 | - | - | - | - | 5 | - |
| Stage 2 | - | - | - | - | 695 | - |
| Critical Hdwy | - | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | 0 | 405 | 1078 |
| Stage 1 | 0 | - | - | 0 | 1018 | - |
| Stage 2 | 0 | - | - | 0 | 495 | - |
| Platoon blocked, % | | - | - | | | |
| Mov Cap-1 Maneuver | - | - | - | - | 405 | 1078 |
| Mov Cap-2 Maneuver | - | - | - | - | 405 | - |
| Stage 1 | - | - | - | - | 1018 | - |
| Stage 2 | - | - | - | - | 495 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 9.1 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBT | WBT | SBLn1 | SBLn2 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | 405 | 1078 |
| HCM Lane V/C Ratio | - | - | 0.013 | 0.135 |
| HCM Control Delay (s) | - | - | 14 | 8.9 |
| HCM Lane LOS | - | - | B | A |
| HCM 95th %tile Q(veh) | - | - | 0 | 0.5 |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 320 | 0 | 145 | 80 | 270 | 0 | 0 | 190 | 40 |
| Future Volume (veh/h) | 0 | 0 | 0 | 409 | 0 | 145 | 100 | 285 | 0 | 0 | 243 | 40 |
| Initial Q (Qb), veh | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | | | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | | | | 1870 | 0 | 1870 | 1870 | 1870 | 0 | 0 | 1870 | 1870 |
| Adj Flow Rate, veh/h | | | | 445 | 0 | 158 | 109 | 310 | 0 | 0 | 264 | 43 |
| Peak Hour Factor | | | | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | | | | 2 | 0 | 2 | 2 | 2 | 0 | 0 | 2 | 2 |
| Cap, veh/h | | | | 585 | 0 | 520 | 169 | 1440 | 0 | 0 | 543 | 87 |
| Arrive On Green | | | | 0.33 | 0.00 | 0.33 | 0.09 | 0.41 | 0.00 | 0.00 | 0.18 | 0.18 |
| Sat Flow, veh/h | | | | 1781 | 0 | 1585 | 1781 | 3647 | 0 | 0 | 3159 | 493 |
| Grp Volume(v), veh/h | | | | 445 | 0 | 158 | 109 | 310 | 0 | 0 | 152 | 155 |
| Grp Sat Flow(s),veh/h/ln | | | | 1781 | 0 | 1585 | 1781 | 1777 | 0 | 0 | 1777 | 1782 |
| Q Serve(g_s), s | | | | 7.6 | 0.0 | 2.5 | 2.0 | 1.9 | 0.0 | 0.0 | 2.6 | 2.7 |
| Cycle Q Clear(g_c), s | | | | 7.6 | 0.0 | 2.5 | 2.0 | 1.9 | 0.0 | 0.0 | 2.6 | 2.7 |
| Prop In Lane | | | | 1.00 | | 1.00 | 1.00 | | 0.00 | 0.00 | | 0.28 |
| Lane Grp Cap(c), veh/h | | | | 585 | 0 | 520 | 169 | 1440 | 0 | 0 | 314 | 315 |
| V/C Ratio(X) | | | | 0.76 | 0.00 | 0.30 | 0.65 | 0.22 | 0.00 | 0.00 | 0.48 | 0.49 |
| Avail Cap(c_a), veh/h | | | | 1082 | 0 | 962 | 396 | 3211 | 0 | 0 | 974 | 976 |
| HCM Platoon Ratio | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | | | | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | | | | 10.2 | 0.0 | 8.5 | 14.7 | 6.5 | 0.0 | 0.0 | 12.5 | 12.5 |
| Incr Delay (d2), s/veh | | | | 2.1 | 0.0 | 0.3 | 4.1 | 0.1 | 0.0 | 0.0 | 1.1 | 1.2 |
| Initial Q Delay(d3),s/veh | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | | | | 2.2 | 0.0 | 0.6 | 0.8 | 0.4 | 0.0 | 0.0 | 0.8 | 0.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | | | | 12.2 | 0.0 | 8.8 | 18.8 | 6.6 | 0.0 | 0.0 | 13.6 | 13.7 |
| LnGrp LOS | | | | B | A | A | B | A | A | A | B | B |
| Approach Vol, veh/h | | | | | 603 | | | 419 | | | 307 | |
| Approach Delay, s/veh | | | | | 11.3 | | | 9.8 | | | 13.7 | |
| Approach LOS | | | | | B | | | A | | | B | |

| Timer - Assigned Phs | 2 | | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 18.2 | | 7.7 | 10.5 | | 15.6 |
| Change Period (Y+Rc), s | 4.5 | | 4.5 | 4.5 | | 4.5 |
| Max Green Setting (Gmax), s | 30.5 | | 7.5 | 18.5 | | 20.5 |
| Max Q Clear Time (g_c+I1), s | 3.9 | | 4.0 | 4.7 | | 9.6 |
| Green Ext Time (p_c), s | 1.9 | | 0.1 | 1.3 | | 1.6 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 11.4 |
| HCM 6th LOS | | B |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 6.1 |
| Intersection LOS | A |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Entry Lanes | 1 | 1 | 1 | 1 |
| Conflicting Circle Lanes | 1 | 1 | 1 | 1 |
| Adj Approach Flow, veh/h | 185 | 256 | 164 | 424 |
| Demand Flow Rate, veh/h | 189 | 261 | 167 | 432 |
| Vehicles Circulating, veh/h | 332 | 189 | 210 | 211 |
| Vehicles Exiting, veh/h | 311 | 188 | 311 | 239 |
| Ped Vol Crossing Leg, #/h | 0 | 0 | 0 | 0 |
| Ped Cap Adj | 1.000 | 1.000 | 1.000 | 1.000 |
| Approach Delay, s/veh | 5.6 | 5.3 | 4.6 | 7.3 |
| Approach LOS | A | A | A | A |

| Lane | Left | Left | Left | Left |
|---|---|---|---|---|
| Designated Moves | LTR | LTR | LTR | LTR |
| Assumed Moves | LTR | LTR | LTR | LTR |
| RT Channelized | | | | |
| Lane Util | 1.000 | 1.000 | 1.000 | 1.000 |
| Follow-Up Headway, s | 2.609 | 2.609 | 2.609 | 2.609 |
| Critical Headway, s | 4.976 | 4.976 | 4.976 | 4.976 |
| Entry Flow, veh/h | 189 | 261 | 167 | 432 |
| Cap Entry Lane, veh/h | 984 | 1138 | 1114 | 1113 |
| Entry HV Adj Factor | 0.978 | 0.981 | 0.981 | 0.981 |
| Flow Entry, veh/h | 185 | 256 | 164 | 424 |
| Cap Entry, veh/h | 962 | 1116 | 1093 | 1092 |
| V/C Ratio | 0.192 | 0.229 | 0.150 | 0.388 |
| Control Delay, s/veh | 5.6 | 5.3 | 4.6 | 7.3 |
| LOS | A | A | A | A |
| 95th %tile Queue, veh | 1 | 1 | 1 | 2 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.4 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 67 | 257 | 302 | 44 | 0 | 49 |
| Future Vol, veh/h | 67 | 257 | 302 | 44 | 0 | 49 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 100 | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 73 | 279 | 328 | 48 | 0 | 53 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 376 | 0 | - | 0 | - | 188 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | 4.14 | - | - | - | - | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | 2.22 | - | - | - | - | 3.32 |
| Pot Cap-1 Maneuver | 1179 | - | - | - | 0 | 822 |
| Stage 1 | - | - | - | - | 0 | - |
| Stage 2 | - | - | - | - | 0 | - |
| Platoon blocked, % | | | - | - | - | |
| Mov Cap-1 Maneuver | 1179 | - | - | - | - | 822 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 1.7 | 0 | 9.7 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1179 | - | - | - | 822 |
| HCM Lane V/C Ratio | 0.062 | - | - | - | 0.065 |
| HCM Control Delay (s) | 8.3 | - | - | - | 9.7 |
| HCM Lane LOS | A | - | - | - | A |
| HCM 95th %tile Q(veh) | 0.2 | - | - | - | 0.2 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 35 | 222 | 321 | 24 | 0 | 25 |
| Future Vol, veh/h | 35 | 222 | 321 | 24 | 0 | 25 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 100 | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 38 | 241 | 349 | 26 | 0 | 27 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 375 | 0 | - | 0 | - | 188 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | 4.14 | - | - | - | - | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | 2.22 | - | - | - | - | 3.32 |
| Pot Cap-1 Maneuver | 1180 | - | - | - | 0 | 822 |
| Stage 1 | - | - | - | - | 0 | - |
| Stage 2 | - | - | - | - | 0 | - |
| Platoon blocked, % | | | - | - | - | |
| Mov Cap-1 Maneuver | 1180 | - | - | - | - | 822 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 1.1 | 0 | 9.5 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1180 | - | - | - | 822 |
| HCM Lane V/C Ratio | 0.032 | - | - | - | 0.033 |
| HCM Control Delay (s) | 8.2 | - | - | - | 9.5 |
| HCM Lane LOS | A | - | - | - | A |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.1 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 9.6 |
| Intersection LOS | A |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 25 | 197 | 305 | 69 | 62 | 40 |
| Future Vol, veh/h | 25 | 197 | 305 | 69 | 62 | 40 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 27 | 214 | 332 | 75 | 67 | 43 |
| Number of Lanes | 1 | 2 | 2 | 0 | 1 | 1 |

| Approach | EB | WB | SB |
|---|---|---|---|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 2 | 3 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 2 | 0 | 2 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 2 | 3 |
| HCM Control Delay | 8.5 | 10.2 | 9.6 |
| HCM LOS | A | B | A |

| Lane | EBLn1 | EBLn2 | EBLn3 | WBLn1 | WBLn2 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 0% | 0% | 0% | 100% | 0% |
| Vol Thru, % | 0% | 100% | 100% | 100% | 60% | 0% | 0% |
| Vol Right, % | 0% | 0% | 0% | 0% | 40% | 0% | 100% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 25 | 99 | 99 | 203 | 171 | 62 | 40 |
| LT Vol | 25 | 0 | 0 | 0 | 0 | 62 | 0 |
| Through Vol | 0 | 99 | 99 | 203 | 102 | 0 | 0 |
| RT Vol | 0 | 0 | 0 | 0 | 69 | 0 | 40 |
| Lane Flow Rate | 27 | 107 | 107 | 221 | 186 | 67 | 43 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.047 | 0.169 | 0.118 | 0.328 | 0.261 | 0.124 | 0.065 |
| Departure Headway (Hd) | 6.2 | 5.697 | 3.951 | 5.347 | 5.063 | 6.605 | 5.401 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 574 | 625 | 896 | 667 | 705 | 538 | 656 |
| Service Time | 3.974 | 3.47 | 1.723 | 3.117 | 2.832 | 4.401 | 3.197 |
| HCM Lane V/C Ratio | 0.047 | 0.171 | 0.119 | 0.331 | 0.264 | 0.125 | 0.066 |
| HCM Control Delay | 9.3 | 9.6 | 7.3 | 10.7 | 9.6 | 10.3 | 8.6 |
| HCM Lane LOS | A | A | A | B | A | B | A |
| HCM 95th-tile Q | 0.1 | 0.6 | 0.4 | 1.4 | 1 | 0.4 | 0.2 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.3 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 57 | 202 | 332 | 29 | 0 | 42 |
| Future Vol, veh/h | 57 | 202 | 332 | 29 | 0 | 42 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 100 | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 62 | 220 | 361 | 32 | 0 | 46 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 393 | 0 | - | 0 | - | 197 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | 4.14 | - | - | - | - | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | 2.22 | - | - | - | - | 3.32 |
| Pot Cap-1 Maneuver | 1162 | - | - | - | 0 | 811 |
| Stage 1 | - | - | - | - | 0 | - |
| Stage 2 | - | - | - | - | 0 | - |
| Platoon blocked, % | | | - | - | - | |
| Mov Cap-1 Maneuver | 1162 | - | - | - | - | 811 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 1.8 | 0 | 9.7 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1162 | - | - | - | 811 |
| HCM Lane V/C Ratio | 0.053 | - | - | - | 0.056 |
| HCM Control Delay (s) | 8.3 | - | - | - | 9.7 |
| HCM Lane LOS | A | - | - | - | A |
| HCM 95th %tile Q(veh) | 0.2 | - | - | - | 0.2 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 9.9 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 24 | 168 | 10 | 10 | 304 | 31 | 10 | 10 | 10 | 35 | 10 | 47 |
| Future Vol, veh/h | 24 | 168 | 10 | 10 | 304 | 31 | 10 | 10 | 10 | 35 | 10 | 47 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 26 | 183 | 11 | 11 | 330 | 34 | 11 | 11 | 11 | 38 | 11 | 51 |
| Number of Lanes | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 1 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 3 | 3 | 3 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 3 | 2 | 3 | 3 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 3 | 3 | 3 |
| HCM Control Delay | 9.5 | 10.3 | 9.2 | 9.2 |
| HCM LOS | A | B | A | A |

| Lane | NBLn1 | NBLn2 | EBLn1 | EBLn2 | EBLn3 | WBLn1 | WBLn2 | WBLn3 | SBLn1 | SBLn2 | SBLn3 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 100% | 0% | 0% | 100% | 0% | 0% | 100% | 0% | 0% |
| Vol Thru, % | 0% | 50% | 0% | 100% | 85% | 0% | 100% | 77% | 0% | 100% | 0% |
| Vol Right, % | 0% | 50% | 0% | 0% | 15% | 0% | 0% | 23% | 0% | 0% | 100% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 10 | 20 | 24 | 112 | 66 | 10 | 203 | 132 | 35 | 10 | 47 |
| LT Vol | 10 | 0 | 24 | 0 | 0 | 10 | 0 | 0 | 35 | 0 | 0 |
| Through Vol | 0 | 10 | 0 | 112 | 56 | 0 | 203 | 101 | 0 | 10 | 0 |
| RT Vol | 0 | 10 | 0 | 0 | 10 | 0 | 0 | 31 | 0 | 0 | 47 |
| Lane Flow Rate | 11 | 22 | 26 | 122 | 72 | 11 | 220 | 144 | 38 | 11 | 51 |
| Geometry Grp | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Degree of Util (X) | 0.021 | 0.036 | 0.045 | 0.192 | 0.111 | 0.018 | 0.33 | 0.209 | 0.071 | 0.019 | 0.078 |
| Departure Headway (Hd) | 6.853 | 6.003 | 6.17 | 5.668 | 5.562 | 5.901 | 5.4 | 5.235 | 6.714 | 6.214 | 5.516 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 525 | 600 | 575 | 627 | 638 | 602 | 661 | 679 | 537 | 579 | 653 |
| Service Time | 4.557 | 3.707 | 3.961 | 3.459 | 3.353 | 3.682 | 3.18 | 3.016 | 4.416 | 3.916 | 3.216 |
| HCM Lane V/C Ratio | 0.021 | 0.037 | 0.045 | 0.195 | 0.113 | 0.018 | 0.333 | 0.212 | 0.071 | 0.019 | 0.078 |
| HCM Control Delay | 9.7 | 8.9 | 9.3 | 9.8 | 9.1 | 8.8 | 10.9 | 9.4 | 9.9 | 9 | 8.7 |
| HCM Lane LOS | A | A | A | A | A | A | B | A | A | A | A |
| HCM 95th-tile Q | 0.1 | 0.1 | 0.1 | 0.7 | 0.4 | 0.1 | 1.4 | 0.8 | 0.2 | 0.1 | 0.3 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.2 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 45 | 60 | 0 |
| Future Vol, veh/h | 38 | 7 | 15 | 50 | 77 | 69 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 41 | 8 | 16 | 54 | 84 | 75 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 208 | 122 | 159 | 0 | - | 0 |
| Stage 1 | 122 | - | - | - | - | - |
| Stage 2 | 86 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 780 | 929 | 1420 | - | - | - |
| Stage 1 | 903 | - | - | - | - | - |
| Stage 2 | 937 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 771 | 929 | 1420 | - | - | - |
| Mov Cap-2 Maneuver | 771 | - | - | - | - | - |
| Stage 1 | 892 | - | - | - | - | - |
| Stage 2 | 937 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.8 | 1.7 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1420 | - | 792 | - | - |
| HCM Lane V/C Ratio | 0.011 | - | 0.062 | - | - |
| HCM Control Delay (s) | 7.6 | 0 | 9.8 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.2 | - | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 0 | 0 | 60 | 0 |
| Future Vol, veh/h | 4 | 5 | 0 | 4 | 6 | 26 | 3 | 88 | 16 | 33 | 120 | 6 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 4 | 5 | 0 | 4 | 7 | 28 | 3 | 96 | 17 | 36 | 130 | 7 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 7.8 | 7.4 | 7.8 | 8.2 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 3% | 44% | 11% | 21% |
| Vol Thru, % | 82% | 56% | 17% | 75% |
| Vol Right, % | 15% | 0% | 72% | 4% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 107 | 9 | 36 | 159 |
| LT Vol | 3 | 4 | 4 | 33 |
| Through Vol | 88 | 5 | 6 | 120 |
| RT Vol | 16 | 0 | 26 | 6 |
| Lane Flow Rate | 116 | 10 | 39 | 173 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.131 | 0.013 | 0.045 | 0.198 |
| Departure Headway (Hd) | 4.067 | 4.695 | 4.16 | 4.127 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 872 | 767 | 866 | 864 |
| Service Time | 2.133 | 2.696 | 2.161 | 2.179 |
| HCM Lane V/C Ratio | 0.133 | 0.013 | 0.045 | 0.2 |
| HCM Control Delay | 7.8 | 7.8 | 7.4 | 8.2 |
| HCM Lane LOS | A | A | A | A |
| HCM 95th-tile Q | 0.5 | 0 | 0.1 | 0.7 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 7.7 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 0 | 0 | 60 | 0 |
| Future Vol, veh/h | 17 | 5 | 9 | 4 | 5 | 26 | 14 | 64 | 16 | 33 | 64 | 27 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 18 | 5 | 10 | 4 | 5 | 28 | 15 | 70 | 17 | 36 | 70 | 29 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 7.6 | 7.2 | 7.7 | 7.9 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 15% | 55% | 11% | 27% |
| Vol Thru, % | 68% | 16% | 14% | 52% |
| Vol Right, % | 17% | 29% | 74% | 22% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 94 | 31 | 35 | 124 |
| LT Vol | 14 | 17 | 4 | 33 |
| Through Vol | 64 | 5 | 5 | 64 |
| RT Vol | 16 | 9 | 26 | 27 |
| Lane Flow Rate | 102 | 34 | 38 | 135 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.116 | 0.041 | 0.043 | 0.152 |
| Departure Headway (Hd) | 4.09 | 4.423 | 4.061 | 4.06 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 867 | 814 | 887 | 876 |
| Service Time | 2.157 | 2.424 | 2.062 | 2.121 |
| HCM Lane V/C Ratio | 0.118 | 0.042 | 0.043 | 0.154 |
| HCM Control Delay | 7.7 | 7.6 | 7.2 | 7.9 |
| HCM Lane LOS | A | A | A | A |
| HCM 95th-tile Q | 0.4 | 0.1 | 0.1 | 0.5 |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 95 | 35 | 50 | 10 | 95 | 45 | 95 | 205 | 10 | 60 | 180 | 25 |
| Future Volume (veh/h) | 128 | 35 | 50 | 10 | 95 | 45 | 96 | 205 | 10 | 60 | 180 | 154 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 139 | 38 | 54 | 11 | 103 | 49 | 104 | 223 | 11 | 65 | 196 | 167 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 218 | 434 | 368 | 26 | 232 | 196 | 157 | 390 | 330 | 117 | 348 | 295 |
| Arrive On Green | 0.12 | 0.23 | 0.23 | 0.01 | 0.12 | 0.12 | 0.09 | 0.21 | 0.21 | 0.07 | 0.19 | 0.19 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Grp Volume(v), veh/h | 139 | 38 | 54 | 11 | 103 | 49 | 104 | 223 | 11 | 65 | 196 | 167 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Q Serve(g_s), s | 2.8 | 0.6 | 1.0 | 0.2 | 1.9 | 1.0 | 2.1 | 4.0 | 0.2 | 1.3 | 3.6 | 3.6 |
| Cycle Q Clear(g_c), s | 2.8 | 0.6 | 1.0 | 0.2 | 1.9 | 1.0 | 2.1 | 4.0 | 0.2 | 1.3 | 3.6 | 3.6 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 218 | 434 | 368 | 26 | 232 | 196 | 157 | 390 | 330 | 117 | 348 | 295 |
| V/C Ratio(X) | 0.64 | 0.09 | 0.15 | 0.43 | 0.44 | 0.25 | 0.66 | 0.57 | 0.03 | 0.56 | 0.56 | 0.57 |
| Avail Cap(c_a), veh/h | 498 | 1196 | 1014 | 356 | 1046 | 887 | 356 | 1146 | 971 | 356 | 1146 | 971 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 15.7 | 11.3 | 11.5 | 18.3 | 15.2 | 14.9 | 16.6 | 13.3 | 11.8 | 17.0 | 13.9 | 13.9 |
| Incr Delay (d2), s/veh | 3.1 | 0.1 | 0.2 | 10.9 | 1.3 | 0.7 | 4.7 | 1.3 | 0.0 | 4.1 | 1.4 | 1.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.1 | 0.2 | 0.3 | 0.2 | 0.8 | 0.4 | 0.9 | 1.3 | 0.1 | 0.5 | 1.2 | 1.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 18.7 | 11.4 | 11.6 | 29.2 | 16.6 | 15.5 | 21.3 | 14.7 | 11.9 | 21.1 | 15.3 | 15.6 |
| LnGrp LOS | B | B | B | C | B | B | C | B | B | C | B | B |
| Approach Vol, veh/h | | 231 | | | 163 | | | 338 | | | 428 | |
| Approach Delay, s/veh | | 15.9 | | | 17.1 | | | 16.6 | | | 16.3 | |
| Approach LOS | | B | | | B | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.0 | 12.3 | 5.0 | 13.2 | 7.8 | 11.5 | 9.1 | 9.1 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 7.5 | 23.0 | 7.5 | 24.0 | 7.5 | 23.0 | 10.5 | 21.0 |
| Max Q Clear Time (g_c+I1), s | 3.3 | 6.0 | 2.2 | 3.0 | 4.1 | 5.6 | 4.8 | 3.9 |
| Green Ext Time (p_c), s | 0.0 | 1.0 | 0.0 | 0.3 | 0.1 | 1.4 | 0.2 | 0.6 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 16.4 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.5 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 15 | 380 | 35 | 15 | 140 | 70 |
| Future Vol, veh/h | 28 | 380 | 76 | 17 | 140 | 143 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 400 | - | - | 300 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 30 | 413 | 83 | 18 | 152 | 155 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 551 | 92 | 0 | 0 | 101 | 0 |
| Stage 1 | 92 | - | - | - | - | - |
| Stage 2 | 459 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 495 | 965 | - | - | 1491 | - |
| Stage 1 | 932 | - | - | - | - | - |
| Stage 2 | 636 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 445 | 965 | - | - | 1491 | - |
| Mov Cap-2 Maneuver | 445 | - | - | - | - | - |
| Stage 1 | 932 | - | - | - | - | - |
| Stage 2 | 571 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 11.7 | 0 | 3.8 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 445 | 965 | 1491 | - |
| HCM Lane V/C Ratio | - | - | 0.068 | 0.428 | 0.102 | - |
| HCM Control Delay (s) | - | - | 13.7 | 11.5 | 7.7 | - |
| HCM Lane LOS | - | - | B | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 0.2 | 2.2 | 0.3 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.5 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 20 | 5 | 5 | 410 | 205 | 40 |
| Future Vol, veh/h | 20 | 5 | 5 | 451 | 278 | 40 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 22 | 5 | 5 | 490 | 302 | 43 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 824 | 324 | 345 | 0 | - | 0 |
| Stage 1 | 324 | - | - | - | - | - |
| Stage 2 | 500 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 343 | 717 | 1214 | - | - | - |
| Stage 1 | 733 | - | - | - | - | - |
| Stage 2 | 609 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 341 | 717 | 1214 | - | - | - |
| Mov Cap-2 Maneuver | 341 | - | - | - | - | - |
| Stage 1 | 729 | - | - | - | - | - |
| Stage 2 | 609 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 15.2 | 0.1 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1214 | - | 381 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | 0.071 | - | - |
| HCM Control Delay (s) | 8 | 0 | 15.2 | - | - |
| HCM Lane LOS | A | A | C | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.2 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.7 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 10 | 5 | 5 | 40 | 55 | 30 |
| Future Vol, veh/h | 10 | 5 | 5 | 83 | 141 | 30 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | 100 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 5 | 5 | 90 | 153 | 33 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 270 | 170 | 186 | 0 | - | 0 |
| Stage 1 | 170 | - | - | - | - | - |
| Stage 2 | 100 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 719 | 874 | 1388 | - | - | - |
| Stage 1 | 860 | - | - | - | - | - |
| Stage 2 | 924 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 716 | 874 | 1388 | - | - | - |
| Mov Cap-2 Maneuver | 716 | - | - | - | - | - |
| Stage 1 | 857 | - | - | - | - | - |
| Stage 2 | 924 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.8 | 0.4 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1388 | - | 716 | 874 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | 0.015 | 0.006 | - | - |
| HCM Control Delay (s) | 7.6 | 0 | 10.1 | 9.1 | - | - |
| HCM Lane LOS | A | A | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0 | 0 | - | - |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 9.4 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 20 | 5 | 5 | 5 | 5 | 35 | 5 | 80 | 5 | 45 | 115 | 30 |
| Future Vol, veh/h | 20 | 5 | 5 | 5 | 5 | 35 | 5 | 153 | 5 | 45 | 214 | 30 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 22 | 5 | 5 | 5 | 5 | 38 | 5 | 166 | 5 | 49 | 233 | 33 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 1 | 1 |
| HCM Control Delay | 8.5 | 8 | 9.2 | 9.9 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 67% | 11% | 100% | 0% |
| Vol Thru, % | 0% | 97% | 17% | 11% | 0% | 88% |
| Vol Right, % | 0% | 3% | 17% | 78% | 0% | 12% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 5 | 158 | 30 | 45 | 45 | 244 |
| LT Vol | 5 | 0 | 20 | 5 | 45 | 0 |
| Through Vol | 0 | 153 | 5 | 5 | 0 | 214 |
| RT Vol | 0 | 5 | 5 | 35 | 0 | 30 |
| Lane Flow Rate | 5 | 172 | 33 | 49 | 49 | 265 |
| Geometry Grp | 7 | 7 | 2 | 2 | 7 | 7 |
| Degree of Util (X) | 0.008 | 0.237 | 0.047 | 0.064 | 0.073 | 0.353 |
| Departure Headway (Hd) | 5.5 | 4.975 | 5.183 | 4.683 | 5.38 | 4.792 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 652 | 723 | 691 | 765 | 667 | 751 |
| Service Time | 3.226 | 2.701 | 3.216 | 2.714 | 3.104 | 2.516 |
| HCM Lane V/C Ratio | 0.008 | 0.238 | 0.048 | 0.064 | 0.073 | 0.353 |
| HCM Control Delay | 8.3 | 9.2 | 8.5 | 8 | 8.5 | 10.1 |
| HCM Lane LOS | A | A | A | A | A | B |
| HCM 95th-tile Q | 0 | 0.9 | 0.1 | 0.2 | 0.2 | 1.6 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.8 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 20 | 5 | 10 | 10 | 5 | 35 | 10 | 35 | 10 | 35 | 65 | 25 |
| Future Vol, veh/h | 20 | 5 | 10 | 10 | 5 | 35 | 10 | 108 | 10 | 35 | 164 | 25 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 22 | 5 | 11 | 11 | 5 | 38 | 11 | 117 | 11 | 38 | 178 | 27 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 1 | 1 |
| HCM Control Delay | 8.1 | 7.9 | 8.7 | 9.2 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 57% | 20% | 100% | 0% |
| Vol Thru, % | 0% | 92% | 14% | 10% | 0% | 87% |
| Vol Right, % | 0% | 8% | 29% | 70% | 0% | 13% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 10 | 118 | 35 | 50 | 35 | 189 |
| LT Vol | 10 | 0 | 20 | 10 | 35 | 0 |
| Through Vol | 0 | 108 | 5 | 5 | 0 | 164 |
| RT Vol | 0 | 10 | 10 | 35 | 0 | 25 |
| Lane Flow Rate | 11 | 128 | 38 | 54 | 38 | 205 |
| Geometry Grp | 7 | 7 | 2 | 2 | 7 | 7 |
| Degree of Util (X) | 0.016 | 0.175 | 0.051 | 0.068 | 0.057 | 0.274 |
| Departure Headway (Hd) | 5.46 | 4.898 | 4.852 | 4.51 | 5.37 | 4.793 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 657 | 734 | 738 | 795 | 669 | 754 |
| Service Time | 3.181 | 2.619 | 2.879 | 2.535 | 3.088 | 2.493 |
| HCM Lane V/C Ratio | 0.017 | 0.174 | 0.051 | 0.068 | 0.057 | 0.272 |
| HCM Control Delay | 8.3 | 8.7 | 8.1 | 7.9 | 8.4 | 9.3 |
| HCM Lane LOS | A | A | A | A | A | A |
| HCM 95th-tile Q | 0 | 0.6 | 0.2 | 0.2 | 0.2 | 1.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↔ | | | ↔ | | ↰ | ↱ | | ↰ | ↱ | |
| Traffic Vol, veh/h | 20 | 5 | 10 | 10 | 5 | 15 | 15 | 20 | 10 | 25 | 40 | 20 |
| Future Vol, veh/h | 20 | 5 | 10 | 10 | 5 | 15 | 15 | 93 | 10 | 25 | 139 | 20 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 75 | - | - | 75 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 22 | 5 | 11 | 11 | 5 | 16 | 16 | 101 | 11 | 27 | 151 | 22 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 365 | 360 | 162 | 363 | 366 | 107 | 173 | 0 | 0 | 112 | 0 | 0 |
| Stage 1 | 216 | 216 | - | 139 | 139 | - | - | - | - | - | - | - |
| Stage 2 | 149 | 144 | - | 224 | 227 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 591 | 567 | 883 | 593 | 562 | 947 | 1404 | - | - | 1478 | - | - |
| Stage 1 | 786 | 724 | - | 864 | 782 | - | - | - | - | - | - | - |
| Stage 2 | 854 | 778 | - | 779 | 716 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 563 | 551 | 883 | 568 | 546 | 947 | 1404 | - | - | 1478 | - | - |
| Mov Cap-2 Maneuver | 563 | 551 | - | 568 | 546 | - | - | - | - | - | - | - |
| Stage 1 | 777 | 711 | - | 854 | 773 | - | - | - | - | - | - | - |
| Stage 2 | 824 | 769 | - | 750 | 703 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 11.1 | 10.4 | 1 | 1 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1404 | - | - | 626 | 704 | 1478 | - | - |
| HCM Lane V/C Ratio | 0.012 | - | - | 0.061 | 0.046 | 0.018 | - | - |
| HCM Control Delay (s) | 7.6 | - | - | 11.1 | 10.4 | 7.5 | - | - |
| HCM Lane LOS | A | - | - | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.2 | 0.1 | 0.1 | - | - |