

East San Fernando Valley Transit Corridor

Final Environmental Impact Statement/ Final Environmental Impact Report

Addendum to the CLIMATE CHANGE TECHNICAL REPORT March 2020



IN ASSOCIATION WITH:

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ICF International. 2020. Addendum to the Climate Change Technical Report. East San Fernando Valley Transit Corridor Final Environmental Impact Statement/Final Environmental Impact Report. December. (ICF 00589.11.) Los Angeles, CA. Prepared for the Los Angeles County Metropolitan Transportation Authority, Los Angeles, CA.

Memorandum

Date: March 13, 2020

Subject: Addendum to the Climate Change Technical Report for East San Fernando Valley Transit Corridor

Project Description:

The Federal Transit Administration (FTA) and Los Angeles County Metropolitan Transportation Authority (Metro) have initiated a Final Environmental Impact Statement (FEIS)/Environmental Impact Report (FEIR) for the East San Fernando Valley Transit Corridor Project (Project). The FEIS/FEIR is being prepared with the FTA as the Lead Agency under the National Environmental Policy Act (NEPA) and Metro as the Lead Agency under the California Environmental Quality Act (CEQA).

In response to comments received on the Draft EIR/EIS, on June 28, 2018 the Metro Board of Directors formally identified a modified version of Alternative 4 (identified as “Alternative 4 Modified: At-Grade LRT” in the FEIS/FEIR) as the Locally Preferred Alternative (LPA). Factors that were considered by Metro in identifying Alternative 4 Modified: At-Grade LRT as the LPA include: the greater capacity of LRT compared to the BRT alternatives, the LPA could be constructed in less time and at reduced cost compared to the DEIS/DEIR Alternative 4, fewer construction impacts compared to DEIS/DEIR Alternative 4, and strong community support for a rail alternative. Additionally, Metro determined the LPA best fulfilled the project’s purpose and need.

The LPA consists of a 9.2-mile median running, at- grade LRT with 14 stations. Under the LPA, the LRT would be powered by electrified overhead lines and would travel 2.5 miles along the Metro-owned right-of-way used by the Antelope Valley Metrolink line and Union Pacific Railroad from the Sylmar/San Fernando Metrolink Station south to Van Nuys Boulevard. As the LPA approaches Van Nuys Boulevard it would transition to and operate in a median dedicated guideway along Van Nuys Boulevard for approximately 6.7 miles south to the Van Nuys Metro Orange Line Station. The 9.2-mile route of the LPA is illustrated in Figure 2-1. Similar to Alternative 4 described in the DEIS/DEIR, the LPA would include 14 stations. Additional details regarding the LPA characteristics, components, and facilities are discussed within Section 2.2 of the Final EIS/EIR.

In order to ensure the objectives of the project are met in a timely manner and avoid delays due to the timing of funding availability, Metro is considering constructing the LPA in two phases. The first phase, or Initial Operating Segment (IOS), would run along the same alignment and have the same LRT design features, MSF, and operating and service characteristics as those described for the LPA; however, the IOS would terminate at the Van Nuys/San Fernando Station on the north, rather than continuing 2.5 miles within the existing railroad right-of-way to the Sylmar/San Fernando Metrolink station, as would occur under the LPA. Therefore, the 6.7-mile alignment of the IOS would have a smaller project footprint than the LPA and would include 11 stations and 11 TPSS units instead of the 14 stations and 14 TPSS units proposed under the LPA.

Methodology:

A review of the above-referenced project has been conducted in order to identify any additional potential impacts related to emissions of greenhouse gases (GHG) as a result of identification of Alternative 4 Modified: At-Grade LRT as the LPA. Given that the long-term operations of the LPA would differ from the operations of the build alternatives identified in the DEIS/DEIR (e.g., the LPA would not have an underground segment), analysis specific to the LPA's effects on GHG emissions was undertaken. Emissions related to changes in vehicle miles traveled (VMT) and roadway network travel speeds were calculated using traffic data (VMT apportioned into 5-mile-per-hour speed bins) that were derived from a micro-simulation model that captures project effects and use of Caltrans' CT-EMFAC2017 emissions factors tool. The LPA was compared to the existing (2012) and future (2040) baseline conditions. It should be noted that discrepancies between emissions estimated in the DEIS/DEIR and the FEIS/FEIR are attributable to updated versions of the regional travel demand model and the CT-EMFAC model. The models were re-run subsequent to the circulation of the DEIS/DEIR to account for the modified version of Alternative 4 identified as the LPA and to provide a consistent basis of comparison between the LPA and No-Build Alternative.

With the exception that the LPA would not require the construction of an underground segment north of the Van Nuys Civic Center, construction methods and schedules would be similar to those identified in the DEIS/DEIR. As such, revisions to the analysis of construction-period effects related to GHG emissions are limited to emissions associated with the underground segment, which have been removed.

Result:

The following revisions were made in Section 4.7 of the FEIS/FEIR to account for the LPA:

No-Build Alternative

- Operational emissions of GHGs associated with the No-Build Alternative conditions were estimated using updated versions of the regional travel demand model and the CT-EMFAC model to provide a consistent basis of comparison. Revised emissions estimates for the No-Build Alternative are included in Table 4.7-1 of the FEIS/FEIR and Attachment 1 to this memorandum.

Locally Preferred Alternative (Alternative 4 Modified: At-Grade LRT)

- Construction-period GHG emissions associated with the LPA were updated to reflect that the LPA would be entirely at-grade and would not require construction of an underground segment. Revised emissions estimates are shown in Table 4.7-2 for the 2012 LPA scenario and Table 4.7-3 for the 2040 LPA scenario.
- Operational GHG emissions associated with the LPA conditions were estimated using VMT data
- specific to the LPA and the updated CT-EMFAC2017 model. Revised emissions estimates are included in Tables 4.7-2 for the 2012 LPA scenario and Table 4.7-3 for the 2040 LPA scenario.

Initial Operating Segment (IOS)

A quantitative assessment of GHG impacts related to the IOS has been included in Section 4.7.3.3 of the FEIR/FEIS.

ICF has reviewed the Climate Change Technical Report prepared for the DEIS/DEIR and has not identified new significant impacts. Please refer to Section 4.7, Climate Change of the FEIS/FEIR for the updated impacts discussion associated with the LPA. Please also see Attachment 1 for documentation of the revised analysis.

Attachment 1
Climate Change Revised Analysis

East San Fernando Valley Transit Corridor
Operational Mobile Source Emissions Summary

Pounds per Day

| Pollutant | Existing (2012) | | | Net Emissions (LPA - No Build) | Net Emissions (IOS - No Build) |
|---------------|-----------------|-------------------|-------------|--------------------------------|--------------------------------|
| | No Build | Project Emissions | IOS | | |
| PM2.5 | 39,631 | 39,627 | 39,628 | (4) | (3) |
| PM10 | 109,240 | 109,234 | 109,236 | (6) | (4) |
| Nox | 671,262 | 671,190 | 671,201 | (72) | (61) |
| CO | 2,543,910 | 2,543,576 | 2,543,619 | (333) | (290) |
| HC | 207,107 | 207,020 | 207,024 | (86) | (83) |
| TOG | 229,930 | 229,832 | 229,836 | (98) | (94) |
| ROG | 190,615 | 190,532 | 190,535 | (83) | (79) |
| 1,3-Butadiene | 744 | 744 | 744 | (0) | (0) |
| Acetaldehyde | 2,641 | 2,639 | 2,639 | (2) | (2) |
| Acrolein | 157 | 157 | 157 | (0) | (0) |
| Benzene | 4,360 | 4,358 | 4,358 | (2) | (2) |
| Diesel PM | 12,783 | 12,780 | 12,781 | (3) | (2) |
| Ethylbenzene | 2,675 | 2,674 | 2,674 | (1) | (1) |
| Formaldehyde | 6,415 | 6,412 | 6,412 | (4) | (4) |
| Naphthalene | 215 | 215 | 215 | (0) | (0) |
| POM | 173 | 173 | 173 | (0) | (0) |
| DEOG | 38,866 | 38,845 | 38,846 | (21) | (21) |
| CO2 | 395,605,676 | 395,556,030 | 395,562,746 | (49,646) | (42,930) |
| N2O | 26,195 | 26,193 | 26,193 | (2) | (2) |
| CH4 | 35,611 | 35,597 | 35,598 | (14) | (13) |
| BC | 7,209 | 7,208 | 7,208 | (2) | (1) |
| HFC | 795 | 794 | 794 | (0) | (0) |

| Pollutant | Future (2040) | | | Net Emissions (LPA - No Build) | Net Emissions (IOS - No Build) |
|---------------|---------------|-------------------|-------------|--------------------------------|--------------------------------|
| | No Build | Project Emissions | IOS | | |
| PM2.5 | 35,736 | 35,721 | 35,724 | (15) | (12) |
| PM10 | 130,420 | 130,401 | 130,413 | (19) | (7) |
| Nox | 174,018 | 173,677 | 173,693 | (340) | (325) |
| CO | 648,715 | 648,163 | 648,222 | (552) | (493) |
| HC | 66,366 | 66,146 | 66,152 | (219) | (213) |
| TOG | 71,220 | 70,985 | 70,991 | (235) | (229) |
| ROG | 53,827 | 53,614 | 53,619 | (213) | (208) |
| 1,3-Butadiene | 152 | 152 | 152 | (0) | (0) |
| Acetaldehyde | 371 | 370 | 370 | (1) | (0) |
| Acrolein | 33 | 33 | 33 | (0) | (0) |
| Benzene | 1,012 | 1,009 | 1,009 | (3) | (3) |
| Diesel PM | 903 | 904 | 904 | 1 | 1 |
| Ethylbenzene | 810 | 807 | 807 | (3) | (3) |
| Formaldehyde | 967 | 966 | 966 | (1) | (1) |
| Naphthalene | 75 | 74 | 74 | (0) | (0) |
| POM | 24 | 24 | 24 | (0) | (0) |
| DEOG | 3,323 | 3,319 | 3,319 | (4) | (4) |
| CO2 | 320,111,760 | 319,955,662 | 319,984,597 | (156,098) | (127,163) |
| N2O | 15,717 | 15,706 | 15,708 | (10) | (9) |
| CH4 | 20,498 | 20,450 | 20,452 | (48) | (46) |
| BC | 349 | 349 | 349 | (0) | (0) |
| HFC | 95 | 95 | 95 | (1) | (1) |

g/lb
453.592

Tons per Year

| Pollutant | Existing (2012) | | | Net Emissions (LPA - No Build) | Net Emissions (IOS - No Build) |
|---------------|-----------------|-------------------|---------------|--------------------------------|--------------------------------|
| | No Build | Project Emissions | IOS | | |
| PM2.5 | 6,876 | 6,875 | 6,875 | (1) | (1) |
| PM10 | 18,953 | 18,952 | 18,952 | (1) | (1) |
| Nox | 116,464 | 116,451 | 116,453 | (13) | (11) |
| CO | 441,368 | 441,310 | 441,318 | (58) | (50) |
| HC | 35,933 | 35,918 | 35,919 | (15) | (14) |
| TOG | 39,893 | 39,876 | 39,877 | (17) | (16) |
| ROG | 33,072 | 33,057 | 33,058 | (14) | (14) |
| 1,3-Butadiene | 129 | 129 | 129 | (0) | (0) |
| Acetaldehyde | 458 | 458 | 458 | (0) | (0) |
| Acrolein | 27 | 27 | 27 | (0) | (0) |
| Benzene | 756 | 756 | 756 | (0) | (0) |
| Diesel PM | 2,218 | 2,217 | 2,217 | (0) | (0) |
| Ethylbenzene | 464 | 464 | 464 | (0) | (0) |
| Formaldehyde | 1,113 | 1,112 | 1,112 | (1) | (1) |
| Naphthalene | 37 | 37 | 37 | (0) | (0) |
| POM | 30 | 30 | 30 | (0) | (0) |
| DEOG | 5,008 | 5,005 | 5,005 | (4) | (4) |
| CO2 | 62,267,043.60 | 62,259,229 | 62,260,286.60 | (7,814) | (6,757) |
| N2O | 4,123.03 | 4,123 | 4,123 | (0) | (0) |
| CH4 | 5,605 | 5,603 | 5,603 | (2) | (2) |
| BC | 1,251 | 1,251 | 1,251 | (0) | (0) |
| HFC | 138 | 138 | 138 | (0) | (0) |
| CO2e | 64,839,458.62 | 64,831,144.17 | 64,832,244.98 | (8,314) | (7,214) |

| Pollutant | Future (2040) | | | Net Emissions (LPA - No Build) | Net Emissions (IOS - No Build) |
|---------------|---------------|-------------------|---------------|--------------------------------|--------------------------------|
| | No Build | Project Emissions | IOS | | |
| PM2.5 | 6,200.22 | 6,199.31 | 6,199.87 | (1) | (0) |
| PM10 | 22,628 | 22,624.53 | 22,626.58 | (3) | (1) |
| Nox | 30,192 | 30,133 | 30,136 | (59) | (56) |
| CO | 112,552 | 112,456 | 112,467 | (96) | (86) |
| HC | 11,514 | 11,476 | 11,477 | (38) | (37) |
| TOG | 12,357 | 12,316 | 12,317 | (41) | (40) |
| ROG | 9,339 | 9,302 | 9,303 | (37) | (36) |
| 1,3-Butadiene | 26 | 26 | 26 | (0) | (0) |
| Acetaldehyde | 64 | 64 | 64 | (0) | (0) |
| Acrolein | 6 | 6 | 6 | (0) | (0) |
| Benzene | 176 | 175 | 175 | (0) | (0) |
| Diesel PM | 157 | 157 | 157 | 0 | 0 |
| Ethylbenzene | 141 | 140 | 140 | (1) | (1) |
| Formaldehyde | 168 | 168 | 168 | (0) | (0) |
| Naphthalene | 13 | 13 | 13 | (0) | (0) |
| POM | 4 | 4 | 4 | (0) | (0) |
| DEOG | 577 | 576 | 576 | (1) | (1) |
| CO2 | 50,384,547.35 | 50,359,978 | 50,364,532.35 | (24,569) | (20,015) |
| N2O | 2,473.79 | 2,472 | 2,472 | (2) | (1) |
| CH4 | 3,226 | 3,219 | 3,219 | (8) | (7) |
| BC | 61 | 61 | 61 | (0) | (0) |
| HFC | 16 | 16 | 16 | (0) | (0) |
| CO2e | 51,208,512.53 | 51,183,132.95 | 51,187,761.71 | (25,380) | (20,751) |

347 annualization factor from CARB
2000 lbs/ton
2204.62 lbs/metric ton

1
265 GWP per IPCC 2014
28 GWP per IPCC 2014
900 GWP per CARB 2016
1430 GWP per CARB 2019

TOTAL GHG EMISSIONS

| | Existing (2012) | | | Net Emissions (LPA - No Build) | Net Emissions (IOS - No Build) |
|--|-----------------|-------------------|------------|--------------------------------|--------------------------------|
| | No Build | Project Emissions | IOS | | |
| Maintenance Facility (Operations) | - | 1,416 | 1,416 | 1,416 | 1,416 |
| Vehicle Propulsion and Stations (Operations) | - | 12,904 | 9,397 | 12,904 | 9,397 |
| Mobile Source Emissions (Operations) | 64,839,459 | 64,831,144 | 64,832,245 | (8,314) | (7,214) |
| Roadway/Track, Sidewalks, Aboveground Stations (Construction) | - | 4,528 | 3,298 | 4,528 | 3,298 |
| Maintenance Facility (Construction) | - | 562 | 562 | 562 | 562 |
| TPSS, Bridges, and Other (Construction) | - | 347 | 347 | 347 | 347 |
| 30-Year Amortization of Construction Emissions | - | 181 | 140.22 | 181 | 140.22 |
| CO2e (including vehicle propulsion, stations, amortized construction, and vehicle traffic) | 64,839,459 | 64,845,645 | 64,843,199 | 6,187 | 3,740 |

| | Future (2040) | | | Net Emissions (LPA - No Build) | Net Emissions (IOS - No Build) |
|--|---------------|-------------------|------------|--------------------------------|--------------------------------|
| | No Build | Project Emissions | IOS | | |
| Maintenance Facility (Operations) | - | 1,416 | 1,416 | 1,416 | 1,416 |
| Vehicle Propulsion and Stations (Operations) | - | 12,904 | 9,397 | 12,904 | 9,397 |
| Mobile Source Emissions (Operations) | 51,208,513 | 51,183,133 | 51,187,762 | (25,380) | (20,751) |
| Roadway/Track, Sidewalks, Aboveground Stations (Construction) | - | 4,528 | 3,298 | 4,528 | 3,298 |
| Maintenance Facility (Construction) | - | 562 | 562 | 562 | 562 |
| TPSS, Bridges, and Other (Construction) | - | 347 | 347 | 347 | 347 |
| 30-Year Amortization of Construction Emissions | - | 181.23 | 140.22 | 181.23 | 140.22 |
| CO2e (including vehicle propulsion, stations, amortized construction, and vehicle traffic) | 51,208,513 | 51,197,634 | 51,198,715 | (10,878) | (9,797) |

Sources:

California Air Resources Board [CARB]. 2016. California's Black Carbon Emission Inventory Technical Support Document. Available: <https://ww2.arb.ca.gov/cc/inventory/sicp/doc/bc_inventory_tsd_20160411.pdf>. Accessed: November 22, 2019.
California Air Resources Board [CARB]. 2019. GHG Global Warming Potentials. Available: <https://ww2.arb.ca.gov/ghg-gwps>. Accessed: November 22, 2019.
Intergovernmental Panel on Climate Change. 2014. Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Available: <https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf>. Accessed: November 22, 2019.

0.01% 0.01%

-0.05% -0.04%

0.01% 0.01%

-0.02% -0.02%

East San Fernando Valley Transit Corridor
2012 and 2040 Daily VMT Data for No-Build and Locally Preferred Alternative (LPA)

2012 VMT/VHT Summary

| Bin Name | Speed Bins | Y12 No Build | | | | Y12 Build (Alt4_AG) | | | | Y12 Build_IOS (Alt4_AG) | | | |
|--------------|-------------------|--------------------|----------------|--------------------------|----------------|---------------------|----------------|-------------------|----------------|-------------------------|----------------|-----------------|---|
| | | VMT | % | VHT | % | VMT | % | VHT | % | VMT | % | VHT | % |
| 5 | 0.0 - 4.99 | 1,687,986 | 0.40% | 707,605 | 5.78% | 1,688,677 | 0.40% | 707,578 | 5.78% | 1,688,706 | 0.40% | | |
| 10 | 5.0 - 9.99 | 2,886,596 | 0.69% | 372,652 | 3.04% | 2,861,093 | 0.68% | 371,164 | 3.03% | 2,861,142 | 0.68% | | |
| 15 | 10.0 - 14.99 | 5,680,722 | 1.36% | 451,848 | 3.69% | 5,582,903 | 1.36% | 452,245 | 3.69% | 5,582,998 | 1.36% | | |
| 20 | 15.0 - 19.99 | 10,826,589 | 2.59% | 612,275 | 5.00% | 10,803,374 | 2.58% | 611,049 | 4.99% | 10,803,556 | 2.58% | | |
| 25 | 20.0 - 24.99 | 31,752,690 | 7.59% | 1,377,462 | 11.25% | 31,779,671 | 7.60% | 1,378,763 | 11.26% | 31,780,206 | 7.60% | | |
| 30 | 25.0 - 29.99 | 58,980,974 | 14.10% | 2,160,564 | 17.65% | 58,970,299 | 14.10% | 2,160,376 | 17.65% | 58,971,293 | 14.10% | | |
| 35 | 30.0 - 34.99 | 67,960,989 | 16.24% | 2,037,790 | 16.64% | 67,951,104 | 16.24% | 2,037,289 | 16.64% | 67,952,249 | 16.24% | | |
| 40 | 35.0 - 39.99 | 43,840,073 | 10.48% | 1,170,700 | 9.56% | 43,841,335 | 10.48% | 1,170,792 | 9.56% | 43,842,074 | 10.48% | | |
| 45 | 40.0 - 44.99 | 18,312,802 | 4.38% | 431,183 | 3.52% | 18,319,548 | 4.38% | 431,214 | 3.52% | 18,319,857 | 4.38% | | |
| 50 | 45.0 - 49.99 | 27,912,837 | 6.67% | 581,275 | 4.75% | 27,926,256 | 6.67% | 581,559 | 4.75% | 27,926,726 | 6.67% | | |
| 55 | 50.0 - 54.99 | 23,120,728 | 5.53% | 444,302 | 3.63% | 23,094,916 | 5.52% | 443,887 | 3.63% | 23,095,306 | 5.52% | | |
| 60 | 55.0 - 59.99 | 20,195,581 | 4.83% | 351,439 | 2.87% | 20,154,051 | 4.82% | 350,908 | 2.87% | 20,154,391 | 4.82% | | |
| 65 | 60.0 - 64.99 | 21,472,363 | 5.13% | 342,943 | 2.80% | 21,520,170 | 5.14% | 343,621 | 2.81% | 21,520,532 | 5.14% | | |
| 70 | 65.0 - 69.99 | 38,047,528 | 9.09% | 561,236 | 4.58% | 38,057,926 | 9.10% | 561,332 | 4.59% | 38,058,567 | 9.10% | | |
| 75 | 70.0 - 74.99 | 45,711,365 | 10.93% | 640,436 | 5.23% | 45,707,114 | 10.93% | 640,381 | 5.23% | 45,707,884 | 10.93% | | |
| 80 | 75.0 - 80.00 | 12,656 | 0.00% | 164 | 0.00% | 12,668 | 0.00% | 164 | 0.00% | 12,668 | 0.00% | | |
| TOTAL | | 418,382,480 | 100.00% | 12,243,273 | 100.00% | 418,371,107 | 100.00% | 12,242,323 | 100.00% | 418,378,157 | 100.00% | | |
| | VMT PER HR | 17,432,603 | | | | 17,432,129 | | | | 17,432,423 | | | |
| | | | | Daily Reduction | | -11,373 | | -0.0027% | | -4,324 | | -0.0010% | |
| | | | | Annual Reduction | | | | | | | | | |
| | | | | (annualization | | | | | | | | | |
| | | | | Factor of 347 per | | | | | | | | | |
| | | | | CAIB | | (3,946,431) | | | | (1,500,413) | | | |

Notes and Assumptions

Total 2040 VMT provided by KDA. Regional speed profile under the IOS assumed to be the same as under the LPA.

Total 2012 VMT data for the IOS estimated by scaling the 2012 LPA-to-IO5 VMT reductions based on the 2040 LPA-to-IO5 VMT reduction ratio (2.63:1). Regional speed profile under the IOS assumed to be the same as under the LPA.

2040 VMT/VHT Summary

| Bin Name | Speed Bins | Y40 No Build | | | | Y40 Build (Alt4_AG) | | | | Y40 Build_IOS (Alt4_AG) | | | |
|--------------|-------------------|--------------------|----------------|--------------------------|----------------|---------------------|----------------|-------------------|----------------|-------------------------|----------------|-----------------|---|
| | | VMT | % | VHT | % | VMT | % | VHT | % | VMT | % | VHT | % |
| 5 | 0.0 - 4.99 | 9,717,687 | 1.81% | 3,564,628 | 16.97% | 9,385,923 | 1.75% | 3,694,547 | 17.60% | 9,386,771 | 1.75% | | |
| 10 | 5.0 - 9.99 | 15,508,210 | 2.89% | 2,091,901 | 9.96% | 15,642,359 | 2.92% | 1,993,931 | 9.50% | 15,643,772 | 2.92% | | |
| 15 | 10.0 - 14.99 | 19,688,363 | 3.67% | 1,983,859 | 7.54% | 20,816,740 | 3.88% | 1,444,520 | 6.88% | 20,818,620 | 3.88% | | |
| 20 | 15.0 - 19.99 | 30,819,588 | 5.75% | 1,754,008 | 8.35% | 29,321,888 | 5.47% | 1,892,477 | 9.01% | 29,324,536 | 5.47% | | |
| 25 | 20.0 - 24.99 | 42,305,493 | 7.89% | 1,866,911 | 8.89% | 43,053,389 | 8.03% | 1,820,294 | 8.67% | 43,057,278 | 8.03% | | |
| 30 | 25.0 - 29.99 | 64,888,571 | 12.10% | 2,322,711 | 11.06% | 63,008,424 | 11.75% | 2,380,294 | 11.34% | 63,014,116 | 11.75% | | |
| 35 | 30.0 - 34.99 | 83,736,221 | 15.62% | 2,526,274 | 12.03% | 85,106,524 | 15.88% | 2,433,975 | 11.59% | 85,114,213 | 15.88% | | |
| 40 | 35.0 - 39.99 | 56,537,971 | 10.55% | 1,502,066 | 7.15% | 55,797,034 | 10.41% | 1,540,988 | 7.34% | 55,802,075 | 10.41% | | |
| 45 | 40.0 - 44.99 | 28,492,580 | 5.31% | 669,889 | 3.19% | 27,634,283 | 5.15% | 658,834 | 3.14% | 27,636,780 | 5.15% | | |
| 50 | 45.0 - 49.99 | 35,586,801 | 6.64% | 743,132 | 3.54% | 37,624,539 | 7.02% | 759,564 | 3.62% | 37,627,938 | 7.02% | | |
| 55 | 50.0 - 54.99 | 23,549,885 | 4.39% | 449,768 | 2.14% | 23,656,418 | 4.41% | 458,368 | 2.18% | 23,658,555 | 4.41% | | |
| 60 | 55.0 - 59.99 | 21,425,400 | 4.00% | 372,334 | 1.77% | 20,453,192 | 3.82% | 362,478 | 1.73% | 20,455,040 | 3.82% | | |
| 65 | 60.0 - 64.99 | 35,357,149 | 6.59% | 564,020 | 2.69% | 36,000,698 | 6.72% | 556,711 | 2.70% | 36,012,951 | 6.72% | | |
| 70 | 65.0 - 69.99 | 37,661,592 | 7.02% | 556,898 | 2.65% | 37,393,179 | 6.98% | 555,995 | 2.65% | 37,396,557 | 6.98% | | |
| 75 | 70.0 - 74.99 | 30,867,337 | 5.76% | 432,980 | 2.06% | 31,161,242 | 5.81% | 433,619 | 2.07% | 31,164,057 | 5.81% | | |
| 80 | 75.0 - 80.00 | 8,912 | 0.00% | 115 | 0.00% | 8,795 | 0.00% | 115 | 0.00% | 8,795 | 0.00% | | |
| TOTAL | | 536,151,760 | 100.00% | 21,001,501 | 100.00% | 536,073,629 | 100.00% | 20,996,710 | 100.00% | 536,122,055 | 100.00% | | |
| | VMT PER HR | 22,339,657 | | | | 22,336,401 | | | | 22,338,419 | | | |
| | | | | Daily Reduction | | -78,131 | | -0.01457% | | -29,705 | | -0.0055% | |
| | | | | Annual Reduction | | | | | | | | | |
| | | | | (annualization | | | | | | | | | |
| | | | | Factor of 347 per | | | | | | | | | |
| | | | | CAIB | | (27,111,457) | | | | (10,307,635) | | | |
| | | | | Daily Ridership | | 32,938 | | | | 24,474 | | | |

VMT Reduction Scalar (LPA Reduction/IOS Reduction)

2.63

East San Fernando Valley Transit Corridor
Emission Factors (Los Angeles County, 2012)

File Name: Los Angeles (SC) - 2012 - Annual.EF
 CT-EMFAC2017 Version: 1.0.2.27401
 Run Date: 11/22/2019 13:25
 Area: Los Angeles (SC)
 Analysis Year: 2012
 Season: Annual

| Vehicle Category | VMT Fraction Across Category | Diesel VMT Fraction Within Category | Gas VMT Fraction Within Category |
|------------------|---------------------------------|--|-------------------------------------|
| Truck 1 | 0.026 | 0.289 | 0.711 |
| Truck 2 | 0.037 | 0.907 | 0.089 |
| Non-Truck | 0.937 | 0.005 | 0.993 |

Road Type: Major/Collector
 Silt Loading Factor: CARB
 Precipitation Correction: None
 0.013 g/m2
 P = NA
 N = NA

Fleet Average Running Exhaust Emission Factors (grams/veh-mile)

| Pollutant Name | <= 5 mph | 10 mph | 15 mph | 20 mph | 25 mph | 30 mph | 35 mph | 40 mph | 45 mph | 50 mph | 55 mph | 60 mph | 65 mph | 70 mph | 75 mph |
|----------------|-----------|------------|------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| PM2.5 | 0.056853 | 0.044916 | 0.031107 | 0.021777 | 0.01758 | 0.015153 | 0.013569 | 0.012738 | 0.012614 | 0.013178 | 0.014432 | 0.015402 | 0.015708 | 0.015913 | 0.015913 |
| PM10 | 0.059963 | 0.047293 | 0.032748 | 0.022929 | 0.0185 | 0.015936 | 0.014264 | 0.013385 | 0.01325 | 0.013837 | 0.015148 | 0.016166 | 0.016494 | 0.016714 | 0.016714 |
| NOx | 1.546545 | 1.308092 | 1.01888 | 0.85117 | 0.781967 | 0.737512 | 0.705198 | 0.683755 | 0.672425 | 0.670839 | 0.678973 | 0.694027 | 0.714273 | 0.72568 | 0.72568 |
| CO | 5.973251 | 5.063136 | 4.333706 | 3.790782 | 3.393241 | 3.082407 | 2.833227 | 2.635391 | 2.483294 | 2.375298 | 2.313934 | 2.305631 | 2.364441 | 2.427569 | 2.427571 |
| HC | 0.88335 | 0.606462 | 0.388801 | 0.258771 | 0.195997 | 0.15762 | 0.132058 | 0.11552 | 0.105841 | 0.101877 | 0.103208 | 0.109652 | 0.121278 | 0.129641 | 0.129641 |
| TOG | 1.029377 | 0.712264 | 0.45027 | 0.294121 | 0.222269 | 0.178822 | 0.149668 | 0.130687 | 0.119519 | 0.114907 | 0.116382 | 0.123533 | 0.136144 | 0.145209 | 0.145209 |
| ROG | 0.761916 | 0.528282 | 0.332443 | 0.215469 | 0.16267 | 0.131017 | 0.109826 | 0.096138 | 0.08827 | 0.085335 | 0.087021 | 0.092847 | 0.10261 | 0.109611 | 0.109612 |
| 1,3-Butadiene | 0.004571 | 0.00305 | 0.002032 | 0.001418 | 0.001077 | 0.000864 | 0.000725 | 0.000639 | 0.00059 | 0.000573 | 0.000586 | 0.000627 | 0.000703 | 0.000758 | 0.000758 |
| Acetaldehyde | 0.024809 | 0.018584 | 0.010213 | 0.005306 | 0.003901 | 0.003173 | 0.00263 | 0.002247 | 0.002007 | 0.001902 | 0.001923 | 0.002012 | 0.002086 | 0.002138 | 0.002138 |
| Acrolein | 0.000917 | 0.000599 | 0.000412 | 0.000299 | 0.000228 | 0.000182 | 0.000153 | 0.000135 | 0.000126 | 0.000122 | 0.000125 | 0.000134 | 0.000151 | 0.000164 | 0.000164 |
| Benzene | 0.023394 | 0.015935 | 0.010263 | 0.006866 | 0.005192 | 0.004417 | 0.003496 | 0.003067 | 0.002824 | 0.002734 | 0.002788 | 0.002978 | 0.003309 | 0.003548 | 0.003548 |
| Diesel PM | 0.045188 | 0.037775 | 0.026339 | 0.018402 | 0.015132 | 0.013301 | 0.012095 | 0.011505 | 0.011529 | 0.012173 | 0.013446 | 0.014336 | 0.014423 | 0.014472 | 0.014472 |
| Ethylbenzene | 0.008476 | 0.005641 | 0.003773 | 0.002646 | 0.00201 | 0.001611 | 0.001353 | 0.001192 | 0.001103 | 0.001071 | 0.001094 | 0.001172 | 0.001314 | 0.001417 | 0.001417 |
| Formaldehyde | 0.056252 | 0.041505 | 0.023406 | 0.012768 | 0.009443 | 0.00766 | 0.006364 | 0.005469 | 0.004919 | 0.004682 | 0.004745 | 0.004987 | 0.005258 | 0.005451 | 0.005451 |
| Naphthalene | 0.000742 | 0.00052 | 0.000323 | 0.000206 | 0.000155 | 0.000125 | 0.000105 | 0.000091 | 0.000083 | 0.00008 | 0.000081 | 0.000086 | 0.000094 | 0.0001 | 0.000097 |
| POM | 0.001285 | 0.000927 | 0.000554 | 0.000332 | 0.000249 | 0.000203 | 0.00017 | 0.000149 | 0.000137 | 0.000132 | 0.000136 | 0.000144 | 0.000154 | 0.000161 | 0.000161 |
| DEOG | 0.296844 | 0.226198 | 0.120595 | 0.058871 | 0.042911 | 0.035024 | 0.028923 | 0.024502 | 0.02168 | 0.020384 | 0.020551 | 0.021324 | 0.021554 | 0.021695 | 0.021695 |
| CO2 | 996.65274 | 819.089581 | 668.918011 | 556.8177 | 479.1612 | 427.878 | 397.5149 | 383.6213 | 382.4362 | 390.7495 | 404.0998 | 418.5361 | 430.4422 | 433.9067 | 433.9067 |
| N2O | 0.0531 | 0.046164 | 0.039332 | 0.034496 | 0.031269 | 0.029103 | 0.02759 | 0.026357 | 0.025551 | 0.025381 | 0.025692 | 0.026791 | 0.027961 | 0.028783 | 0.028783 |
| CH4 | 0.146974 | 0.106564 | 0.070126 | 0.048225 | 0.03775 | 0.03107 | 0.026392 | 0.02317 | 0.021073 | 0.019909 | 0.019592 | 0.020235 | 0.021793 | 0.022894 | 0.022894 |
| BC | 0.026862 | 0.021897 | 0.015218 | 0.010639 | 0.008681 | 0.00757 | 0.006841 | 0.006472 | 0.006453 | 0.006781 | 0.007459 | 0.007949 | 0.00803 | 0.00808 | 0.008073 |

Fleet Average Fuel Consumption (gallons/veh-mile)

| Fuel Type | <= 5 mph | 10 mph | 15 mph | 20 mph | 25 mph | 30 mph | 35 mph | 40 mph | 45 mph | 50 mph | 55 mph | 60 mph | 65 mph | 70 mph | 75 mph |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------|----------|----------|----------|----------|----------|
| Gasoline | 0.104299 | 0.084747 | 0.069274 | 0.057624 | 0.049288 | 0.043712 | 0.040449 | 0.039224 | 0.039453 | 0.04053 | 0.042073 | 0.043304 | 0.044521 | 0.044795 | 0.044795 |
| Diesel | 0.012605 | 0.011177 | 0.009036 | 0.007636 | 0.006834 | 0.006321 | 0.005945 | 0.005644 | 0.005424 | 0.00531 | 0.005277 | 0.005309 | 0.00538 | 0.005384 | 0.005384 |

Fleet Average Running Loss Emission Factors (grams/veh-hour)

| Pollutant Name | Emission Factor |
|----------------|-----------------|
| HC | 2.708371 |
| TOG | 2.895599 |
| ROG | 2.895599 |
| 1,3-Butadiene | 0 |
| Benzene | 0.028956 |
| Ethylbenzene | 0.047488 |
| Naphthalene | 0.004054 |
| CH4 | 0.378157 |
| HFC | 0.029321 |

Fleet Average Tire Wear Factors (grams/veh-mile)

| Pollutant Name | Emission Factor |
|----------------|-----------------|
| PM2.5 | 0.002184 |
| PM10 | 0.008735 |

Fleet Average Brake Wear Factors (grams/veh-mile)

| Pollutant Name | Emission Factor |
|----------------|-----------------|
| PM2.5 | 0.017343 |
| PM10 | 0.040466 |

Fleet Average Road Dust Factors (grams/veh-mile)

| Pollutant Name | Emission Factor |
|----------------|-----------------|
| PM2.5 | 0.007942 |
| PM10 | 0.052944 |

=====END=====

East San Fernando Valley Transit Corridor
 Emission Factors (Los Angeles County, 2040)

File Name: Los Angeles (SC) - 2040 - Annual.EF
 CT-EMFAC2017 Version: 1.0.2.27401
 Run Date: 11/22/2019 13:34
 Area: Los Angeles (SC)
 Analysis Year: 2040
 Season: Annual

| Vehicle Category | VMT Fraction | Diesel VM1 Gas VMT Fraction | |
|------------------|-----------------|-----------------------------|-----------------|
| | Across Category | Within Cat | Within Category |
| Truck 1 | 0.034 | 0.572 | 0.428 |
| Truck 2 | 0.051 | 0.907 | 0.057 |
| Non-Truck | 0.915 | 0.014 | 0.935 |

Road Type: Major/Collector
 Silt Loading Factor: CARB 0.013 g/m2
 Precipitation Correction: None P = NA N = NA

Fleet Average Running Exhaust Emission Factors (grams/veh-mile)

| Pollutant Name | <= 5 mph | 10 mph | 15 mph | 20 mph | 25 mph | 30 mph | 35 mph | 40 mph | 45 mph | 50 mph | 55 mph | 60 mph | 65 mph | 70 mph | 75 mph |
|----------------|------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| PM2.5 | 0.004208 | 0.002869 | 0.002024 | 0.001507 | 0.001197 | 0.001028 | 0.000958 | 0.000964 | 0.001032 | 0.001156 | 0.001333 | 0.001567 | 0.001862 | 0.001903 | 0.001903 |
| PM10 | 0.004541 | 0.003088 | 0.002176 | 0.001617 | 0.001282 | 0.001099 | 0.001021 | 0.001025 | 0.001094 | 0.001223 | 0.001409 | 0.001655 | 0.001965 | 0.002009 | 0.002009 |
| Nx | 0.590718 | 0.450974 | 0.322392 | 0.257974 | 0.205132 | 0.158391 | 0.121209 | 0.093452 | 0.075041 | 0.065928 | 0.066093 | 0.075562 | 0.094336 | 0.094887 | 0.094887 |
| CO | 1.147029 | 0.97205 | 0.817759 | 0.712613 | 0.642425 | 0.587041 | 0.541031 | 0.502689 | 0.471014 | 0.445513 | 0.426165 | 0.413836 | 0.409796 | 0.411764 | 0.413868 |
| HC | 0.131532 | 0.090327 | 0.062013 | 0.045015 | 0.035357 | 0.029206 | 0.025088 | 0.022345 | 0.020605 | 0.019667 | 0.019453 | 0.020053 | 0.021574 | 0.022665 | 0.022829 |
| TOG | 0.14598 | 0.100191 | 0.067769 | 0.048433 | 0.03782 | 0.031147 | 0.026692 | 0.023736 | 0.021874 | 0.020889 | 0.020695 | 0.021391 | 0.023095 | 0.024344 | 0.02458 |
| ROG | 0.096695 | 0.06395 | 0.04079 | 0.027237 | 0.020256 | 0.016077 | 0.013417 | 0.011772 | 0.010864 | 0.010553 | 0.010793 | 0.011641 | 0.013217 | 0.014424 | 0.014632 |
| 1,3-Butadiene | 0.000629 | 0.000408 | 0.000271 | 0.00019 | 0.000143 | 0.000114 | 0.000095 | 0.000084 | 0.000077 | 0.000075 | 0.000078 | 0.000085 | 0.000096 | 0.000105 | 0.000105 |
| Acetaldehyde | 0.002244 | 0.001582 | 0.000853 | 0.000445 | 0.00031 | 0.000243 | 0.0002 | 0.000171 | 0.000154 | 0.000146 | 0.000147 | 0.000158 | 0.000177 | 0.000195 | 0.000195 |
| Acrolein | 0.000133 | 0.000086 | 0.000058 | 0.000042 | 0.000031 | 0.000025 | 0.000021 | 0.000018 | 0.000017 | 0.000017 | 0.000017 | 0.000019 | 0.000021 | 0.000023 | 0.000023 |
| Benzene | 0.002985 | 0.001958 | 0.001269 | 0.000864 | 0.000644 | 0.000512 | 0.000428 | 0.000375 | 0.000347 | 0.000337 | 0.000347 | 0.000377 | 0.000429 | 0.000467 | 0.000467 |
| Diesel PM | 0.000822 | 0.00074 | 0.000613 | 0.00052 | 0.000469 | 0.000462 | 0.000494 | 0.000563 | 0.000666 | 0.000804 | 0.000975 | 0.001183 | 0.001375 | 0.001376 | 0.001376 |
| Ethylbenzene | 0.001179 | 0.000765 | 0.00051 | 0.000358 | 0.000269 | 0.000214 | 0.000179 | 0.000157 | 0.000146 | 0.000142 | 0.000147 | 0.00016 | 0.000182 | 0.000198 | 0.000198 |
| Formaldehyde | 0.005396 | 0.003747 | 0.002102 | 0.001174 | 0.000833 | 0.000656 | 0.000542 | 0.000467 | 0.000424 | 0.000405 | 0.00041 | 0.000443 | 0.000498 | 0.000547 | 0.000547 |
| Naphthalene | 0.000113 | 0.000078 | 0.000053 | 0.000038 | 0.000029 | 0.000024 | 0.000021 | 0.000018 | 0.000017 | 0.000016 | 0.000016 | 0.000016 | 0.000018 | 0.000018 | 0.000014 |
| POM | 0.000108 | 0.000072 | 0.000045 | 0.00003 | 0.000022 | 0.000017 | 0.000015 | 0.000013 | 0.000012 | 0.000012 | 0.000012 | 0.000013 | 0.000015 | 0.000016 | 0.000016 |
| DEOG | 0.023678 | 0.0171 | 0.008602 | 0.003903 | 0.002585 | 0.00201 | 0.001626 | 0.001367 | 0.001202 | 0.001116 | 0.001097 | 0.001166 | 0.001285 | 0.001435 | 0.001435 |
| CO2 | 605.304321 | 494.5056 | 399.4216 | 334.2314 | 287.43 | 254.9414 | 235.3566 | 225.5703 | 223.7602 | 228.5734 | 237.2502 | 247.4993 | 257.7759 | 259.6725 | 259.6725 |
| N2O | 0.028351 | 0.023831 | 0.019013 | 0.016532 | 0.014637 | 0.01314 | 0.012098 | 0.01131 | 0.010835 | 0.01075 | 0.01101 | 0.011553 | 0.012249 | 0.012317 | 0.012317 |
| CH4 | 0.036954 | 0.028605 | 0.022324 | 0.018227 | 0.015471 | 0.013488 | 0.012007 | 0.010886 | 0.010036 | 0.009398 | 0.008939 | 0.008693 | 0.008644 | 0.008548 | 0.008557 |
| BC | 0.001018 | 0.000687 | 0.000482 | 0.000356 | 0.00028 | 0.000235 | 0.000212 | 0.000204 | 0.000209 | 0.000225 | 0.000251 | 0.000288 | 0.000329 | 0.000339 | 0.000338 |

Fleet Average Fuel Consumption (gallons/veh-mile)

| Fuel Type | <= 5 mph | 10 mph | 15 mph | 20 mph | 25 mph | 30 mph | 35 mph | 40 mph | 45 mph | 50 mph | 55 mph | 60 mph | 65 mph | 70 mph | 75 mph |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Gasoline | 0.055291 | 0.044907 | 0.03674 | 0.030546 | 0.026111 | 0.023157 | 0.021442 | 0.0208 | 0.020899 | 0.021518 | 0.02228 | 0.022988 | 0.023617 | 0.023844 | 0.023844 |
| Diesel | 0.013075 | 0.010878 | 0.008377 | 0.007185 | 0.006281 | 0.005545 | 0.005043 | 0.004671 | 0.004453 | 0.004437 | 0.004575 | 0.004839 | 0.005193 | 0.005205 | 0.005205 |

Fleet Average Running Loss Emission Factors (grams/veh-hour)

| Pollutant Name | Emission Factor |
|----------------|-----------------|
| HC | 0.63316 |
| TOG | 0.67693 |
| ROG | 0.67693 |
| 1,3-Butadiene | 0 |
| Benzene | 0.006769 |
| Ethylbenzene | 0.011102 |
| Naphthalene | 0.000948 |
| CH4 | 0.113614 |
| HFC | 0.002013 |

Fleet Average Tire Wear Factors (grams/veh-mile)

| Pollutant Name | Emission Factor |
|----------------|-----------------|
| PM2.5 | 0.002261 |
| PM10 | 0.009043 |

Fleet Average Brake Wear Factors (grams/veh-mile)

| Pollutant Name | Emission Factor |
|----------------|-----------------|
| PM2.5 | 0.017837 |
| PM10 | 0.04162 |

Fleet Average Road Dust Factors (grams/veh-mile)

| Pollutant Name | Emission Factor |
|----------------|-----------------|
| PM2.5 | 0.008726 |
| PM10 | 0.058174 |

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East San Fernando Valley Transit Corridor
 Daily Emissions - 2012 No-Build Conditions

File Name: Los Angeles (SC) - 2012 - Annual.EM
 CT-EMFAC2017 Version: 1.0.2.27401
 Run Date: 11/22/2019 13:28
 Area: Los Angeles (SC)
 Analysis Year: 2012
 Season: Annual

| Vehicle Category | VMT Fraction | Diesel VMT Fraction | Gas VMT Fraction |
|------------------|-----------------|---------------------|------------------|
| | Across Category | Within Category | Within Category |
| Truck 1 | 0.026 | 0.289 | 0.711 |
| Truck 2 | 0.037 | 0.907 | 0.089 |
| Non-Truck | 0.937 | 0.005 | 0.993 |

Road Type: Major/Collector
 Silt Loading Factor: CARB 0.013 g/m2
 Precipitation Correction: None P = NA N = NA

Road Length: 1 miles
 Volume: 17,432,600 vehicles per hour
 Number of Hours: 24 hours

VMT Distribution by Speed Bin (mph):

| | |
|----------|--------|
| <= 5 mph | 0.40% |
| 10 mph | 0.69% |
| 15 mph | 1.36% |
| 20 mph | 2.59% |
| 25 mph | 7.59% |
| 30 mph | 14.10% |
| 35 mph | 16.24% |
| 40 mph | 10.48% |
| 45 mph | 4.38% |
| 50 mph | 6.67% |
| 55 mph | 5.53% |
| 60 mph | 4.83% |
| 65 mph | 5.13% |
| 70 mph | 9.09% |
| 75 mph | 10.92% |

Summary of Emissions and Consumption

| Pollutant Name | Running Exhaust (grams) | Running Loss (grams) | Tire Wear (grams) | Brake Wear (grams) | Road Dust (grams) | Total (grams) | Total (US tons) |
|----------------|----------------------------|-------------------------|----------------------|-----------------------|----------------------|------------------|--------------------|
| PM2.5 | 6,483,815.30 | - | 913,747.40 | 7,256,007.50 | 3,322,794.00 | 17,976,364.10 | 19.816 |
| PM10 | 6,814,676.30 | - | 3,654,571.20 | 16,930,265.80 | 22,150,843.20 | 49,550,356.50 | 54.62 |
| NOx | 304,479,076.90 | - | - | - | - | 304,479,076.90 | 335.631 |
| CO | 1,153,897,029.40 | - | - | - | - | 1,153,897,029.40 | 1,271.95 |
| HC | 60,648,102.10 | 33,293,770.80 | - | - | - | 93,941,873.00 | 103.553 |
| TOG | 68,699,259.00 | 35,595,348.10 | - | - | - | 104,294,607.10 | 114.965 |
| ROG | 50,865,999.00 | 35,595,348.10 | - | - | - | 86,461,347.10 | 95.307 |
| 1,3-Butadiene | 337,407.30 | 0 | - | - | - | 337,407.30 | 0.372 |
| Acetaldehyde | 1,197,821.30 | - | - | - | - | 1,197,821.30 | 1.32 |
| Acrolein | 71,423.90 | - | - | - | - | 71,423.90 | 0.079 |
| Benzene | 1,621,616.20 | 355,953.60 | - | - | - | 1,977,569.80 | 2.18 |
| Diesel PM | 5,798,272.00 | - | - | - | - | 5,798,272.00 | 6.392 |
| Ethylbenzene | 629,595.70 | 583,765.90 | - | - | - | 1,213,361.60 | 1.338 |
| Formaldehyde | 2,909,995.20 | - | - | - | - | 2,909,995.20 | 3.208 |
| Naphthalene | 47,851.10 | 49,835.50 | - | - | - | 97,686.60 | 0.108 |
| POM | 78,577.30 | - | - | - | - | 78,577.30 | 0.087 |
| DEOG | 13,093,586.60 | - | - | - | - | 13,093,586.60 | 14.433 |
| CO2 | 1.79E+11 | - | - | - | - | 1.79E+11 | 197,802.68 |
| N2O | 11,881,920.50 | - | - | - | - | 11,881,920.50 | 13.098 |
| CH4 | 11,504,299.70 | 4,648,651.40 | - | - | - | 16,152,951.00 | 17.806 |
| BC | 3,270,031.70 | - | - | - | - | 3,270,031.70 | 3.605 |
| HFC | - | 360,440.50 | - | - | - | 360,440.50 | 0.397 |

Fuel Consumption

| Fuel Type | (gallons) |
|-----------|---------------|
| Gasoline | 18,457,990.51 |
| Diesel | 2,471,991.00 |

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 END
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East San Fernando Valley Transit Corridor

Daily Emissions - 2012 Locally Preferred Alternative Conditions

File Name: Los Angeles (SC) - 2012 - Annual.EM
 CT-EMFAC2017 Version: 1.0.2.27401
 Run Date: 11/22/2019 13:32
 Area: Los Angeles (SC)
 Analysis Year: 2012
 Season: Annual

| Vehicle Category | VTM Fraction | Diesel VMT Fraction | Gas VMT Fraction |
|------------------|-----------------|---------------------|------------------|
| | Across Category | Within Category | Within Category |
| Truck 1 | 0.026 | 0.289 | 0.711 |
| Truck 2 | 0.037 | 0.907 | 0.089 |
| Non-Truck | 0.937 | 0.005 | 0.993 |

Road Type: Major/Collector
 Silt Loading Factor: CARB 0.013 g/m2
 Precipitation Correction: None P = NA N = NA

Road Length: 1 miles
 Volume: 17,432,130 vehicles per hour
 Number of Hours: 24 hours

VTM Distribution by Speed Bin (mph):

| | |
|----------|--------|
| <= 5 mph | 0.40% |
| 10 mph | 0.68% |
| 15 mph | 1.36% |
| 20 mph | 2.58% |
| 25 mph | 7.60% |
| 30 mph | 14.10% |
| 35 mph | 16.24% |
| 40 mph | 10.48% |
| 45 mph | 4.38% |
| 50 mph | 6.67% |
| 55 mph | 5.52% |
| 60 mph | 4.82% |
| 65 mph | 5.14% |
| 70 mph | 9.10% |
| 75 mph | 10.93% |

Summary of Emissions and Consumption

| Pollutant Name | Running Exhaust (grams) | Running Loss (grams) | Tire Wear (grams) | Brake Wear (grams) | Road Dust (grams) | Total (grams) | Total (US tons) |
|----------------|-------------------------|----------------------|-------------------|--------------------|-------------------|------------------|-----------------|
| PM2.5 | 6,482,324.00 | - | 913,722.50 | 7,255,809.30 | 3,322,703.20 | 17,974,559.00 | 19.814 |
| PM10 | 6,813,104.80 | - | 3,654,471.40 | 16,929,803.50 | 22,150,238.40 | 49,547,618.10 | 54.617 |
| NOx | 304,446,301.30 | - | - | - | - | 304,446,301.30 | 335.595 |
| CO | 1,153,745,834.50 | - | - | - | - | 1,153,745,834.50 | 1,271.79 |
| HC | 60,625,463.00 | 33,277,247.10 | - | - | - | 93,902,710.10 | 103.51 |
| TOG | 68,672,386.40 | 35,577,682.10 | - | - | - | 104,250,068.50 | 114.916 |
| ROG | 50,846,238.50 | 35,577,682.10 | - | - | - | 86,423,920.60 | 95.266 |
| 1,3-Butadiene | 337,298.30 | 0 | - | - | - | 337,298.30 | 0.372 |
| Acetaldehyde | 1,197,053.80 | - | - | - | - | 1,197,053.80 | 1.32 |
| Acrolein | 71,403.10 | - | - | - | - | 71,403.10 | 0.079 |
| Benzene | 1,621,029.30 | 355,777.00 | - | - | - | 1,976,806.20 | 2.179 |
| Diesel PM | 5,797,048.50 | - | - | - | - | 5,797,048.50 | 6.39 |
| Ethylbenzene | 629,394.60 | 583,476.20 | - | - | - | 1,212,870.80 | 1.337 |
| Formaldehyde | 2,908,309.10 | - | - | - | - | 2,908,309.10 | 3.206 |
| Naphthalene | 47,831.10 | 49,810.70 | - | - | - | 97,641.80 | 0.108 |
| POM | 78,541.10 | - | - | - | - | 78,541.10 | 0.087 |
| DEOG | 13,084,063.00 | - | - | - | - | 13,084,063.00 | 14.423 |
| CO2 | 1.79E+11 | - | - | - | - | 1.79E+11 | 197,777.85 |
| N2O | 11,880,912.10 | - | - | - | - | 11,880,912.10 | 13.096 |
| CH4 | 11,500,250.10 | 4,646,344.20 | - | - | - | 16,146,594.30 | 17.799 |
| BC | 3,269,311.50 | - | - | - | - | 3,269,311.50 | 3.604 |
| HFC | - | 360,261.60 | - | - | - | 360,261.60 | 0.397 |

Fuel Consumption

| Fuel Type | (gallons) |
|-----------|---------------|
| Gasoline | 18,455,631.00 |
| Diesel | 2,471,655.02 |

=====
 END
 =====

East San Fernando Valley Transit Corridor

Daily Emissions - 2012 Initial Operating Segment Conditions

File Name: Los Angeles (SC) - 2012 - Annual.EM
 CT-EMFAC2017 Version: 1.0.2.27401
 Run Date: 6/4/2020 10:09
 Area: Los Angeles (SC)
 Analysis Year: 2012
 Season: Annual

| Vehicle Category | VTM Fraction | Diesel VMT Fraction | Gas VMT Fraction |
|------------------|-----------------|---------------------|------------------|
| | Across Category | Within Category | Within Category |
| Truck 1 | 0.026 | 0.289 | 0.711 |
| Truck 2 | 0.037 | 0.907 | 0.089 |
| Non-Truck | 0.937 | 0.005 | 0.993 |

Road Type: Major/Collector
 Silt Loading Factor: CARB 0.013 g/m2
 Precipitation Correction: None P = NA N = NA

Road Length: 1 miles
 Volume: 17,432,420 vehicles per hour
 Number of Hours: 24 hours

VMT Distribution by Speed Bin (mph):

| | |
|----------|--------|
| <= 5 mph | 0.40% |
| 10 mph | 0.68% |
| 15 mph | 1.36% |
| 20 mph | 2.58% |
| 25 mph | 7.60% |
| 30 mph | 14.10% |
| 35 mph | 16.24% |
| 40 mph | 10.48% |
| 45 mph | 4.38% |
| 50 mph | 6.67% |
| 55 mph | 5.52% |
| 60 mph | 4.82% |
| 65 mph | 5.14% |
| 70 mph | 9.10% |
| 75 mph | 10.93% |

Summary of Emissions and Consumption

| Pollutant Name | Running Exhaust (grams) | Running Loss (grams) | Tire Wear (grams) | Brake Wear (grams) | Road Dust (grams) | Total (grams) | Total (US tons) |
|----------------|-------------------------|----------------------|-------------------|--------------------|-------------------|------------------|-----------------|
| PM2.5 | 6,482,434.00 | - | 913,738.00 | 7,255,932.50 | 3,322,759.60 | 17,974,864.20 | 19.814 |
| PM10 | 6,813,220.50 | - | 3,654,533.40 | 16,930,091.00 | 22,150,614.50 | 49,548,459.40 | 54.618 |
| NOx | 304,451,470.80 | - | - | - | - | 304,451,470.80 | 335.6 |
| CO | 1,153,765,425.30 | - | - | - | - | 1,153,765,425.30 | 1,271.81 |
| HC | 60,626,492.40 | 33,277,802.30 | - | - | - | 93,904,294.70 | 103.512 |
| TOG | 68,673,552.50 | 35,578,275.70 | - | - | - | 104,251,828.10 | 114.918 |
| ROG | 50,847,101.90 | 35,578,275.70 | - | - | - | 86,425,377.50 | 95.268 |
| 1,3-Butadiene | 337,304.10 | 0 | - | - | - | 337,304.10 | 0.372 |
| Acetaldehyde | 1,197,074.20 | - | - | - | - | 1,197,074.20 | 1.32 |
| Acrolein | 71,404.40 | - | - | - | - | 71,404.40 | 0.079 |
| Benzene | 1,621,056.80 | 355,782.90 | - | - | - | 1,976,839.70 | 2.179 |
| Diesel PM | 5,797,146.90 | - | - | - | - | 5,797,146.90 | 6.39 |
| Ethylbenzene | 629,405.30 | 583,485.90 | - | - | - | 1,212,891.20 | 1.337 |
| Formaldehyde | 2,908,358.50 | - | - | - | - | 2,908,358.50 | 3.206 |
| Naphthalene | 47,831.90 | 49,811.60 | - | - | - | 97,643.50 | 0.108 |
| POM | 78,542.40 | - | - | - | - | 78,542.40 | 0.087 |
| DEOG | 13,084,285.20 | - | - | - | - | 13,084,285.20 | 14.423 |
| CO2 | 1.79E+11 | - | - | - | - | 1.79E+11 | 197,781.21 |
| N2O | 11,881,113.80 | - | - | - | - | 11,881,113.80 | 13.097 |
| CH4 | 11,500,445.40 | 4,646,421.70 | - | - | - | 16,146,867.10 | 17.799 |
| BC | 3,269,367.00 | - | - | - | - | 3,269,367.00 | 3.604 |
| HFC | - | 360,267.70 | - | - | - | 360,267.70 | 0.397 |

Fuel Consumption

| Fuel Type | (gallons) |
|-----------|---------------|
| Gasoline | 18,455,944.38 |
| Diesel | 2,471,696.99 |

=====**END**=====

East San Fernando Valley Transit Corridor
 Daily Emissions - 2040 No-Build Conditions

File Name: Los Angeles (SC) - 2040 - Annual.EM
 CT-EMFAC2017 Version: 1.0.2.27401
 Run Date: 11/22/2019 13:38
 Area: Los Angeles (SC)
 Analysis Year: 2040
 Season: Annual

| Vehicle Category | VTM Fraction | Diesel VMT Fraction | Gas VMT Fraction |
|------------------|-----------------|---------------------|------------------|
| | Across Category | Within Category | Within Category |
| Truck 1 | 0.034 | 0.572 | 0.428 |
| Truck 2 | 0.051 | 0.907 | 0.057 |
| Non-Truck | 0.915 | 0.014 | 0.935 |

Road Type: Major/Collector
 Silt Loading Factor: CARB 0.013 g/m2
 Precipitation Correction: None P = NA N = NA

Road Length: 1 miles
 Volume: 22,339,660 vehicles per hour
 Number of Hours: 24 hours

VTM Distribution by Speed Bin (mph):

| | |
|----------|--------|
| <= 5 mph | 1.82% |
| 10 mph | 2.89% |
| 15 mph | 3.67% |
| 20 mph | 5.75% |
| 25 mph | 7.89% |
| 30 mph | 12.10% |
| 35 mph | 15.62% |
| 40 mph | 10.55% |
| 45 mph | 5.31% |
| 50 mph | 6.64% |
| 55 mph | 4.39% |
| 60 mph | 4.00% |
| 65 mph | 6.59% |
| 70 mph | 7.02% |
| 75 mph | 5.76% |

Summary of Emissions and Consumption

| Pollutant Name | Running Exhaust (grams) | Running Loss (grams) | Tire Wear (grams) | Brake Wear (grams) | Road Dust (grams) | Total (grams) | Total (US tons) |
|----------------|-------------------------|----------------------|-------------------|--------------------|-------------------|----------------|-----------------|
| PM2.5 | 755,583.30 | - | 1,212,239.10 | 9,563,338.20 | 4,678,460.00 | 16,209,620.70 | 17.868 |
| PM10 | 804,265.10 | - | 4,848,420.10 | 22,314,636.20 | 31,190,091.10 | 59,157,412.60 | 65.21 |
| NOx | 78,932,970.40 | - | - | - | - | 78,932,970.40 | 87.009 |
| CO | 294,252,078.40 | - | - | - | - | 294,252,078.40 | 324.357 |
| HC | 16,541,455.30 | 13,561,560.20 | - | - | - | 30,103,015.60 | 33.183 |
| TOG | 17,805,602.50 | 14,499,063.70 | - | - | - | 32,304,666.20 | 35.61 |
| ROG | 9,916,523.30 | 14,499,063.70 | - | - | - | 24,415,587.00 | 26.914 |
| 1,3-Butadiene | 68,909.30 | 0 | - | - | - | 68,909.30 | 0.076 |
| Acetaldehyde | 168,258.40 | - | - | - | - | 168,258.40 | 0.185 |
| Acrolein | 14,991.20 | - | - | - | - | 14,991.20 | 0.017 |
| Benzene | 313,871.10 | 144,984.20 | - | - | - | 458,855.30 | 0.506 |
| Diesel PM | 409,377.00 | - | - | - | - | 409,377.00 | 0.451 |
| Ethylbenzene | 129,664.30 | 237,792.10 | - | - | - | 367,456.40 | 0.405 |
| Formaldehyde | 438,584.30 | - | - | - | - | 438,584.30 | 0.483 |
| Naphthalene | 13,605.30 | 20,305.10 | - | - | - | 33,910.40 | 0.037 |
| POM | 10,961.20 | - | - | - | - | 10,961.20 | 0.012 |
| DEOG | 1,507,344.10 | - | - | - | - | 1,507,344.10 | 1.662 |
| CO2 | 1.45E+11 | - | - | - | - | 1.45E+11 | 160,055.75 |
| N2O | 7,129,050.20 | - | - | - | - | 7,129,050.20 | 7.858 |
| CH4 | 6,864,318.70 | 2,433,481.50 | - | - | - | 9,297,800.20 | 10.249 |
| BC | 158,287.70 | - | - | - | - | 158,287.70 | 0.174 |
| HFC | - | 43,116.10 | - | - | - | 43,116.10 | 0.048 |

Fuel Consumption

| Fuel Type | (gallons) |
|-----------|---------------|
| Gasoline | 13,325,743.04 |
| Diesel | 3,030,773.02 |

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 END
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East San Fernando Valley Transit Corridor
Daily Emissions - 2040 Locally Preferred Alternative Conditions

File Name: Los Angeles (SC) - 2040 - Annual.EM
 CT-EMFAC2017 Version: 1.0.2.27401
 Run Date: 11/22/2019 13:40
 Area: Los Angeles (SC)
 Analysis Year: 2040
 Season: Annual

| Vehicle Category | VMT Fraction | Diesel VMT Fraction | Gas VMT Fraction |
|------------------|-----------------|---------------------|------------------|
| | Across Category | Within Category | Within Category |
| Truck 1 | 0.034 | 0.572 | 0.428 |
| Truck 2 | 0.051 | 0.907 | 0.057 |
| Non-Truck | 0.915 | 0.014 | 0.935 |

Road Type: Major/Collector
 Silt Loading Factor: CARB 0.013 g/m2
 Precipitation Correction: None P = NA N = NA

Road Length: 1 miles
 Volume: 22,336,400 vehicles per hour
 Number of Hours: 24 hours

VMT Distribution by Speed Bin (mph):

| | |
|----------|--------|
| <= 5 mph | 1.75% |
| 10 mph | 2.92% |
| 15 mph | 3.88% |
| 20 mph | 5.47% |
| 25 mph | 8.03% |
| 30 mph | 11.75% |
| 35 mph | 15.88% |
| 40 mph | 10.41% |
| 45 mph | 5.15% |
| 50 mph | 7.02% |
| 55 mph | 4.41% |
| 60 mph | 3.82% |
| 65 mph | 6.72% |
| 70 mph | 6.98% |
| 75 mph | 5.81% |

Summary of Emissions and Consumption

| Pollutant Name | Running Exhaust (grams) | Running Loss (grams) | Tire Wear (grams) | Brake Wear (grams) | Road Dust (grams) | Total (grams) | Total (US tons) |
|----------------|-------------------------|----------------------|-------------------|--------------------|-------------------|----------------|-----------------|
| PM2.5 | 755,453.60 | - | 1,212,062.40 | 9,561,944.30 | 4,677,778.20 | 16,207,238.50 | 17.865 |
| PM10 | 804,101.20 | - | 4,847,713.40 | 22,311,383.90 | 31,185,545.20 | 59,148,743.60 | 65.2 |
| NOx | 78,778,550.30 | - | - | - | - | 78,778,550.30 | 86.838 |
| CO | 294,001,703.20 | - | - | - | - | 294,001,703.20 | 324.081 |
| HC | 16,517,811.40 | 13,485,673.50 | - | - | - | 30,003,484.90 | 33.073 |
| TOG | 17,780,099.00 | 14,417,930.90 | - | - | - | 32,198,029.90 | 35.492 |
| ROG | 9,901,160.50 | 14,417,930.90 | - | - | - | 24,319,091.50 | 26.807 |
| 1,3-Butadiene | 68,797.10 | 0 | - | - | - | 68,797.10 | 0.076 |
| Acetaldehyde | 168,028.10 | - | - | - | - | 168,028.10 | 0.185 |
| Acrolein | 14,966.70 | - | - | - | - | 14,966.70 | 0.016 |
| Benzene | 313,375.90 | 144,172.90 | - | - | - | 457,548.80 | 0.504 |
| Diesel PM | 409,850.20 | - | - | - | - | 409,850.20 | 0.452 |
| Ethylbenzene | 129,457.70 | 236,461.50 | - | - | - | 365,919.20 | 0.403 |
| Formaldehyde | 437,955.80 | - | - | - | - | 437,955.80 | 0.483 |
| Naphthalene | 13,585.30 | 20,191.50 | - | - | - | 33,776.80 | 0.037 |
| POM | 10,946.30 | - | - | - | - | 10,946.30 | 0.012 |
| DEOG | 1,505,431.00 | - | - | - | - | 1,505,431.00 | 1.659 |
| CO2 | 1.45E+11 | - | - | - | - | 1.45E+11 | 159,977.70 |
| N2O | 7,124,333.60 | - | - | - | - | 7,124,333.60 | 7.853 |
| CH4 | 6,856,284.50 | 2,419,864.40 | - | - | - | 9,276,148.90 | 10.225 |
| BC | 158,188.20 | - | - | - | - | 158,188.20 | 0.174 |
| HFC | - | 42,874.90 | - | - | - | 42,874.90 | 0.047 |

Fuel Consumption

| Fuel Type | (gallons) |
|-----------|---------------|
| Gasoline | 13,320,060.29 |
| Diesel | 3,028,591.62 |

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 END
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East San Fernando Valley Transit Corridor

Daily Emissions - 2040 Initial Operating Segment Conditions

File Name: Los Angeles (SC) - 2040 - Annual.EM
 CT-EMFAC2017 Version: 1.0.2.27401
 Run Date: 6/4/2020 11:30
 Area: Los Angeles (SC)
 Analysis Year: 2040
 Season: Annual

| Vehicle Category | VMT Fraction | Diesel VMT Frac | Gas VMT Fraction |
|------------------|-----------------|-----------------|------------------|
| | Across Category | Within Category | Within Category |
| Truck 1 | 0.034 | 0.572 | 0.428 |
| Truck 2 | 0.051 | 0.907 | 0.057 |
| Non-Truck | 0.915 | 0.014 | 0.935 |

Road Type: Major/Collector
 Silt Loading Factor: CARB 0.013 g/m2
 Precipitation Correction: None P = NA N = NA

Road Length: 1 miles
 Volume: 22,338,420 vehicles per hour
 Number of Hours: 24 hours

VMT Distribution by Speed Bin (mph):

| | |
|----------|--------|
| <= 5 mph | 1.75% |
| 10 mph | 2.92% |
| 15 mph | 3.88% |
| 20 mph | 5.47% |
| 25 mph | 8.03% |
| 30 mph | 11.75% |
| 35 mph | 15.88% |
| 40 mph | 10.41% |
| 45 mph | 5.15% |
| 50 mph | 7.02% |
| 55 mph | 4.41% |
| 60 mph | 3.82% |
| 65 mph | 6.72% |
| 70 mph | 6.98% |
| 75 mph | 5.81% |

Summary of Emissions and Consumption

| Pollutant Name | Running Exhaust (grams) | Running Loss (grams) | Tire Wear (grams) | Brake Wear (grams) | Road Dust (grams) | Total (grams) | Total (US tons) |
|----------------|----------------------------|-------------------------|----------------------|-----------------------|----------------------|------------------|--------------------|
| PM2.5 | 755,521.90 | - | 1,212,172.00 | 9,562,809.10 | 4,678,201.20 | 16,208,704.20 | 17.867 |
| PM10 | 804,173.90 | - | 4,848,151.80 | 22,313,401.60 | 31,188,365.40 | 59,154,092.80 | 65.206 |
| NOx | 78,785,674.70 | - | - | - | - | 78,785,674.70 | 86.846 |
| CO | 294,028,291.30 | - | - | - | - | 294,028,291.30 | 324.111 |
| HC | 16,519,305.20 | 13,486,892.90 | - | - | - | 30,006,198.10 | 33.076 |
| TOG | 17,781,706.90 | 14,419,234.70 | - | - | - | 32,200,941.60 | 35.495 |
| ROG | 9,902,056.00 | 14,419,234.70 | - | - | - | 24,321,290.70 | 26.81 |
| 1,3-Butadiene | 68,803.30 | 0 | - | - | - | 68,803.30 | 0.076 |
| Acetaldehyde | 168,043.30 | - | - | - | - | 168,043.30 | 0.185 |
| Acrolein | 14,968.10 | - | - | - | - | 14,968.10 | 0.016 |
| Benzene | 313,404.30 | 144,186.00 | - | - | - | 457,590.20 | 0.504 |
| Diesel PM | 409,887.20 | - | - | - | - | 409,887.20 | 0.452 |
| Ethylbenzene | 129,469.40 | 236,482.90 | - | - | - | 365,952.30 | 0.403 |
| Formaldehyde | 437,995.40 | - | - | - | - | 437,995.40 | 0.483 |
| Naphthalene | 13,586.60 | 20,193.30 | - | - | - | 33,779.80 | 0.037 |
| POM | 10,947.30 | - | - | - | - | 10,947.30 | 0.012 |
| DEOG | 1,505,567.10 | - | - | - | - | 1,505,567.10 | 1.66 |
| CO2 | 1.45E+11 | - | - | - | - | 1.45E+11 | 159,992.17 |
| N2O | 7,124,977.80 | - | - | - | - | 7,124,977.80 | 7.854 |
| CH4 | 6,856,904.60 | 2,420,083.20 | - | - | - | 9,276,987.80 | 10.226 |
| BC | 158,202.50 | - | - | - | - | 158,202.50 | 0.174 |
| HFC | - | 42,878.80 | - | - | - | 42,878.80 | 0.047 |

Fuel Consumption

| Fuel Type | (gallons) |
|-----------|---------------|
| Gasoline | 13,321,264.89 |
| Diesel | 3,028,865.51 |

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 =END=
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ESFV Alt 4 Roadway/Tracks, Sidewalks, and At-Grade Stations
Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|----------------------------|----------|----------|-------------|--------------------|------------|
| Other Asphalt Surfaces | 2,250.00 | 1000sqft | 51.65 | 2,250,000.00 | 0 |
| Other Non-Asphalt Surfaces | 2,069.00 | 1000sqft | 47.50 | 2,069,000.00 | 0 |

1.2 Other Project Characteristics

| | | | | | |
|--------------------------------|---|--------------------------------|-------|----------------------------------|-------|
| Urbanization | Urban | Wind Speed (m/s) | 2.2 | Precipitation Freq (Days) | 33 |
| Climate Zone | 12 | | | Operational Year | 2021 |
| Utility Company | Los Angeles Department of Water & Power | | | | |
| CO2 Intensity (lb/MWhr) | 1227.89 | CH4 Intensity (lb/MWhr) | 0.029 | N2O Intensity (lb/MWhr) | 0.006 |

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 36-month construction period beginning in June 2017

Land Use - 2.25 million square feet of road to be repaved

Sidewalks/Stations: Removal of curbs and gutters, addition of curbs and gutters, additions of sidewalks, ramps, direct fixation/ballasted track, at-grade stations ~ 2,069,051sf = 47.5 ac

Construction Phase - 36-month construction starting in June 2017, construction to occur 6 days/week ~ 640 days of construction

Approximately 2/3 of construction apportioned to site preparation and the remaining 1/3 apportioned to paving/stripping

Grading - Material Imported: 32,778 cy paving + 11,913 cy SW/curbs/barriers + 15,709 plaforms + 273,588 cy track work = 333,988 cy

Material Exported: 27,778 cy for paving + 7,854 cy platform + 10,320 cy for SW/curb/Misc removal + 237,024 cy track work = 282,975 cy

Architectural Coating - Striping for roadway ~ 2 square feet of striping for every linear foot (9.2 miles) = 97,152 sf

Energy Use -

Construction Off-road Equipment Mitigation - Water exposed areas three times daily

Clean paved roads

Tier 4 Final equipment

| Table Name | Column Name | Default Value | New Value |
|-------------------------|---|---------------|--------------|
| tblArchitecturalCoating | ConstArea_Nonresidential_Exterior | 2,159,500.00 | 97,152.00 |
| tblArchitecturalCoating | ConstArea_Nonresidential_Interior | 6,478,500.00 | 0.00 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialExteriorValue | 250 | 0 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialInteriorValue | 250 | 0 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorValue | 100 | 0 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorValue | 50 | 0 |
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 50 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |

| | | | |
|---------------------------|---------------------|-----------|--------------|
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstructionPhase | NumDays | 110.00 | 40.00 |
| tblConstructionPhase | NumDays | 110.00 | 200.00 |
| tblConstructionPhase | NumDays | 60.00 | 400.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblGrading | AcresOfGrading | 0.00 | 100.00 |
| tblGrading | MaterialExported | 0.00 | 282,975.00 |
| tblGrading | MaterialImported | 0.00 | 333,988.00 |
| tblGrading | MaterialSiltContent | 6.90 | 4.30 |
| tblGrading | MeanVehicleSpeed | 7.10 | 40.00 |
| tblProjectCharacteristics | OperationalYear | 2014 | 2021 |

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 | | | | | |
| 2017 | 0.7537 | 9.5301 | 7.5075 | 0.0170 | 4.0858 | 0.3191 | 4.4050 | 1.7166 | 0.2936 | 2.0102 | 0.0000 | 1,533.0909 | 1,533.0909 | 0.1115 | 0.0000 | 1,535.4328 |
| 2018 | 0.9388 | 11.0583 | 9.1979 | 0.0213 | 4.1109 | 0.3813 | 4.4922 | 1.7246 | 0.3508 | 2.0754 | 0.0000 | 1,892.8090 | 1,892.8090 | 0.1631 | 0.0000 | 1,896.2343 |
| 2019 | 0.7034 | 0.8520 | 1.1846 | 2.3400e-003 | 0.0881 | 0.0454 | 0.1335 | 0.0234 | 0.0420 | 0.0654 | 0.0000 | 185.9004 | 185.9004 | 0.0373 | 0.0000 | 186.6841 |
| Total | 2.3958 | 21.4403 | 17.8900 | 0.0406 | 8.2848 | 0.7459 | 9.0307 | 3.4647 | 0.6864 | 4.1511 | 0.0000 | 3,611.8004 | 3,611.8004 | 0.3120 | 0.0000 | 3,618.3512 |

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 | | | | | |
| 2017 | 0.3545 | 4.9832 | 5.8463 | 0.0170 | 1.6966 | 0.0729 | 1.7696 | 0.7004 | 0.0676 | 0.7679 | 0.0000 | 1,533.0905 | 1,533.0905 | 0.1115 | 0.0000 | 1,535.4324 |
| 2018 | 0.4605 | 5.5667 | 7.6879 | 0.0213 | 1.7168 | 0.0882 | 1.8051 | 0.7072 | 0.0819 | 0.7890 | 0.0000 | 1,892.8084 | 1,892.8084 | 0.1631 | 0.0000 | 1,896.2337 |
| 2019 | 0.6388 | 0.1031 | 1.3177 | 2.3400e-003 | 0.0499 | 2.7500e-003 | 0.0527 | 0.0140 | 2.7000e-003 | 0.0167 | 0.0000 | 185.9003 | 185.9003 | 0.0373 | 0.0000 | 186.6839 |
| Total | 1.4538 | 10.6530 | 14.8519 | 0.0406 | 3.4634 | 0.1639 | 3.6273 | 1.4215 | 0.1521 | 1.5736 | 0.0000 | 3,611.7992 | 3,611.7992 | 0.3120 | 0.0000 | 3,618.3500 |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------------|-------|-------|-------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| Percent Reduction | 39.32 | 50.31 | 16.98 | 0.00 | 58.20 | 78.02 | 59.83 | 58.97 | 77.84 | 62.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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 | 20.6165 | 5.1000e-004 | 0.0553 | 0.0000 | | 2.0000e-004 | 2.0000e-004 | | 2.0000e-004 | 2.0000e-004 | 0.0000 | 0.1072 | 0.1072 | 2.8000e-004 | 0.0000 | 0.1132 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 20.6165 | 5.1000e-004 | 0.0553 | 0.0000 | 0.0000 | 2.0000e-004 | 2.0000e-004 | 0.0000 | 2.0000e-004 | 2.0000e-004 | 0.0000 | 0.1072 | 0.1072 | 2.8000e-004 | 0.0000 | 0.1132 |

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 | 20.6165 | 5.1000e-004 | 0.0553 | 0.0000 | | 2.0000e-004 | 2.0000e-004 | | 2.0000e-004 | 2.0000e-004 | 0.0000 | 0.1072 | 0.1072 | 2.8000e-004 | 0.0000 | 0.1132 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 20.6165 | 5.1000e-004 | 0.0553 | 0.0000 | 0.0000 | 2.0000e-004 | 2.0000e-004 | 0.0000 | 2.0000e-004 | 2.0000e-004 | 0.0000 | 0.1072 | 0.1072 | 2.8000e-004 | 0.0000 | 0.1132 |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | 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 |

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 | 6/1/2017 | 9/10/2018 | 6 | 400 | |
| 2 | Paving | Paving | 9/11/2018 | 5/1/2019 | 6 | 200 | |
| 3 | Architectural Coating | Architectural Coating | 5/2/2019 | 6/17/2019 | 6 | 40 | |

Acres of Grading (Site Preparation Phase): 100

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 97,152 (Architectural Coating – sqft)

OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|-----------------------|---------------------------|--------|-------------|-------------|-------------|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |
| Paving | Pavers | 2 | 8.00 | 125 | 0.42 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Paving | Paving Equipment | 2 | 8.00 | 130 | 0.36 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 255 | 0.40 |

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 | 77,120.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 363.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2017

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 | | | | | 3.4955 | 0.0000 | 3.4955 | 1.5627 | 0.0000 | 1.5627 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.4427 | 4.7354 | 3.6048 | 3.5800e-003 | | 0.2520 | 0.2520 | | 0.2319 | 0.2319 | 0.0000 | 332.2858 | 332.2858 | 0.1018 | 0.0000 | 334.4238 |
| Total | 0.4427 | 4.7354 | 3.6048 | 3.5800e-003 | 3.4955 | 0.2520 | 3.7475 | 1.5627 | 0.2319 | 1.7945 | 0.0000 | 332.2858 | 332.2858 | 0.1018 | 0.0000 | 334.4238 |

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 | 0.3045 | 4.7851 | 3.8037 | 0.0132 | 0.5723 | 0.0670 | 0.6393 | 0.1492 | 0.0616 | 0.2108 | 0.0000 | 1,183.8541 | 1,183.8541 | 8.7800e-003 | 0.0000 | 1,184.0385 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 6.4400e-003 | 9.5100e-003 | 0.0990 | 2.3000e-004 | 0.0181 | 1.7000e-004 | 0.0182 | 4.7900e-003 | 1.5000e-004 | 4.9500e-003 | 0.0000 | 16.9511 | 16.9511 | 9.2000e-004 | 0.0000 | 16.9705 |
| Total | 0.3110 | 4.7946 | 3.9027 | 0.0134 | 0.5904 | 0.0671 | 0.6575 | 0.1540 | 0.0617 | 0.2157 | 0.0000 | 1,200.8051 | 1,200.8051 | 9.7000e-003 | 0.0000 | 1,201.0090 |

3.2 Site Preparation - 2017

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 | | | | | 1.3632 | 0.0000 | 1.3632 | 0.6094 | 0.0000 | 0.6094 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0435 | 0.1886 | 1.9436 | 3.5800e-003 | | 5.8000e-003 | 5.8000e-003 | | 5.8000e-003 | 5.8000e-003 | 0.0000 | 332.2854 | 332.2854 | 0.1018 | 0.0000 | 334.4234 |
| Total | 0.0435 | 0.1886 | 1.9436 | 3.5800e-003 | 1.3632 | 5.8000e-003 | 1.3690 | 0.6094 | 5.8000e-003 | 0.6152 | 0.0000 | 332.2854 | 332.2854 | 0.1018 | 0.0000 | 334.4234 |

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 | 0.3045 | 4.7851 | 3.8037 | 0.0132 | 0.3232 | 0.0670 | 0.3901 | 0.0880 | 0.0616 | 0.1496 | 0.0000 | 1,183.8541 | 1,183.8541 | 8.7800e-003 | 0.0000 | 1,184.0385 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 6.4400e-003 | 9.5100e-003 | 0.0990 | 2.3000e-004 | 0.0102 | 1.7000e-004 | 0.0104 | 2.8700e-003 | 1.5000e-004 | 3.0300e-003 | 0.0000 | 16.9511 | 16.9511 | 9.2000e-004 | 0.0000 | 16.9705 |
| Total | 0.3110 | 4.7946 | 3.9027 | 0.0134 | 0.3334 | 0.0671 | 0.4005 | 0.0909 | 0.0617 | 0.1527 | 0.0000 | 1,200.8051 | 1,200.8051 | 9.7000e-003 | 0.0000 | 1,201.0090 |

3.2 Site Preparation - 2018

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 | | | | | 3.4955 | 0.0000 | 3.4955 | 1.5627 | 0.0000 | 1.5627 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.4657 | 4.9486 | 3.9315 | 4.2400e-003 | | 0.2567 | 0.2567 | | 0.2361 | 0.2361 | 0.0000 | 387.7901 | 387.7901 | 0.1207 | 0.0000 | 390.3253 |
| Total | 0.4657 | 4.9486 | 3.9315 | 4.2400e-003 | 3.4955 | 0.2567 | 3.7521 | 1.5627 | 0.2361 | 1.7988 | 0.0000 | 387.7901 | 387.7901 | 0.1207 | 0.0000 | 390.3253 |

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 | 0.3539 | 5.2719 | 4.4253 | 0.0156 | 0.5861 | 0.0793 | 0.6655 | 0.1542 | 0.0730 | 0.2272 | 0.0000 | 1,380.7465 | 1,380.7465 | 0.0106 | 0.0000 | 1,380.9681 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 6.8500e-003 | 0.0102 | 0.1063 | 2.7000e-004 | 0.0214 | 1.9000e-004 | 0.0216 | 5.6800e-003 | 1.8000e-004 | 5.8600e-003 | 0.0000 | 19.3638 | 19.3638 | 1.0200e-003 | 0.0000 | 19.3852 |
| Total | 0.3607 | 5.2821 | 4.5315 | 0.0159 | 0.6075 | 0.0795 | 0.6871 | 0.1599 | 0.0732 | 0.2331 | 0.0000 | 1,400.1103 | 1,400.1103 | 0.0116 | 0.0000 | 1,400.3533 |

3.2 Site Preparation - 2018

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 | | | | | 1.3632 | 0.0000 | 1.3632 | 0.6094 | 0.0000 | 0.6094 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0516 | 0.2237 | 2.3047 | 4.2400e-003 | | 6.8800e-003 | 6.8800e-003 | | 6.8800e-003 | 6.8800e-003 | 0.0000 | 387.7896 | 387.7896 | 0.1207 | 0.0000 | 390.3248 |
| Total | 0.0516 | 0.2237 | 2.3047 | 4.2400e-003 | 1.3632 | 6.8800e-003 | 1.3701 | 0.6094 | 6.8800e-003 | 0.6163 | 0.0000 | 387.7896 | 387.7896 | 0.1207 | 0.0000 | 390.3248 |

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 | 0.3539 | 5.2719 | 4.4253 | 0.0156 | 0.3370 | 0.0793 | 0.4163 | 0.0931 | 0.0730 | 0.1660 | 0.0000 | 1,380.7465 | 1,380.7465 | 0.0106 | 0.0000 | 1,380.9681 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 6.8500e-003 | 0.0102 | 0.1063 | 2.7000e-004 | 0.0121 | 1.9000e-004 | 0.0123 | 3.4100e-003 | 1.8000e-004 | 3.5800e-003 | 0.0000 | 19.3638 | 19.3638 | 1.0200e-003 | 0.0000 | 19.3852 |
| Total | 0.3607 | 5.2821 | 4.5315 | 0.0159 | 0.3491 | 0.0795 | 0.4286 | 0.0965 | 0.0732 | 0.1696 | 0.0000 | 1,400.1103 | 1,400.1103 | 0.0116 | 0.0000 | 1,400.3533 |

3.3 Paving - 2018

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 | 0.0774 | 0.8238 | 0.6957 | 1.0700e-003 | | 0.0451 | 0.0451 | | 0.0415 | 0.0415 | 0.0000 | 97.7700 | 97.7700 | 0.0304 | 0.0000 | 98.4091 |
| Paving | 0.0325 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.1098 | 0.8238 | 0.6957 | 1.0700e-003 | | 0.0451 | 0.0451 | | 0.0415 | 0.0415 | 0.0000 | 97.7700 | 97.7700 | 0.0304 | 0.0000 | 98.4091 |

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 | 2.5300e-003 | 3.7700e-003 | 0.0392 | 1.0000e-004 | 7.8900e-003 | 7.0000e-005 | 7.9600e-003 | 2.1000e-003 | 7.0000e-005 | 2.1600e-003 | 0.0000 | 7.1387 | 7.1387 | 3.8000e-004 | 0.0000 | 7.1466 |
| Total | 2.5300e-003 | 3.7700e-003 | 0.0392 | 1.0000e-004 | 7.8900e-003 | 7.0000e-005 | 7.9600e-003 | 2.1000e-003 | 7.0000e-005 | 2.1600e-003 | 0.0000 | 7.1387 | 7.1387 | 3.8000e-004 | 0.0000 | 7.1466 |

3.3 Paving - 2018

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 | 0.0132 | 0.0571 | 0.8125 | 1.0700e-003 | | 1.7600e-003 | 1.7600e-003 | | 1.7600e-003 | 1.7600e-003 | 0.0000 | 97.7699 | 97.7699 | 0.0304 | 0.0000 | 98.4090 |
| Paving | 0.0325 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.0457 | 0.0571 | 0.8125 | 1.0700e-003 | | 1.7600e-003 | 1.7600e-003 | | 1.7600e-003 | 1.7600e-003 | 0.0000 | 97.7699 | 97.7699 | 0.0304 | 0.0000 | 98.4090 |

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 | 2.5300e-003 | 3.7700e-003 | 0.0392 | 1.0000e-004 | 4.4700e-003 | 7.0000e-005 | 4.5400e-003 | 1.2600e-003 | 7.0000e-005 | 1.3200e-003 | 0.0000 | 7.1387 | 7.1387 | 3.8000e-004 | 0.0000 | 7.1466 |
| Total | 2.5300e-003 | 3.7700e-003 | 0.0392 | 1.0000e-004 | 4.4700e-003 | 7.0000e-005 | 4.5400e-003 | 1.2600e-003 | 7.0000e-005 | 1.3200e-003 | 0.0000 | 7.1387 | 7.1387 | 3.8000e-004 | 0.0000 | 7.1466 |

3.3 Paving - 2019

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 | 0.0741 | 0.7766 | 0.7470 | 1.1600e-003 | | 0.0421 | 0.0421 | | 0.0387 | 0.0387 | 0.0000 | 104.2052 | 104.2052 | 0.0330 | 0.0000 | 104.8976 |
| Paving | 0.0352 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.1093 | 0.7766 | 0.7470 | 1.1600e-003 | | 0.0421 | 0.0421 | | 0.0387 | 0.0387 | 0.0000 | 104.2052 | 104.2052 | 0.0330 | 0.0000 | 104.8976 |

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 | 2.5100e-003 | 3.7500e-003 | 0.0389 | 1.1000e-004 | 8.5500e-003 | 7.0000e-005 | 8.6200e-003 | 2.2700e-003 | 7.0000e-005 | 2.3400e-003 | 0.0000 | 7.4303 | 7.4303 | 3.8000e-004 | 0.0000 | 7.4382 |
| Total | 2.5100e-003 | 3.7500e-003 | 0.0389 | 1.1000e-004 | 8.5500e-003 | 7.0000e-005 | 8.6200e-003 | 2.2700e-003 | 7.0000e-005 | 2.3400e-003 | 0.0000 | 7.4303 | 7.4303 | 3.8000e-004 | 0.0000 | 7.4382 |

3.3 Paving - 2019

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 | 0.0143 | 0.0619 | 0.8802 | 1.1600e-003 | | 1.9000e-003 | 1.9000e-003 | | 1.9000e-003 | 1.9000e-003 | 0.0000 | 104.2051 | 104.2051 | 0.0330 | 0.0000 | 104.8975 |
| Paving | 0.0352 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.0495 | 0.0619 | 0.8802 | 1.1600e-003 | | 1.9000e-003 | 1.9000e-003 | | 1.9000e-003 | 1.9000e-003 | 0.0000 | 104.2051 | 104.2051 | 0.0330 | 0.0000 | 104.8975 |

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 | 2.5100e-003 | 3.7500e-003 | 0.0389 | 1.1000e-004 | 4.8400e-003 | 7.0000e-005 | 4.9200e-003 | 1.3600e-003 | 7.0000e-005 | 1.4300e-003 | 0.0000 | 7.4303 | 7.4303 | 3.8000e-004 | 0.0000 | 7.4382 |
| Total | 2.5100e-003 | 3.7500e-003 | 0.0389 | 1.1000e-004 | 4.8400e-003 | 7.0000e-005 | 4.9200e-003 | 1.3600e-003 | 7.0000e-005 | 1.4300e-003 | 0.0000 | 7.4303 | 7.4303 | 3.8000e-004 | 0.0000 | 7.4382 |

3.4 Architectural Coating - 2019

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 | 0.5629 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.3300e-003 | 0.0367 | 0.0368 | 6.0000e-005 | | 2.5800e-003 | 2.5800e-003 | | 2.5800e-003 | 2.5800e-003 | 0.0000 | 5.1065 | 5.1065 | 4.3000e-004 | 0.0000 | 5.1156 |
| Total | 0.5682 | 0.0367 | 0.0368 | 6.0000e-005 | | 2.5800e-003 | 2.5800e-003 | | 2.5800e-003 | 2.5800e-003 | 0.0000 | 5.1065 | 5.1065 | 4.3000e-004 | 0.0000 | 5.1156 |

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 | 0.0234 | 0.0349 | 0.3619 | 1.0100e-003 | 0.0796 | 6.9000e-004 | 0.0803 | 0.0211 | 6.4000e-004 | 0.0218 | 0.0000 | 69.1584 | 69.1584 | 3.5400e-003 | 0.0000 | 69.2327 |
| Total | 0.0234 | 0.0349 | 0.3619 | 1.0100e-003 | 0.0796 | 6.9000e-004 | 0.0803 | 0.0211 | 6.4000e-004 | 0.0218 | 0.0000 | 69.1584 | 69.1584 | 3.5400e-003 | 0.0000 | 69.2327 |

3.4 Architectural Coating - 2019

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 | 0.5629 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.9000e-004 | 2.5800e-003 | 0.0367 | 6.0000e-005 | | 8.0000e-005 | 8.0000e-005 | | 8.0000e-005 | 8.0000e-005 | 0.0000 | 5.1065 | 5.1065 | 4.3000e-004 | 0.0000 | 5.1156 |
| Total | 0.5635 | 2.5800e-003 | 0.0367 | 6.0000e-005 | | 8.0000e-005 | 8.0000e-005 | | 8.0000e-005 | 8.0000e-005 | 0.0000 | 5.1065 | 5.1065 | 4.3000e-004 | 0.0000 | 5.1156 |

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 | 0.0234 | 0.0349 | 0.3619 | 1.0100e-003 | 0.0451 | 6.9000e-004 | 0.0458 | 0.0127 | 6.4000e-004 | 0.0133 | 0.0000 | 69.1584 | 69.1584 | 3.5400e-003 | 0.0000 | 69.2327 |
| Total | 0.0234 | 0.0349 | 0.3619 | 1.0100e-003 | 0.0451 | 6.9000e-004 | 0.0458 | 0.0127 | 6.4000e-004 | 0.0133 | 0.0000 | 69.1584 | 69.1584 | 3.5400e-003 | 0.0000 | 69.2327 |

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

4.2 Trip Summary Information

| Land Use | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|----------------------------|-------------------------|----------|--------|-------------|------------|
| | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Other Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Total | 0.00 | 0.00 | 0.00 | | |

4.3 Trip Type Information

| Land Use | Miles | | | Trip % | | | Trip Purpose % | | |
|----------------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
| | 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 | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Other Non-Asphalt Surfaces | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

| LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 0.527271 | 0.057774 | 0.179409 | 0.125521 | 0.039563 | 0.006393 | 0.017164 | 0.035220 | 0.002536 | 0.003167 | 0.003715 | 0.000530 | 0.001736 |

5.3 Energy by Land Use - Electricity

Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|-----------------|---------------|---------------|---------------|---------------|
| Land Use | kWh/yr | MT/yr | | | |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|-----------------|---------------|---------------|---------------|---------------|
| Land Use | kWh/yr | MT/yr | | | |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

6.0 Area Detail

6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 20.6165 | 5.1000e-004 | 0.0553 | 0.0000 | | 2.0000e-004 | 2.0000e-004 | | 2.0000e-004 | 2.0000e-004 | 0.0000 | 0.1072 | 0.1072 | 2.8000e-004 | 0.0000 | 0.1132 |
| Unmitigated | 20.6165 | 5.1000e-004 | 0.0553 | 0.0000 | | 2.0000e-004 | 2.0000e-004 | | 2.0000e-004 | 2.0000e-004 | 0.0000 | 0.1072 | 0.1072 | 2.8000e-004 | 0.0000 | 0.1132 |

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 | 5.0046 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 15.6067 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 5.1700e-003 | 5.1000e-004 | 0.0553 | 0.0000 | | 2.0000e-004 | 2.0000e-004 | | 2.0000e-004 | 2.0000e-004 | 0.0000 | 0.1072 | 0.1072 | 2.8000e-004 | 0.0000 | 0.1132 |
| Total | 20.6165 | 5.1000e-004 | 0.0553 | 0.0000 | | 2.0000e-004 | 2.0000e-004 | | 2.0000e-004 | 2.0000e-004 | 0.0000 | 0.1072 | 0.1072 | 2.8000e-004 | 0.0000 | 0.1132 |

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 | 5.0046 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 15.6067 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 5.1700e-003 | 5.1000e-004 | 0.0553 | 0.0000 | | 2.0000e-004 | 2.0000e-004 | | 2.0000e-004 | 2.0000e-004 | 0.0000 | 0.1072 | 0.1072 | 2.8000e-004 | 0.0000 | 0.1132 |
| Total | 20.6165 | 5.1000e-004 | 0.0553 | 0.0000 | | 2.0000e-004 | 2.0000e-004 | | 2.0000e-004 | 2.0000e-004 | 0.0000 | 0.1072 | 0.1072 | 2.8000e-004 | 0.0000 | 0.1132 |

7.0 Water Detail

7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|-------------|-----------|--------|--------|--------|
| Category | MT/yr | | | |
| Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

7.2 Water by Land Use

Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|--------------------|---------------|---------------|---------------|---------------|
| Land Use | Mgal | MT/yr | | | |
| Other Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|--------------------|---------------|---------------|---------------|---------------|
| Land Use | Mgal | MT/yr | | | |
| Other Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|----------------|---------------|---------------|---------------|---------------|
| Land Use | tons | MT/yr | | | |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

8.2 Waste by Land Use

Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|----------------|---------------|---------------|---------------|---------------|
| Land Use | tons | MT/yr | | | |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

9.0 Operational Offroad

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

10.0 Vegetation



Metro®

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Acronyms and Abbreviations

| | |
|-------------------|--|
| AA | Alternatives Analysis |
| AB | Assembly Bill |
| ADA | Americans with Disabilities Act |
| BRT | bus rapid transit |
| CalEEMod | California Emissions Estimator Model |
| CARB | California Air Resources Board |
| CEC | California Energy Commission |
| CEQ | Council on Environmental Quality |
| CEQA | California Environmental Quality Act |
| CFCs | chlorofluorocarbons |
| CH ₄ | methane |
| CO ₂ | carbon dioxide |
| CO ₂ e | carbon dioxide equivalent |
| DEIR | draft environmental impact report |
| DEIS | draft environmental impact statement |
| EO | Executive Order |
| EPA | U.S. Environmental Protection Agency |
| FTA | Federal Transit Administration |
| GHG | greenhouse gas |
| GWP | global warming potential |
| HCFCs | hydrochlorofluorocarbons |
| HFCs | hydrofluorocarbons |
| I | Interstate |
| IPCC | Intergovernmental Panel on Climate Change |
| LRT | light rail transit |
| LRTP | Long-Range Transportation Plan |
| Metro | Los Angeles County Metropolitan Transportation Authority |
| MMT | million metric tons |
| MPO | Metropolitan Planning Organization |
| MSF | maintenance and storage facility |
| MT | metric tons |
| N ₂ O | nitrous oxide |

| | |
|-----------------|---|
| NEPA | National Environmental Policy Act |
| OCS | overhead contact system |
| OPR | Office of Planning and Research |
| PFCs | perfluorocarbons |
| RTP/SCS | Regional Transportation Plan/Sustainable Communities Strategy |
| SB | Senate Bill |
| SCAG | Southern California Association of Governments |
| SCAQMD | South Coast Air Quality Management District |
| SF ₆ | sulfur hexafluoride |
| SR | State Route |
| TOD | transit-oriented development |
| TPSS | traction power substations |
| TSM | Transportation Systems Management |
| VMT | vehicle miles traveled |

1.1 Study Background

What Is the East San Fernando Valley Transit Corridor?

The Federal Transit Administration (FTA) and Los Angeles County Metropolitan Transportation Authority (Metro) have initiated a draft environmental impact statement (DEIS)/draft environmental impact report (DEIR) for the East San Fernando Valley Transit Corridor Project. The DEIS/DEIR is being prepared with the FTA as the lead agency under the National Environmental Policy Act (NEPA) and Metro as the lead agency under the California Environmental Quality Act (CEQA).

The DEIS/DEIR and related engineering are being undertaken by Metro, in close coordination with the Cities of Los Angeles and San Fernando. The DEIS/DEIR will be a combined document, complying with the most recent state and federal environmental laws. The project's public/community outreach component is being undertaken as an integrated parallel effort to the DEIS/DEIR.

Prior to the initiation of the DEIS/DEIR, an Alternatives Analysis (AA) was received by the Metro Board in January 2013 to study the East San Fernando Valley Transit Corridor and define, screen, and recommend alternatives for future study. This study enabled Metro, the City of Los Angeles, and the City of San Fernando to evaluate a range of new public transit service alternatives that can accommodate future population growth and transit demand while being compatible with existing land uses and future development opportunities. The study considered the Sepulveda Pass Corridor, which is another Measure R project, and the proposed California High Speed Rail Project. Both of these projects may be directly served by a future transit project in the project study area. The Sepulveda Pass Corridor could eventually link the west Los Angeles area to the eastern San Fernando Valley and the California High Speed Rail Project via the project corridor. As part of the January 2013 AA, most of Sepulveda Boulevard was eliminated as an alignment option, as was the alignment extending to Lakeview Terrace. As a result of the AA, the modal recommendations were for bus rapid transit (BRT) and light rail transit (LRT).

As a result of the alternatives screening process and feedback received during the public scoping period, a curb-running BRT, median-running BRT, median-running low-floor LRT/tram, and a median-running LRT were identified as the four build alternatives, along with the Transportation Systems Management (TSM) and No-Build Alternatives, to be carried forward for analysis in this DEIS/DEIR.

1.1.1 Study Area

Where Is the Study Area Located?

The East San Fernando Valley Transit Corridor project study area is located in the San Fernando Valley in the County of Los Angeles. Generally, the project study area extends from the City of San Fernando and the Sylmar/San Fernando Metrolink station in the north to the Van Nuys Metro Orange Line station in the City of Los Angeles in the south. However, the project study area used

for the environmental issue described in this report could vary from this general project study area, depending on the needs of the analysis. For the purposes of the analysis contained in this report, the project study area coincides with the general project study area.

The eastern San Fernando Valley includes two major north/south arterial roadways, Sepulveda and Van Nuys Boulevards, spanning approximately 10 to 12 miles, and a major north/west arterial roadway, San Fernando Road.

Several freeways traverse or border the eastern San Fernando Valley. These include the Ventura Freeway (US-101), the San Diego Freeway (Interstate [I] 405), the Golden State Freeway (I-5), the Ronald Reagan Freeway (State Route [SR] 118), and the Foothill Freeway (I-210). The Hollywood Freeway (SR-170) is located east of the project study area. In addition to Metro Local and Metro Rapid bus service, the Metro Orange Line (Orange Line) BRT service, the Metrolink Ventura Line commuter rail service, Amtrak inter-city rail service, and the Metrolink Antelope Valley Line commuter rail service are the major transit services that provide interregional trips in the project study area.

Land uses in the project study area include neighborhood and regional commercial land uses as well as government and residential land uses. Specifically, land uses in the project study area include government services at the Van Nuys Civic Center, retail shopping along the project corridor, and medium- to high-density residential uses throughout the project study area. Notable land uses in the eastern San Fernando Valley include The Village at Sherman Oaks, Panorama Mall, Whiteman Airport, Van Nuys Airport, Mission Community Hospital, Kaiser Permanente Hospital, Van Nuys Auto Row, and several schools, youth centers, and recreational centers.

1.1.2 Alternatives Considered

What Alternatives Are under Consideration?

The following six alternatives, including four build alternatives, a TSM Alternative, and the No-Build Alternative, are being evaluated as part of this study:

- No-Build Alternative;
- TSM Alternative;
- Build Alternative 1 – Curb-Running BRT Alternative;
- Build Alternative 2 – Median-Running BRT Alternative;
- Build Alternative 3 – Low-Floor LRT/Tram Alternative; and
- Build Alternative 4 –LRT Alternative.

All build alternatives would operate over 9.2 miles, either in a dedicated bus lane or guideway (6.7 miles) and/or in mixed-flow traffic lanes (2.5 miles), from the Sylmar/San Fernando Metrolink station to the north to the Van Nuys Metro Orange Line station to the south, with the exception of Build Alternative 4, which includes a 2.5-mile segment within a Metro-owned railroad right-of-way adjacent to San Fernando Road and Truman Street and a 2.5-mile underground segment beneath portions of Panorama City and Van Nuys.

1.1.2.1 No-Build Alternative

The No-Build Alternative represents projected conditions in 2040 without implementation of the project. No new transportation infrastructure would be built within the project study area, aside from projects that are currently under construction or funded for construction and operation by 2040.

These projects include highway and transit projects funded by Measure R and specified in the current constrained element of the Metro 2009 Long-Range Transportation Plan (LRTP) and the 2016 Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Existing infrastructure and future planned and funded projects assumed under the No-Build Alternative include:

- Existing Freeways – I-5, and I=105, SR-118, and US-101;
- Existing Transitway – Metro Orange Line;
- Existing Bus Service – Metro Rapid and Metro Local Shuttle;
- Los Angeles Department of Transportation Commuter Express and DASH;
- Existing and Planned Bicycle Projects – Bicycle facilities on Van Nuys Boulevard and connecting east/west facilities; and
- Other Planned Projects – Various freeway and arterial roadway upgrades, expansions to the Metro Rapid bus system, upgrades to the Metrolink system, and the proposed California High Speed Rail Project.

This alternative establishes a baseline for comparison with other alternatives in terms of potential environmental effects, including adverse and beneficial environmental effects.

1.1.2.2 TSM Alternative

The TSM Alternative enhances the No-Build Alternative and emphasizes transportation system upgrades, which may include relatively low-cost transit service improvements. It represents efficient and feasible improvements to transit service, such as increased bus frequencies and minor modifications to the roadway network. Additional TSM Alternative transit improvements that may be considered include, but are not limited to, traffic signalization improvements, bus stop amenities/improvements, and bus schedule restructuring (Figure 1-1).

The TSM Alternative considers the existing bus network, enhanced operating hours, and increased bus frequencies for Metro Rapid Line 761 and Local Line 233. Under this alternative, the Metro Rapid Line 761 and Metro Local Line 233 bus routes would retain the existing stop locations. This alternative would add 20 additional buses to the existing Metro Local 233 and Metro Rapid 761 bus routes. These buses would be similar to the existing Metro 60-foot articulated buses, and each bus would have the capacity to serve up to 75 passengers (57 seats x 1.30 passenger loading standard). Buses would be equipped with transit signal priority equipment to allow for improved operations and on-time performance.

The existing Metro Division 15 maintenance and storage facility (MSF) located in Sun Valley would be able to accommodate the 20 additional buses with implementation of the TSM Alternative. Operational changes would include reduced headway (elapsed time between buses) times for Metro Rapid Line 761 and Metro Local Line 233, as follows:

- Metro Rapid Line 761 would operate with headways reduced from 10 minutes to 8 minutes during peak hours (7 a.m. to 9 a.m. and 4 p.m. to 7 p.m. on weekdays) and from 17.5 minutes to 12 minutes during off-peak hours.
- Metro Local Line 233 would operate with headways reduced from 12 minutes to 8 minutes during peak hours and from 20 minutes to 16 minutes during off-peak hours.

Figure 1-1: TSM Alternative



Source: STV, 2014.

1.1.2.3 Build Alternative 1 – Curb-Running BRT Alternative

Under the Curb-Running BRT Alternative, the BRT guideway would incorporate 6.7 miles of existing curb lanes (i.e., lanes closest to the curb) along Van Nuys Boulevard between San Fernando Road and the Metro Orange Line. This alternative would be similar to the Metro Wilshire BRT Project. The lanes would be dedicated curb-running bus lanes for Metro Rapid Line 761 and Metro Local Line 233 as well as for other transit lines that operate on short segments of Van Nuys Boulevard. In addition, this alternative would incorporate 2.5 miles of mixed-flow lanes where buses would operate in the curb lane along San Fernando Road and Truman Street between Van Nuys Boulevard and Hubbard Avenue (Metro Line 761). Metro Line 233 would continue north on Van Nuys Boulevard to Lakeview Terrace. These improvements would result in an improved Metro Rapid Line 761 (hereafter referred to as 761X) and an improved Metro Local Line 233 (hereafter referred to as 233X). The route of the Curb-Running BRT Alternative is illustrated in Figure 1-2.

From the Sylmar/San Fernando Metrolink station:

- Metro Rapid Line 761X would operate within roadway travel lanes on Truman Street and San Fernando Road.
- At Van Nuys Boulevard, Metro Rapid Line 761X would turn southwest and travel south within a curb-running dedicated bus lane along Van Nuys Boulevard.
- The alternative would continue to be curb running along Van Nuys Boulevard until reaching the Metro Orange Line Van Nuys station where Metro Rapid Line 761X service would be integrated into mixed-flow traffic.
- Metro Line 761X would then continue south to Westwood as under existing conditions, though it should be noted that in December 2014 Metro Rapid Line 761 was rerouted to travel from Van Nuys Boulevard to Ventura Boulevard and then to Reseda Boulevard; the new Metro Rapid Line 788 travels from Van Nuys Boulevard through the Sepulveda Pass to Westwood as part of a Metro demonstration project.

Metro Local Line 233X would operate similar to how it currently operates between the intersections of Van Nuys and Glenoaks Boulevards to the north and Van Nuys and Ventura Boulevards to the south. However, Metro Local Line 233X would operate with improvements over existing service because it would utilize the BRT guideway where its route overlaps with the guideway along Van Nuys Boulevard.

Transit service would not be confined to only the dedicated curb lanes. Buses would still have the option to operate within the remaining mixed-flow lanes to bypass right-turning vehicles, a bicyclist, or another bus at a bus stop.

The Curb-Running BRT Alternative would operate in dedicated bus lanes, sharing the lanes with bicycles and right-turning vehicles. However, on San Fernando Road and Truman Street, no dedicated bus lanes would be provided. The Curb-Running BRT Alternative would include 18 bus stops.

Figure 1-2: Build Alternative 1 – Curb-Running BRT Alternative

East San Fernando Valley Transit Corridor Curb Running Bus Rapid Transit (BRT)



Source: KOA and ICF International, 2014.

1.1.2.4 **Build Alternative 2 – Median-Running BRT Alternative**

The Median-Running BRT Alternative would consist of approximately 6.7 miles of dedicated median-running bus lanes between San Fernando Road and the Metro Orange Line and have operational standards similar to the Metro Orange Line. The remaining 2.5 miles would operate in mixed-flow traffic between the Sylmar/San Fernando Metrolink station and San Fernando Road/Van Nuys Boulevard. The Median-Running BRT Alternative is illustrated in Figure 1-3.

Similar to the Curb-Running BRT Alternative, the Median-Running BRT (Metro Rapid Line 761X) would operate as follows from the Sylmar/San Fernando Metrolink station:

- Metro Rapid Line 761X would operate within mixed-flow lanes on Truman Street and San Fernando Road.
- At Van Nuys Boulevard, the route would turn southwest and travel south within the median of Van Nuys Boulevard in a new dedicated guideway.
- Upon reaching the Van Nuys Metro Orange Line station, the dedicated guideway would end and the Metro Rapid Line 761X service would then be integrated into mixed-flow traffic.
- The route would then continue south to Westwood, similar to the existing route. Similar to Build Alternative 1, it should be noted that in December 2014 Metro Rapid Line 761 was rerouted to travel from Van Nuys Boulevard to Ventura Boulevard and then to Reseda Boulevard; the new Metro Rapid Line 788 travels from Van Nuys Boulevard through the Sepulveda Pass to Westwood as part of a Metro demonstration project.

Metro Local Line 233 would operate similar to existing conditions between the intersections of Van Nuys and Glenoaks Boulevards to the north and Van Nuys and Ventura Boulevards to the south. Metro Rapid bus stops that currently serve the 794 and 734 lines on the northern part of the alignment along Truman Street and San Fernando Road would be upgraded and have design enhancements that would be Americans with Disabilities Act (ADA) compliant. These stops would also serve the redirected 761X line:

1. Sylmar/San Fernando Metrolink Station;
2. Hubbard Station;
3. Maclay Station;
4. Paxton Station; and
5. Van Nuys/San Fernando Station.

Along the Van Nuys Boulevard segment, bus stop platforms would be constructed in the median. Seventeen new median bus stops would be included.

Figure 1-3: Build Alternative 2 – Median-Running BRT Alternative

East San Fernando Valley Transit Corridor Median Running Bus Rapid Transit (BRT)



Source: KOA and ICF International, 2014.

1.1.2.5 Build Alternative 3 – Low-Floor LRT/Tram Alternative

The Low-Floor LRT/Tram Alternative would operate along a 9.2-mile route from the Sylmar/San Fernando Metrolink station to the north to the Van Nuys Metro Orange Line station to the south. The Low-Floor LRT/Tram Alternative would operate in a dedicated median guideway for approximately 6.7 miles along Van Nuys Boulevard between San Fernando Road and the Van Nuys Metro Orange Line station. The low-floor LRT/tram alternative would operate in mixed-flow traffic lanes on San Fernando Road between the intersection of San Fernando Road/Van Nuys Boulevard and just north of Wolfskill Street. Between Wolfskill Street and the Sylmar/San Fernando Metrolink station, the low-floor LRT/tram would operate in a dedicated median guideway. It would include 28 stations. The route of the Low-Floor LRT/Tram Alternative is illustrated in Figure 1-4.

The Low-Floor LRT/Tram Alternative would operate along the following route:

- From the Sylmar/San Fernando Metrolink station, the low-floor LRT/tram would operate within a dedicated median guideway on San Fernando Road.
- At Wolfskill Street, the low-floor LRT/tram would operate within mixed-flow travel lanes on San Fernando Road to Van Nuys Boulevard.
- At Van Nuys Boulevard, the low-floor LRT/tram would turn southwest and travel south within the median of Van Nuys Boulevard in a new dedicated guideway.
- The low-floor LRT/tram would continue to operate in the median along Van Nuys Boulevard until reaching its terminus at the Van Nuys Metro Orange Line station.

Based on Metro's Operations Plan for the East San Fernando Valley Transit Corridor Project, the Low-Floor LRT/Tram Alternative would assume a travel speed similar to that of the Median-Running BRT Alternative, with speed improvements of 18 percent during peak hours/peak direction and 15 percent during off-peak hours.

The Low-Floor LRT/Tram Alternative would operate using low-floor articulated vehicles that would be electrically powered by overhead wires. This alternative would include supporting facilities, such as an overhead contact system (OCS), traction power substations (TPSS), signaling devices, and an MSF.

Because the Low-Floor LRT/Tram Alternative would fulfill the current functions of the existing Metro Rapid Line 761 and Metro Local Line 233, these bus routes would be modified to maintain service only to areas outside of the project corridor. Thus, Metro Rapid Line 761 (referred to as 761S with reduced service) would operate only between the Metro Orange Line and Westwood, and Metro Local Line 233 (referred to as 233S with reduced service) would operate only between San Fernando Road and Glenoaks Boulevard. It should be noted that in December 2014 Metro Rapid Line 761 was rerouted to travel from Van Nuys Boulevard to Ventura Boulevard and then to Reseda Boulevard; the new Metro Rapid Line 788 travels from Van Nuys Boulevard through the Sepulveda Pass to Westwood as part of a Metro demonstration project.

Stations for the Low-Floor LRT/Tram Alternative would be constructed at various intervals along the route. There are portions of the route where stations would be closer together and other portions where they would be farther apart. Twenty-eight stations are proposed with the Low-Floor LRT/Tram Alternative. The 28 proposed low-floor LRT/tram stations would be ADA compliant.

Figure 1-4: Build Alternative 3 – Low-Floor LRT/Tram Alternative

East San Fernando Valley Transit Corridor
Median Running Tram



Source: KOA and ICF International, 2014.

1.1.2.6 Build Alternative 4 – LRT Alternative

Similar to the Low-Floor LRT/Tram Alternative, the LRT Alternative would be powered by overhead electrical wires (Figure 1-5). Under Build Alternative 4, the LRT would travel in a dedicated guideway from the Sylmar/San Fernando Metrolink station along San Fernando Road south to Van Nuys Boulevard and from San Fernando Road to the Van Nuys Metro Orange Line Station, over a distance of approximately 9.2 miles. The LRT Alternative includes a segment in an exclusive right-of-way in the Antelope Valley Metrolink railroad corridor, a segment within a semi-exclusive right-of-way in the middle of Van Nuys Boulevard, and an underground segment beneath Van Nuys Boulevard from just north of Parthenia Street to Hart Street.

The LRT Alternative would be similar to other street-running LRT lines that currently operate in the Los Angeles area, such as the Metro Blue Line, Metro Gold Line, and Metro Exposition Line. The LRT Alternative would travel along the median for most of the route, with a subway of approximately 2.5 miles in length between Vanowen Street and Nordhoff Street. On the surface-running segment, the LRT Alternative would operate at prevailing traffic speeds and be controlled by standard traffic signals.

Stations would be constructed at approximately 1-mile intervals along the entire route. There would be 14 stations, three of which would be underground near Sherman Way, the Van Nuys Metrolink station, and Roscoe Boulevard. Entry to the three underground stations would be provided from an entry plaza and portal. The entry portals would provide access to stairs, escalators, and elevators that would lead to an underground LRT station mezzanine level, which, in turn, would be connected via additional stairs, escalators, and elevators to the underground LRT station platforms.

Similar to the Low-Floor LRT/Tram Alternative, the LRT Alternative would require a number of additional elements to support vehicle operations, including an OCS, TPSS, communications and signaling buildings, and an MSF.

Figure 1-5: Build Alternative 4 – LRT Alternative

East San Fernando Valley Transit Corridor Median Running Light Rail Transit (LRT)



Source: KOA and ICF International, 2014.

2.1 Regulatory Framework

2.1.1 Federal Regulations

On April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497 (2007), the Supreme Court found that greenhouse gases (GHGs) are air pollutants and covered by the Clean Air Act and that the U.S. Environmental Protection Agency (EPA) has the authority to regulate GHG emissions. The court held that the EPA Administrator must determine whether or not emissions of GHGs from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare or whether the science is too uncertain to make a reasoned decision.

On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act:

- **Endangerment Finding:** The EPA Administrator found that the current and projected concentrations of the six key well-mixed GHGs—carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆)—in the atmosphere threaten the health and welfare of current and future generations.
- **Cause or Contribute Finding:** The EPA Administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to GHG pollution, which threatens public health and welfare.

Although climate change and GHG emissions are concerns at the federal level, no regulations or laws have been enacted to address GHG emissions and climate change specifically at the project level. Neither EPA nor FTA has promulgated explicit guidance or methodology for conducting project-level GHG analysis; however, FTA works with public transportation providers and other key stakeholders to implement strategies to reduce GHG emissions from the transportation sector. FTA's grants, technical assistance, research, and policy leadership all play a role in the agency's efforts to address climate change.¹

Climate change and its associated effects are also being addressed through various efforts at the federal level, which are designed to improve fuel economy and energy efficiency. These efforts include the National Clean Car Program; Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance; and the Council on Environmental Quality's Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews.

Executive Order 13514, which is focused on reducing GHGs internally through federal programs and operations, directs federal agencies to participate in the Interagency Climate Change Adaptation Task Force. The task force is engaged in developing a national strategy for adaptation to climate change.

¹ Federal Transit Administration. 2010. *Climate Change Flyer*. Available: <http://www.fta.dot.gov/documents/Flyer_ClimateChange_2010.pdf>.

2.1.2 State Regulations

With the passage of several pieces of legislation, including Senate and Assembly Bills and Executive Orders, California launched an innovative and pro-active approach to dealing with GHG emissions and climate change. A summary of key legislation is provided below.

Executive Order (EO) S-3-05: The goal of this EO is to reduce California’s GHG emissions to 1) 2000 levels by 2010, 2) 1990 levels by 2020, and 3) 80% below 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

EO S-01-07 (January 18, 2007): This order set forth the low carbon fuel standard for California. Under this EO, the carbon intensity of California’s transportation fuels is to be reduced by at least ten percent by 2020.

EO B-30-15: Signed on April 29, 2015, this order set a goal of achieving GHG emission levels of 40% below 1990 levels by 2030. The 40% below 1990 target was established as an interim goal for the state to achieve in advance of AB 32’s emissions target of 80% below 1990 levels by 2050.

Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006: AB 32 sets the same overall GHG emissions reduction goals as outlined in EO S-3-05 while further mandating that the California Air Resources Board (CARB) create a scoping plan that includes market mechanisms and implement rules to achieve “real, quantifiable, cost-effective reductions of greenhouse gases.”

AB 1493, Pavley, Vehicular Emissions: Greenhouse Gases, 2002: This bill requires CARB to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year.

Senate Bill (SB) 97: Required the Governor’s Office of Planning and Research (OPR) to develop recommended amendments to the State CEQA Guidelines for addressing GHG emissions (OPR 2008). The amendments became effective on March 18, 2010.

SB 375, Sustainable Communities and Climate Protection Act of 2008: Directed CARB to set regional targets for reducing GHG emissions. The new law establishes a “bottom up” approach to ensure that Cities and counties are involved in the development of regional plans to achieve those targets. SB 375 builds on the existing framework of regional planning to tie together the regional allocation of housing needs and regional transportation planning in an effort to reduce GHG emissions from motor vehicle trips.

SB 391, Chapter 585, 2009 California Transportation Plan: This bill requires the state’s long-range transportation plan to meet California’s climate change goals under AB 32.

SB 32, Global Warming Solutions Act: SB 32 extends and strengthens AB 32’s GHG emissions reduction goals and requires CARB to ensure that statewide GHG emissions are reduced to 40% below the 1990 level by 2030.

2.1.3 Local Regulations

2.1.3.1 Southern California Association of Governments

The passage of SB 375 gave SCAG an additional area of responsibility, providing the agency with a renewed opportunity for integrated planning for the future. The purpose of SB 375 is to implement the state’s GHG emissions reduction goals for cars and light trucks. This mandate requires CARB to determine per capita GHG emission reduction targets for each Metropolitan Planning Organization

(MPO) in the state at two points in the future—2020 and 2035. For the SCAG region, CARB set the reduction goal targets at 8% below 2005 per capita emissions levels by 2020 and 13% below 2005 per capita emissions levels by 2035.

Because GHG emissions in the transportation sector are closely related to vehicle miles traveled (VMT), a mandated GHG reduction essentially requires SCAG to devise a regional plan and a series of strategies that will produce a per capita reduction in VMT over the next 25 years. Full implementation of the SCAG 2016–2040 RTP/SCS would achieve per capita GHG emissions reductions of 8% in 2020 and 18% in 2035, surpassing the reduction targets of 8% and 13% for 2020 and 2035, respectively. Improved access and mobility, including increasing public transit capacity, are among the goals and potential benefits of implementation of the SCS portion of the 2016–2040 RTP/SCS (p.113).

2.1.3.2 South Coast Air Quality Management District

The South Coast Air Quality Management District (SCAQMD) is responsible for comprehensive air pollution control in the greater Los Angeles area. To provide GHG emissions guidance to local jurisdictions within the South Coast Air Basin, SCAQMD has organized a working group to develop GHG emissions analysis guidance and thresholds and released an interim GHG significance threshold for stationary sources (i.e., industrial projects) where SCAQMD is lead agency. At present, SCAQMD offers no regulations or thresholds for non-SCAQMD lead agency projects.

2.1.3.3 City of Los Angeles

The City of Los Angeles released its climate action plan, *Green LA: An Action Plan to Lead the Nation in Fighting Global Warming*, in May 2007. The plan sets forth a goal of reducing City GHG emissions to 35% below 1990 levels by 2030, one of the most aggressive goals of any big city in the United States. This voluntary plan identifies more than 50 action items, grouped into focus areas, to reduce emissions. Although the emphasis is first on municipal facilities and operations, several measures address programs to reduce emissions in the community.

ClimateLA (City of Los Angeles 2008) is the implementation program that provides detailed information about each action item discussed in the Green LA framework. Action items range from harnessing wind power for electricity production and implementing energy efficiency retrofits in City buildings to converting the City's fleet vehicles to cleaner and more-efficient models and reducing water consumption. Some actions affect only municipal facilities, such as retrofitting City Hall with high-efficiency lighting systems, while others facilitate changes in the private sector, such as rebates for the purchase of energy-efficient appliances. ClimateLA is a living document, reflecting a process of ongoing learning and continuous improvement as technology advances and City departments develop expertise in the methods for lowering GHG emissions.

The Sustainable City pLAn, introduced by Mayor Eric Garcetti in April 2015, identifies goals and strategies for improving Los Angeles' sustainability related to the environment, economy, and equity. One of the initial action steps within the pLAn is the appointment of a Chief Sustainability Officer within 18 key departments. With respect to greenhouse gases, the pLAn commits to increasing solar power generation and increasing energy efficiency. In addition, it accelerates the City's commitment to attaining GHG reductions, with the goals of reducing levels 45% by 2025, 60% by 2035, and 80% by 2050 in comparison to 1990 baseline emissions. The pLAn also puts forth the goal of improving GHG

efficiency² by 55% by 2025 and by 75% by 2035 relative to 2009 levels. Other targets identified in the pLAN include a 5% reduction in VMT per capita by 2025 and a 10% reduction by 2035, as well as increasing the percentage of trips made by walking, biking, or transit to 35% by 2025 and 50% by 2035.

2.1.3.4 Metro

Published and approved by the Metro Board in June 2012, the Climate Action and Adaptation Plan establishes a framework to identify the areas of greatest opportunity for Metro to reduce GHG emissions and evaluates opportunities based on their costs and the volumes of emissions they reduce. Metro's influence on GHG emissions extends to all of the County's transportation systems. As a first step, the plan focuses on prioritizing the most promising opportunities to reduce emissions from Metro's internal operations by 2020. The Climate Action and Adaptation Plan identified a goal of reducing Metro's GHG emissions per boarding by 5% from 2010 to 2020.

Metro adopted a Green Construction Policy in August 2011 and is committed to using more sustainable construction equipment and vehicles, as well as implementing best practices, to reduce harmful diesel emissions from all Metro construction projects performed on Metro properties and in Metro rights-of-way. The Green Construction Policy encourages the use of construction equipment with technologies such as hybrid drives and specific fuel economy standards, both of which are methods to reduce GHG emissions during the construction period.

2.2 Methodology

The proposed project would generate construction-related and operational emissions. The methodology used to evaluate construction and operational effects is described below.

2.2.1 Evaluation of Construction-Period Impacts

Project construction would be a source of GHG emissions. Such emissions would result from earthmoving and the use of heavy equipment as well as land clearing, ground excavation, cut-and-fill operations, and the reconstruction of roadways. Construction-period GHG emissions are quantified by using the California Emissions Estimator Model (CalEEMod) (version 2013.2.2). CalEEMod has been approved by SCAQMD for emissions estimations within the South Coast Air Basin. Consistent with SCAQMD-recommended methodology, total construction-period emissions are amortized over a 30-year period, then added to the opening-year GHG emissions total to arrive at the annual tons per year total, which accounts for construction and operations emissions.

2.2.2 Evaluation of Operations-Period Impacts

Operations-period GHG emissions would result from transit vehicle and maintenance facility operations as well as changes in local VMT related to local traffic redistribution, changes in roadway network travel speeds, and mode-shift effects that would occur because of the proposed project.

CalEEMod was used to estimate emissions related to maintenance facility operations that would result from trips made by workers; facility energy demands related to lighting, temperature control, and water conveyance; and area sources, such as the use of consumer products, periodic application

² GHG efficiency is measured by the amount of GHGs emitted per dollar of economic productivity.

of architectural coatings, the use of landscaping equipment, etc., that would occur during long-term project operations. In calculating mobile-source emissions, CalEEMod relies on EMFAC2011 emissions factors and default trip generation rates and distances. Area-source emissions were compiled using CalEEMod default assumptions.

Fixed guideway transit vehicle operations emissions were calculated by applying Los Angeles Department of Water and Power carbon intensity factors to the annual estimate of system electricity demand. Propulsion and station electricity demand were established by determining the per-mile energy demand for Metro's existing LRT lines and applying that consumption rate to the proposed 9.2-mile alignment.

Emissions related to changes in local VMT and roadway network travel speeds were calculated using traffic data (VMT apportioned into 5 mph speed bins) that were derived from a micro-simulation model that captures project effects and CT-EMFAC2014 emissions factors.

Each build alternative was compared against existing conditions, which "normally constitute[s] the baseline physical conditions by which a lead agency determines whether an impact is significant" under Section 15125(a) of the State CEQA Guidelines. Because Alternative 3 would have the greatest traffic impacts, the Existing (2012) with Alternative 3 scenario presents the worst-case scenario for GHG emissions relative to any of the other "existing plus project" scenarios. Thus, to evaluate, analyze, and compare each of the alternatives, the qualitative analysis for the other build alternatives extrapolates from the quantitative analysis for the Existing (2012) with Alternative 3 scenario. In addition, the emissions of each build alternative have been evaluated against the No-Build Alternative for a future baseline (2040) analysis.

2.3 Significance Thresholds

Significance thresholds are used to determine whether a project may have a significant environmental effect. The significance thresholds, as defined by federal and state regulations, are outlined below.

2.3.1 Federal

NEPA does not include specific significance thresholds. According to the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA, the determination of significance under NEPA is based on context and intensity.³ The CEQA thresholds (described below) encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. Therefore, the CEQA thresholds listed below also apply to NEPA for the project and its alternatives.

The CEQA thresholds (described below) encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. Therefore, the CEQA thresholds listed below also apply to NEPA for the proposed project alternatives.

³ Code of Federal Regulations. *CEQ Regulations for Implementing NEPA, 40 Code of Federal Regulations, Part 1508, Terminology and Index*. Available: <<http://ceq.hss.doe.gov/nepa/regs/ceq/1508.htm>>. Accessed: February 21, 2013.

2.3.2 State

CEQA does not describe specific significance thresholds. According to OPR, significance thresholds for a given environmental effect are at the discretion of the lead agency and are the levels at which the lead agency finds the effects of the project to be significant.⁴

2.3.2.1 State CEQA Guidelines

The State CEQA Guidelines define a significant effect on the environment 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 historic or aesthetic significance” (State CEQA Guidelines, Section 15382).

The State CEQA Guidelines do not describe specific significance thresholds. However, Appendix G of the State CEQA Guidelines lists a variety of potentially significant effects, which are often used as thresholds or guidance in developing thresholds for determining impact significance. Accordingly, for purposes of this DEIS/DEIR, a project would have a significant effect related to GHG emissions under CEQA if it would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

The State CEQA Guidelines also state that the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the determinations above.

Although SCAQMD has a regulatory role in the South Coast Air Basin, it has not adopted or proposed any quantitative thresholds that would be applicable to the proposed project. As such, project GHG emissions are evaluated for consistency with California’s AB 32 (Global Warming Solutions Act of 2006) emissions reduction goals to determine significance.

2.3.2.2 L.A. CEQA Thresholds Guide

The City’s *L.A. CEQA Threshold Guide* does not contain thresholds for climate change impacts related to GHG emissions. As such, project GHG emissions are evaluated for consistency with AB 32 emissions reduction goals to determine significance.

⁴ Governor’s Office of Planning and Research. 1994. *Thresholds of Significance: Criteria for Defining Environmental Significance*. September. Available: <<http://ceres.ca.gov/ceqa/more/tas/Threshold.html>>. Accessed: February 21, 2013.

3.1 Description of Relevant Pollutants

GHGs include CO₂, CH₄, N₂O, and fluorinated gases. Presented below is a description of each GHG and their known sources.

Carbon dioxide (CO₂) enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, respiration, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is also removed from the atmosphere (or “sequestered”) when it is absorbed by plants as part of the biological carbon cycle.

Methane (CH₄) is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and the decay of organic waste in municipal solid waste landfills.

Nitrous oxide (N₂O) is emitted during agricultural and industrial activities as well as during the combustion of fossil fuels and solid waste.

Fluorinated gases are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as High Global Warming Potential gases.

- *Chlorofluorocarbons (CFCs)* are GHGs and covered under the 1987 Montreal Protocol. CFCs are used in refrigeration, air-conditioning, packaging, insulation, solvents, or aerosol propellants. Because they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are being replaced by other compounds that are GHGs and covered under the Kyoto Protocol.
- *Perfluorocarbons (PFCs)* are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF₄] and perfluoroethane [C₂F₆]) were introduced as alternatives, along with HFCs, to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are also used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they are strong GHGs.
- *Sulfur Hexafluoride (SF₆)* is a colorless gas that is soluble in alcohol and ether and slightly soluble in water. SF₆ is a strong GHG and used primarily in electrical transmission and distribution systems as a dielectric.⁵
- *Hydrochlorofluorocarbons (HCFCs)* contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent than CFCs. They have been introduced as temporary replacements for CFCs and are also GHGs.
- *Hydrofluorocarbons (HFCs)* contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances in items that serve many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs.

⁵ An electrical insulator that is highly resistant to the flow of an electric current.

3.2 California GHG Emissions

California is the second-largest emitter of GHGs in the United States (Texas is the largest GHG emitter) and the sixteenth largest GHG emitter in the world.⁶ However, because of more stringent air pollutant emission regulations and mild climate, in 2001, California ranked fourth lowest in carbon emissions per capita and fifth lowest among states in CO₂ emissions from fossil fuel consumption per unit of Gross State Product (total economic output of goods and services). In 2010, California produced 452 million metric tons (MMT) of CO₂-equivalent (CO₂e)⁷ emissions, of which, 38% were from transportation sources, 21% from activities related to electric power generation, and 19% from industrial sources.⁸ Other major sources of state GHG emissions include mineral production, waste combustion and land use, and forestry changes. Agriculture, forestry, commercial, and residential activities compose the balance of California's GHG emissions.⁹

Climate change could affect the natural environment in California in the following ways, among others:

- Rising sea levels along the California coastline, particularly in San Francisco and the San Joaquin Delta due to ocean expansion.
- Extreme heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent.
- An increase in heat-related human deaths, infectious diseases, and a higher risk of respiratory problems caused by deteriorating air quality.
- Reduced snow pack and streamflow in the Sierra Nevada, affecting winter recreation and water supplies.
- Potential increase in the severity of winter storms, affecting peak streamflows and flooding.
- Changes in growing season conditions that could affect California agriculture, causing variations in crop quality and yield.
- Changes in the distribution of plant and wildlife species due to changes in temperature, competition from colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects.

These changes in California's climate and ecosystems are occurring at a time when California's population is expected to increase from 34 million to 59 million (i.e., by 2040) (California Energy Commission [CEC] 2005). As such, the number of people that could be affected by climate change, as well as the amount of anthropogenic GHG emissions expected under a "business as usual" scenario, is expected to increase. Changes similar to those noted above for California would also occur in other parts of the world, with regional variations in resources affected and vulnerability to adverse effects.

⁶ California Energy Commission. 2006. *Our Changing Climate, Assessing the Risks to California, 2006 Biennial Report*. California Climate Change Center, California Energy Commission Staff Paper, Sacramento, CA. Report CEC-500-2006-077.

⁷ GHG emissions, other than CO₂, are commonly converted into CO₂ equivalents, which take into account the differing global warming potential (GWP) of different gases. For example, the Intergovernmental Panel on Climate Change (IPCC) finds that N₂O has a GWP of 310, and CH₄ has a GWP of 21. Thus, the emission of 1 ton of N₂O and 1 ton of CH₄ is represented as the emission of 310 tons of CO₂e and 21 tons of CO₂e, respectively. This allows for the summation of different GHG emissions into a single total.

⁸ California Air Resources Board. 2013. *California Greenhouse Gas Inventory for 2000–2010 by Category, as Defined in the Scoping Plan*.

⁹ *Ibid.*

GHG emissions in California are attributable to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors (CEC 2006) as well as natural processes.

3.3 Project Vicinity Mobile-Source Emissions

The estimate of daily VMT that occurs within the project vicinity under the existing/baseline condition is approximately 5.3 million. This generates approximately 996,578 metric tons of CO₂e emissions per year.

4.1 No-Build Alternative

4.1.1 Generation of GHG Emissions

No construction activities would be undertaken under the No-Build Alternative, and no construction-related GHG emissions would be generated.

The No-Build Alternative would not involve any new project facilities or services. As a result, it would not generate new GHG emissions. No project-related impacts under CEQA or NEPA would occur as a result of the No-Build Alternative. Future conditions in 2040 under the No-Build Alternative represent the future baseline against which proposed project alternatives are compared. As shown in Table 4-1, traffic operations in 2012 and 2040 under no-build conditions would result in annual emissions of approximately 72 MMT of CO₂e under the 2012 scenario and approximately 61 MMT of CO₂e under the 2040 scenario. Emissions were calculated using traffic data from the SCAG region (with VMT apportioned into 5 mph speed bins), as derived from a traffic micro-simulation model and CT-EMFAC2014 emissions factors. The fleet assumed by the model takes into consideration the fuel efficiency of recent vehicle models as well as older models that will continue to operate but phased out over time. Because of regional population growth, more cars are assumed to be in operation in 2040 relative to existing conditions.

Table 4-1. Baseline Conditions – GHG Emissions

| Phase | CO ₂ e (metric tons) |
|--|---------------------------------|
| Operation | |
| 2012 Traffic Emissions | 71,942,145 |
| 2040 Traffic Emissions | 60,993,074 |
| Source: Emissions modeling by ICF (2016) (Appendix A). | |

4.1.2 Potential for Conflict with GHG Reduction Plans

The No-Build Alternative would not involve construction activities and would not affect capacity on roadways in the project vicinity. It would not conflict with Metro Climate Action and Adaptation Plan, GreenLA, ClimateLA, Sustainable City pLAn, SB 375, or AB 32 Scoping Plan measures, nor would it be inconsistent in with the goals of reducing local and statewide GHG emissions. No project-related impacts under CEQA or NEPA would occur as a result of the No-Build Alternative; however, the No-Build Alternative would not include transit system improvements that could help achieve the goals of those plans.

4.2 TSM Alternative

4.2.1 Generation of GHG Emissions

The TSM Alternative may include minor physical improvements to bus stops and roadways; consequently, there would be no or very minor construction-related GHG emissions.

Operation of the TSM Alternative would result in GHG emissions stemming from the use of motor vehicles. As demonstrated for the 2012 Alternative 3 scenario in Table 4-5, there would be net reductions in operational GHG emissions relative to the 2012 no-build scenario. Because roadway capacity would be reduced by the greatest amount under Alternative 3, relative to the other build alternatives, Alternative 3 represents a worst-case scenario with respect to traffic flow. By extension, operations under the TSM Alternative would result in fewer delays and more efficient operating speeds compared with Alternative 3, which would result in lower emissions from motor vehicles operating in the project vicinity. On the basis of the less extensive traffic impacts relative to the 2012 Alternative 3 scenario and the fact that the TSM Alternative would not have emissions associated with a new MSF or LRT/tram propulsion system, operational GHG emissions reductions under the 2012 TSM Alternative would be greater than those identified in Table 4-5. Because of the reduction in GHG emissions under the 2012 TSM Alternative, no significant impacts would occur under CEQA, and no adverse effects would occur under NEPA.

As shown in Table 4-2, traffic operations in 2040 under the TSM Alternative would result in annual emissions of approximately 3,000 MT of CO₂e compared with the future (2040) baseline condition with respect to vehicle emissions, an increase of 0.005%. Emissions were calculated using traffic data derived from a traffic micro-simulation model and CT-EMFAC2014 emissions factors (with VMT apportioned into 5 mph speed bins). The TSM Alternative would result in a negligible increase in GHG emissions compared with the baseline because of increased bus service and lower operational efficiency on roadways in the project vicinity. The lower operational efficiency would result from the additional delays on project vicinity roadways relative to 2040 baseline conditions. Impacts are addressed below.

Table 4-2. TSM Alternative – GHG Emissions in 2040

| Phase | CO ₂ e (metric tons) |
|--|---------------------------------|
| Operation | |
| Traffic Emissions | 60,996,107 |
| 2040 Baseline Traffic Emissions | 60,993,074 |
| <i>Net Operational Emissions</i> | 3,033 |
| TOTAL | 3,033 |
| Percent Change Compared to 2040 Baseline | 0.005% |
| Source: Emissions modeling by ICF (2016) (Appendix A). | |

4.2.2 Potential for Conflict with GHG Reduction Plans

SB 375 supports the state's climate action goals to reduce GHG emissions through coordinated transportation and land use planning with the goal of more sustainable communities. Specifically, SB 375 requires regional transportation plans to include a policy element that describes the transportation issues in the region, identifies and quantifies regional needs, and describes the desired short-range and long-range transportation goals, and pragmatic objective and policy statements. SB 375 also recommended the quantification of indicators of means of travel and transit accessibility.

As directed by SB 375, SCAG's primary goal with the RTP/SCS is to provide a vision for future growth in Southern California that will decrease per capita greenhouse gas emissions from automobiles and light trucks, with goals of an 8% reduction by 2020 and an 18% reduction by 2035. The 2016-2040 RTP/SCS identifies improved access and mobility as one of its goals (p.64). The TSM Alternative would increase bus frequencies and enhance transit capacity, which would support the RTP/SCS goal of improved accessibility and mobility in its implementation of SB 375. Therefore, the TSM Alternative would not conflict with the goals of SB 375 and the SCAG RTP/SCS.

The Metro Climate Action and Adaptation Plan identified the goal of reducing Metro's GHG emissions per boarding by 5% from 2010 to 2020. As identified in the Transportation Impacts Report, operation of the TSM Alternative would result in approximately 500 new transit trips per day (KOA 2015). Given that increased ridership would be achieved along the alignment compared with the future 2040 baseline conditions, the TSM Alternative would contribute to a decrease in GHG emissions from Metro buses per boarding, as additional transit boardings would occur with a marginal increase in service. The increase in GHG emissions under the TSM Alternative would occur as a result of minor increases in congestion due to the additional buses on the street network. Despite an overall increase in GHG emissions occurring as a result of increased congestion, the TSM Alternative would reduce Metro's emissions per transit boarding and would not conflict with the 5% GHG emissions reduction per boarding goal.

The Sustainable City pLAN outlines goals of GHG emission reductions of 45% by 2025, 60% by 2035, and 80% by 2050 in comparison to 1990 baseline emissions, as well as reductions in VMT per capita and increases in the percentage of trips made by walking, biking, and transit. Operation of the TSM Alternative would result in new transit trips, thereby contributing to reductions in VMT per capita and increases in the percentage of trips made by transit. Because mode-shift from cars to more efficient public transit vehicles would occur, the TSM Alternative would not conflict with the pLAN GHG reduction goals.

Operation of TSM Alternative is predicted to result in GHG emissions of approximately 3,000 metric tons (MT) over the future (2040) baseline conditions (an increase of 0.005%) based on vehicles operating at less efficient speeds due to increased congestion. However, this estimate could be offset by future transportation-source GHG emissions reductions as the project vicinity becomes more transit-oriented and sustainable over time. Changes in development patterns would lead to higher levels of mode-shift from passenger vehicle to transit, bicycle, and walking trips.

Overall, the TSM Alternative would not conflict with AB 32, SB 32, or SB 375 or Metro and City goals to reduce GHG emissions by providing the transportation infrastructure necessary to enable more sustainable communities. No significant impacts would occur under CEQA, and no adverse effects would occur under NEPA.

4.3 Build Alternative 1 – Curb-Running BRT Alternative

4.3.1 Generation of GHG Emissions

Construction activities under Alternative 1 would involve roadway and sidewalk modifications as well as the installation of canopies at stops. These activities would result in the emission of approximately 1,280 metric tons of CO_{2e} over the course of the construction period, as shown in Table 4-3. Consistent with SCAQMD-recommended methodology, construction-period emissions were amortized over a 30-year period, resulting in an annual equivalent of approximately 43 metric tons of CO_{2e}.

Table 4-3. Alternative 1 – GHG Emissions in 2040

| Phase | CO _{2e} (metric tons) |
|--|--------------------------------|
| Operation | |
| Traffic Emissions | 60,995,897 |
| 2040 Baseline Traffic Emissions | 60,993,074 |
| <i>Net Operational Emissions</i> | 2,823 |
| Construction | |
| Roadway, Sidewalks, and Stations | 1,281 |
| <i>30-Year Amortization of Construction Emissions</i> | 43 |
| TOTAL | 2,866 |
| Percent Change Compared to 2040 Baseline | 0.005% |
| Source: Emissions modeling by ICF (2016) (Appendix A). | |

Operation of Alternative 1 would result in GHG emissions stemming from the use of motor vehicles. As demonstrated for the 2012 Alternative 3 scenario in Table 4-5, there would be net reductions in operational GHG emissions relative to the 2012 no-build scenario. Because roadway capacity would be reduced by the greatest amount under Alternative 3, relative to the other build alternatives, Alternative 3 represents a worst-case scenario with respect to traffic flow. By extension, operations under Alternative 1 would result in fewer delays and more efficient operating speeds compared with Alternative 3, which would result in lower emissions from motor vehicles operating in the project vicinity. On the basis of the less extensive traffic impacts relative to the 2012 Alternative 3 scenario and the fact that Alternative 1 would not have emissions associated with a new MSF or LRT/tram propulsion system, operational GHG emissions reductions under the 2012 Alternative 1 scenario would be greater than those identified in Table 4-5. Because of the reduction in GHG emissions under the 2012 Alternative 1 scenario, no significant impacts would occur under CEQA, and no adverse effects would occur under NEPA.

As shown in Table 4-3, traffic operations in 2040 under Alternative 1 would result in annual emissions of approximately 2,800 MT of CO_{2e} compared with future (2040) baseline vehicle emissions, an increase of 0.005%. Emissions were calculated using traffic data derived from a traffic micro-simulation model and CT-EMFAC2014 emissions factors (with VMT apportioned into 5 mph speed bins).

Including the amortized construction emissions, total GHG emission resulting from the implementation of Build Alternative 1 would be 0.005% greater than under the future (2040) baseline condition. The projected increases in GHG generation are due to construction emissions as well as increased bus service and the lower operational efficiency of roadways in the project vicinity. Impacts related to GHG emissions are discussed below.

4.3.2 Potential for Conflict with GHG Reduction Plans

Alternative 1 would introduce a curb-running BRT service capable of increasing transit capacity, which would support the SCS goal of improved access and capacity in its implementation of SB 375. Therefore, Alternative 1 would not conflict with the goals of SB 375 and the SCAG RTP/SCS. The 2016-2040 RTP/SCS identifies improved accessibility and mobility as one of its goals (p. 64).

Alternative 1 would introduce BRT service capable of increasing transit capacity, which would support the RTP/SCS goal of improved accessibility and mobility in its implementation of SB 375. Although Alternative 1 would result in greater GHG emissions than under the future (2040) baseline condition, it would not conflict with the goals of SB 375 and the SCAG RTP/SCS in that it would provide a new transit service that would contribute to a larger rapid transit network. Such rapid transit systems are a recognized method of achieving transportation-related GHG emissions reductions.

The Metro Climate Action and Adaptation Plan identified the goal of reducing Metro's GHG emissions per boarding by 5% from 2010 to 2020. As identified in the Transportation Impacts Report, operation of Alternative 1 would result in approximately 3,000 new transit trips per day (KOA 2015). Given that increased ridership would be achieved with an increase of 10 Metro buses operating along the alignment compared with the future (2040) baseline, Alternative 1 would contribute to a decrease in GHG emissions per boarding and would not conflict with the 5% GHG emissions reduction per boarding goal. In addition, construction activities would comply with the Metro Green Construction Policy.

The Sustainable City pLAN outlines GHG emissions reduction goals of 45% by 2025, 60% by 2035, and 80% by 2050 compared with 1990 baseline emissions as well as reductions in VMT per capita and increases in the percentage of trips made by walking, biking, and transit. Operation of Alternative 1 would result in new transit trips, thereby contributing to reductions in VMT per capita and increases in the percentage of trips made by transit. Because mode-shift from cars to more efficient public transit vehicles would occur, Alternative 1 would not conflict with the Sustainable City pLAN GHG reduction goals.

Although the Alternative 1 year 2040 traffic scenario predicts a certain level of mode-shift from passenger vehicle to transit, bicycle, and walking trips based on existing land use patterns, additional mode-shift would most likely occur as a result of future transit-oriented development (TOD)/redevelopment that this project may facilitate. Because these potential changes are not well understood and difficult to quantify, potential future transportation-source GHG emissions reductions were not included in the modeling.

Without considering a future mode shift to transit, bicycle, and walking trips, operation of Alternative 1 is predicted to result in GHG emissions reductions under the 2012 scenario and increases of approximately 2,800 MT (a 0.005% increase) compared with future (2040) baseline conditions, with vehicles operating at less efficient speeds because of increased congestion. However, future transportation-source GHG emissions reductions could offset this minimal increase as the project vicinity becomes more transit oriented and sustainable over time. Changes in development patterns would lead to higher levels of mode shift from passenger vehicles to transit, bicycle, and walking.

Overall, Alternative 1 does not conflict with AB 32, SB 32, or SB 375 or Metro or City goals to reduce GHG emissions by providing the transportation infrastructure necessary to enable more sustainable communities. No significant impact would occur under CEQA, and no adverse effects would occur under NEPA.

4.4 Build Alternative 2 – Median-Running BRT Alternative

4.4.1 Generation of GHG Emissions

Construction activities under Alternative 2 would involve roadway, bus stop, and sidewalk modifications to allow for a median-running BRT service. These activities would result in the emission of approximately 2,170 metric tons of CO₂e, as shown in Table 4-4. Consistent with SCAQMD-recommended methodology, construction-period emissions were amortized over a 30-year period, resulting in an annual equivalent of approximately 72 MT of CO₂e.

Table 4-4. Alternative 2 – GHG Emissions in 2040

| Phase | CO ₂ e (metric tons) |
|--|---------------------------------|
| Operation | |
| Traffic Emissions | 60,993,238 |
| 2040 Baseline Traffic Emissions | 60,993,074 |
| <i>Net Operational Traffic Emissions</i> | 165 |
| Construction | |
| Roadway, Sidewalks, and Stations | 2,168 |
| <i>30-Year Amortization of Construction Emissions</i> | 72 |
| TOTAL | 237 |
| Percent Change Compared to 2040 Baseline | 0.0004% |
| Source: Emissions modeling by ICF (2015) (Appendix A). | |

Operation of Alternative 2 would result in GHG emissions stemming from the use of motor vehicles in the project vicinity. As demonstrated for the 2012 Alternative 3 scenario in Table 4-5, there would be net reductions in operational GHG emissions relative to the 2012 no-build scenario. Because roadway capacity would be reduced by the greatest amount under Alternative 3, relative to the other build alternatives, Alternative 3 represents a worst-case scenario with respect to traffic flow. By extension, operations under Alternative 2 would result in fewer delays and more efficient operating speeds compared with Alternative 3, which would result in lower emissions from motor vehicles operating in the project vicinity. On the basis of the less extensive traffic impacts relative to the 2012 Alternative 3 scenario and the fact that Alternative 2 would not have emissions associated with a new MSF or LRT/tram propulsion system, operational GHG emissions reductions under the 2012 Alternative 2 scenario would be greater than those identified in Table 4-5. Because of the reduction in GHG emissions under the 2012 Alternative 2 scenario, no significant impacts would occur under CEQA, and no adverse effects would occur under NEPA.

As shown in Table 4-4, without considering a future mode shift to transit, bicycle, and walking trips, traffic operations in 2040 under Alternative 2 would result in annual emissions of approximately 165 MT of CO₂e compared with future (2040) baseline vehicle emissions, an increase of less than one-thousandth of 1%. Similar to Alternative 1, the projected increases in GHG emissions would be due to construction emissions as well increased bus service and the lower operational efficiency of roadways in the project vicinity. Emissions were calculated using traffic data that were derived from a traffic micro-simulation model and CT-EMFAC2014 emissions factors (with VMT apportioned into 5 mph speed bins).

Including the amortized construction emissions, total GHG emission resulting from the implementation of Build Alternative 2 would be 0.0004% greater than the future (2040) baseline condition. Impacts due to GHG emissions are discussed below.

4.4.2 Potential for Conflict with GHG Reduction Plans

Alternative 2 would introduce a BRT service capable of increasing transit capacity, which would support the RTP/SCS goal of improved access and capacity in its implementation of SB 375. Therefore, Alternative 2 would not conflict with the goals of SB 375 and the SCAG RTP/SCS.

Similar to Alternative 1, Alternative 2 would contribute to a decrease in GHG emissions per boarding and would not conflict with the goal of achieving 5% GHG emissions reduction per boarding identified in the Metro Climate Action and Adaptation Plan. Alternative 2's construction activities would also comply with the Metro Green Construction Policy.

Similar to Alternative 1, Alternative 2 would not conflict with the Sustainable City pLAN GHG emissions reduction goals.

Although the 2040 traffic scenario under Alternative 2 predicts a certain level of mode shift from passenger vehicles to transit, bicycle, and walking trips, based on existing land use patterns, an additional mode shift may occur as a result of the future TOD/redevelopment that this project may facilitate. Because these potential changes are not well understood and speculative, potential transportation-source GHG emissions reductions are not quantified.

Operation of Alternative 2 is predicted to result in GHG emissions reductions compared with 2012 existing conditions. Without considering future mode shift, emissions would increase by approximately 165 MT compared with future (2040) baseline conditions (a 0.0004% increase), based on vehicles operating at less efficient speeds because of increased congestion. However, this estimate could be offset by future transportation-source GHG emissions reductions as the project vicinity becomes more transit oriented and sustainable over time. Changes in development patterns would lead to higher levels of mode shift from passenger vehicles to transit, bicycle, and walking trips.

Overall, Alternative 2 would not conflict with AB 32, SB 32, or SB 375 or Metro or City goals to reduce GHG emissions by providing the transportation infrastructure necessary to enable more sustainable communities. No significant impacts would occur under CEQA, and no adverse effects would occur under NEPA.

4.5 Build Alternative 3 – Low-Floor LRT/Tram Alternative

4.5.1 Generation of GHG Emissions

Construction activities under Alternative 3 would involve roadway and sidewalk modifications to allow for median-running Low-Floor LRT/Tram service. In addition, Alternative 3 would involve construction of a MSF, a pedestrian bridge to the Sylmar/San Fernando Metrolink station, and the installation of TPSS units. In total, these activities would result in the emission of approximately 4,025 metric tons of CO_{2e}, as shown in Table 4-5. Consistent with SCAQMD-recommended methodology, construction-period emissions were amortized over a 30-year period, resulting in an annual equivalent of approximately 134 metric tons of CO_{2e}.

Operation of Alternative 3 would result in GHG emissions stemming from the use of motor vehicles, operation of an MSF, and electricity consumption for vehicle propulsion and station operation. As shown in Table 4-5, project operation under the 2012 Alternative 3 scenario would result in reductions in mobile-source GHG emissions (760 MT) relative to the 2012 no-build scenario. However, because of amortized construction emissions, as well as ongoing transit vehicle propulsion and maintenance facility emissions, the 2012 Alternative 3 scenario would result in a 0.019% increase in emissions compared with the 2012 baseline scenario. Emissions were calculated using traffic data derived from a traffic micro-simulation model and CT-EMFAC2014 emissions factors (with VMT apportioned into 5 mph speed bins). Operation of the MSF would be responsible for an additional 1,420 MT of CO_{2e} being emitted annually. LRT vehicle propulsion and station operation would result in the emission of 12,900 MT of CO_{2e} per year.

Table 4-5. Alternative 3 – GHG Emissions in 2012

| Phase | CO _{2e} (metric tons) |
|--|--------------------------------|
| Operation | |
| Traffic Emissions | 71,941,386 |
| 2012 Baseline Traffic Emissions | 71,942,145 |
| <i>Net Operational Traffic Emissions</i> | (760) |
| Maintenance Facility | 1,416 |
| Vehicle Propulsion and Stations | 12,904 |
| Construction | |
| Roadway/Track, Sidewalks, Stations | 3,116 |
| Maintenance Facility | 562 |
| TPSS, Bridges, and Other | 347 |
| 30-year Amortization of Construction Emissions | 134 |
| TOTAL | 13,694 |
| Percent Change Compared to 2012 Baseline | 0.019% |
| Source: Emissions modeling by ICF (2016) (Appendix A). | |

Similar to Alternatives 1 and 2, the projected increases in GHG emissions under Alternative 3 would be due to construction activities as well as the introduction of low-floor LRT/tram service, which would result in emissions from the electricity used to power it. Because Alternative 3 would result in an increase in GHG emissions compared with the 2012 no-build scenario, such changes would be significant under CEQA. No adverse effects would occur under NEPA because the increase would result from the provision of an additional high-capacity transit service in an urban setting and would not represent a substantial increase in the context of global GHG emissions.

In the longer term, as shown in Table 4-6, traffic operations under the 2040 Alternative 3 scenario would result in the annual emission of approximately 44,000 MT of CO₂e above future (2040) baseline-condition vehicle emissions, an increase of approximately 0.072%. Including the amortized construction emissions, implementation of Alternative 3 would result in a 0.096% increase in GHG emissions compared with future (2040) baseline emissions.

Table 4-6. Alternative 3 – GHG Emissions in 2040

| Phase | CO ₂ e (metric tons) |
|--|---------------------------------|
| Operation | |
| Traffic Emissions | 61,037,093 |
| 2040 Baseline Traffic Emissions | 60,993,074 |
| <i>Net Operational Traffic Emissions</i> | 44,019 |
| Maintenance Facility | 1,416 |
| Vehicle Propulsion and Stations | 12,904 |
| Construction | |
| Roadway/Track, Sidewalks, Stations | 3,116 |
| Maintenance Facility | 562 |
| TPSS, Bridges, and Other | 347 |
| 30-year Amortization of Construction Emissions | 134 |
| TOTAL | 58,473 |
| Percent Change Compared to 2040 Baseline | 0.096% |
| Source: Emissions modeling by ICF (2016) (Appendix A). | |

4.5.2 Potential for Conflict with GHG Reduction Plans

Alternative 3 would introduce a Low-Floor LRT/Tram service capable of increasing transit capacity, which would support the RTP/SCS goal of improved access and capacity in its implementation of SB 375. Therefore, Alternative 3 would not conflict with the goals of SB 375 and the SCAG RTP/SCS.

A goal of the Metro Climate Action and Adaptation Plan is to reduce Metro’s GHG emissions per boarding by 5% between 2010 and 2020. As identified in the Transportation Impacts Report, operation of Alternative 3 would result in approximately 8,500 new transit trips (KOA 2015). Because increased ridership on energy-efficient low-floor LRT/tram vehicles would be achieved without substantially increasing GHG emissions relative to the future (2040) baseline, Alternative 3 would not conflict with the goal of a 5% GHG emissions reduction per boarding. In addition, construction activities would comply with the Metro Green Construction Policy.

Alternative 3 would not conflict with the Sustainable City pLAN GHG reduction goals. Although the 2040 traffic scenario under Alternative 3 predicts a certain level of mode shift from passenger vehicles to transit, bicycle, and walking trips, based on existing land use patterns, additional mode shift may occur as a result of the future TOD/redevelopment that this project may facilitate. Because these potential changes are not well understood and speculative, potential transportation-source GHG emissions reductions are not quantified.

Without considering future mode shift to transit, bicycle and walking trips, operation of Alternative 3 is predicted to result in GHG emissions of approximately 58,000 MT CO_{2e} over the future (2040) baseline conditions (an increase of 0.096%), with vehicles operating at less efficient speeds because of increased congestion. However, this estimate could be offset by future transportation-source GHG emissions reductions as the project vicinity becomes more transit-oriented and sustainable over time. Changes in development patterns would lead to higher levels of mode shift from passenger vehicles to transit, bicycle, and walking trips.

Overall, Alternative 3 does not conflict with AB 32, SB 32, or SB 375 or Metro or City of Los Angeles goals to reduce GHG emissions by providing the transportation infrastructure necessary to enable more sustainable communities. Alternative 3 would be supportive of these policies in the long run because it would improve transit service and result in mobility improvements by providing the increased capacity necessary to move more people more efficiently along the corridor. However, in the interim, Alternative 3 would result in an increase of GHG emissions over future baseline conditions because of lower vehicle speeds and increased congestion in mixed-flow vehicle lanes. Therefore, Alternative 3 would result in a significant impact with respect to GHG emissions under CEQA.

4.6 Build Alternative 4 – LRT Alternative

4.6.1 Generation of GHG Emissions

Alternative 4 would involve construction activities and changes to roadways and sidewalks to accommodate LRT service. This would include construction of a tunnel and three subterranean stations. In addition, Alternative 4 would involve construction of a MSF, a pedestrian bridge to the Sylmar/San Fernando Metrolink station, the LRT and heavy rail bridges over the Pacoima Wash, and the installation of TPSS units. MSF Site 2 and the cut-and-cover method of tunnel construction were assumed because these would result in the greatest impacts with respect to GHG emissions. In total, these activities would result in the emission of approximately 19,900 metric tons of CO_{2e}, as shown in Table 4-7. Consistent with SCAQMD-recommended methodology, construction-period emissions were amortized over a 30-year period, resulting in an annual equivalent of approximately 663 metric tons of CO_{2e}.

Operation of Alternative 4 would result in GHG emissions stemming from the use of motor vehicles, operation of a MSF, and electricity consumption for vehicle propulsion and station operation. As demonstrated for the 2012 Alternative 3 scenario in Table 4-5, there would be net reductions in operational GHG emissions from motor vehicles operating in the project vicinity relative to the 2012 no-build scenario. Because roadway capacity would be reduced by the greatest amount under Alternative 3, relative to the other build alternatives, Alternative 3 represents a worst-case scenario with respect to traffic flow. By extension, operations under Alternative 4 would result in fewer delays and more efficient operating speeds compared with Alternative 3, which would result in lower emissions from motor vehicles operating in the project vicinity. On the basis of the less extensive traffic impacts relative to the 2012 Alternative 3 scenario, operational traffic-related GHG emissions reductions under the 2012 Alternative 4 scenario would be greater than those identified in Table 4-5.

Table 4-7. Alternative 4 – GHG Emissions in 2040

| Phase | CO ₂ e (metric tons) |
|--|---------------------------------|
| Operation | |
| Traffic Emissions | 60,964,076 |
| 2040 Baseline Traffic Emissions | 60,993,074 |
| <i>Net Operational Traffic Emissions</i> | <i>(28,998)</i> |
| Maintenance Facility | 1,416 |
| Vehicle Propulsion and Stations | 12,904 |
| Construction | |
| Roadway/Track, Sidewalks, Aboveground Stations | 3,618 |
| Tunnels and Belowground Stations (Cut and Cover) | 15,366 |
| Maintenance Facility | 562 |
| TPSS, Bridges, and Other | 347 |
| 30-year Amortization of Construction Emissions | 663 |
| TOTAL | (14,015) |
| Percent Change Compared to 2040 Baseline | (0.023%) |
| Source: Emissions modeling by ICF (2016) (Appendix A). | |

Although there would be emissions associated with the new MSF and LRT vehicle propulsion system under the 2012 Alternative 4 scenario that would not occur under the 2012 no-build scenario, the reductions in emissions from motor vehicles would offset emissions from the MSF and LRT propulsion such that overall operational emissions would be minor. Because of the minor change in GHG emissions under the 2012 Alternative 4 scenario, no significant impacts would occur under CEQA, and no adverse effects would occur under NEPA.

As shown in Table 4-7, traffic operations in 2040 under Alternative 4 would result in an annual emissions reduction of approximately 29,000 MT of CO₂e compared with the future (2040) baseline condition with respect to vehicle emissions, a decrease of 0.05%. Emissions were calculated using traffic data derived from a traffic micro-simulation model and CT-EMFAC2014 emissions factors (with VMT apportioned into 5 mph speed bins). Operation of the MSF would be responsible for an additional 1,420 MT of CO₂e emitted annually. LRT vehicle propulsion and station operation would result in the emission of 12,900 MT of CO₂e per year.

Including the amortized construction emissions, implementation of Alternative 4 would result in a 0.023% reduction in GHG emissions compared with future (2040) baseline conditions.

4.6.2 Potential for Conflict with GHG Reduction Plans

Alternative 4 would provide new LRT service capable of increasing transit capacity, which would support the RTP/SCS goal of improved access and capacity in its implementation of SB 375. Therefore, Alternative 4 would not conflict with the goals of SB 375 and the SCAG RTP/SCS.

A goal of the Metro Climate Action and Adaptation Plan is to reduce Metro’s GHG emissions per boarding by 5% between 2010 and 2020. As identified in the Transportation Impacts Report, operation of Alternative 4 would result in approximately 8,600 new transit trips (KOA 2015). Because

increased ridership would be achieved while decreasing overall GHG emissions relative to future (2040) baseline conditions, Alternative 4 would contribute to a decrease in GHG emissions per boarding and would not conflict with the goal of a 5% GHG emissions reduction per boarding. In addition, construction activities would comply with the Metro Green Construction Policy.

Alternative 4 would not conflict with the Sustainable City pLAN GHG reduction goals.

Although the 2040 traffic scenario under Alternative 4 predicts a certain level of mode shift from passenger vehicles to transit, bicycle, and walking trips, based on existing land use patterns, additional mode shift may occur as a result of the future TOD/redevelopment that this project may facilitate. Because these potential changes are not well understood and speculative, potential transportation-source GHG emissions reductions are not quantified.

Operation of Alternative 4 is predicted to result in GHG emissions reductions (or minor increases under the 2012 Alternative 4 scenario). In addition, GHG emissions reductions of approximately 15,000 MT below future (2040) baseline conditions would occur, based on predicted future travel behavior and existing land use patterns (i.e., non-TOD). This estimate would most likely be reduced further by future transportation-source GHG emissions reductions as the project vicinity becomes more transit oriented and sustainable over time. Changes in development patterns would lead to higher levels of mode shift from passenger vehicles to transit, bicycle, and walking trips.

Overall, Alternative 4 would not conflict with AB 32, SB 32, or SB 375 or Metro or City of Los Angeles goals to reduce GHG emissions by providing the transportation infrastructure necessary to enable more sustainable communities.

4.7 Cumulative Impacts

GHG emissions and climate change are exclusively cumulative impacts; there are no non-cumulative GHG emissions impacts from a climate change perspective. Climate change is the result of cumulative global emissions. No single project, when considered in isolation, can cause climate change because a single project's emissions are not enough to change the radiative balance of the atmosphere. Because climate change is the result of GHG emissions and GHGs are emitted by innumerable sources worldwide, global climate change will have a significant cumulative impact on the natural environment as well as human development and activity. As such, GHGs and climate change are cumulatively considerable, even though the contribution may be individually limited (SCAQMD 2008). SCAQMD methodology and thresholds are thus cumulative in nature.

As discussed above, the project would not exceed the threshold of significance and would be consistent with adopted plans and regulations that aim to reduce GHG emissions, with the exception of Alternatives 3 and 4. Alternatives 3 and 4 would result in potentially cumulatively considerable impacts because they would increase, compared with existing baseline conditions, GHG emissions related to transit vehicle propulsion and station and MSF operations. Therefore, under Alternative 3, the project would contribute to a cumulatively significant impact related to GHG emissions and climate change. For all other alternatives, however, GHG emissions would not be cumulatively considerable.

5.1 Operational Mitigation Measures

The GHG emissions increases from implementation of Alternatives 3 and 4 would result primarily from transit vehicle propulsion, with additional emissions increases associated with station and MSF operations, which are necessary for project operation. Feasible mitigation measures to reduce GHG emissions have been explored. As specified in Metro's June 2012 Climate Action and Adaptation Plan, Metro has investigated on-board storage of regenerative braking energy for all new rail cars. A study prepared for Bay Area Rapid Transit found that regenerative braking energy storage, in combination with different propulsion systems and changes to lighting and ventilation, could result in a per-mile reduction in electricity usage of 43% (Metro 2010).

5.2 Construction Mitigation Measures

No mitigation measures are required.

Chapter 6

Impacts Remaining After Mitigation

6.1 No-Build Alternative

No impacts would occur as a result of construction and operation of the No-Build Alternative.

6.2 Transportation System Management Alternative

Impacts due to construction and operation of the TSM Alternative would be less than significant under CEQA and minor adverse under NEPA.

6.3 Build Alternative 1 – Curb-Running BRT Alternative

Impacts due to the construction and operation of Alternative 1 would be less than significant under CEQA and minor adverse under NEPA.

6.4 Build Alternative 2 – Median-Running BRT Alternative

Impacts due to construction and operation of Alternative 2 would be less than significant under CEQA and minor adverse under NEPA.

6.5 Build Alternative 3 – Low-Floor LRT/Tram Alternative

Impacts due to construction of Alternative 3 would be less than significant under CEQA and minor adverse under NEPA. Impacts due to operation of Alternative 3 would be minor adverse under NEPA, but significant and unavoidable under CEQA.

6.6 Build Alternative 4 – LRT Alternative

Impacts due to construction and operation of Alternative 4 would be less than significant under CEQA and minor adverse under NEPA. Because net increases in operational GHG emissions could result, such emissions could be cumulatively considerable.

Chapter 7

CEQA Determination

Project operational impacts for CEQA would be less than significant under the TSM Alternative, Alternative 1, and Alternative 2. Project operational impacts for CEQA would be significant and unavoidable under Alternative 3. Project impacts under Alternative 4 would be less than significant, but operational GHG emissions could result in cumulatively considerable impacts. No impacts would occur under the No-Build Alternative.

Chapter 8 References

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Appendix A

CO₂e Calculations

No-Build Alternative

| Phase | CO ₂ e (metric tons) |
|-----------------------------------|---------------------------------|
| Operation | |
| 2012 Traffic Emissions | 71,942,145 |
| 2040 Traffic Emissions | 60,993,074 |
| Source: Emissions modeling by ICF | |

2012 Baseline

2040 Baseline

TSM Alternative

| Phase | CO ₂ e (metric tons) |
|-----------------------------------|---------------------------------|
| Operation | |
| 2040 Traffic Emissions | 60,996,107 |
| 2040 TOTAL | 60,996,107 |
| Source: Emissions modeling by ICF | |

Change from Baseline

3,033 0.005%

Alternative 1

| Phase | CO ₂ e (metric tons) |
|--|---------------------------------|
| Operation | |
| 2040 Traffic Emissions | 60,995,897 |
| Construction | |
| Roadway, Sidewalks, and Stations | 1,281 |
| 30-Year Amortization of Construction Emissions | 43 |
| 2040 TOTAL | 60,995,940 |
| Source: Emissions modeling by ICF | |

Change from Baseline

2,823 0.005%

2,866 0.005%

Alternative 2

| Phase | CO ₂ e (metric tons) |
|--|---------------------------------|
| Operation | |
| 2040 Traffic Emissions | 60,993,238 |
| Construction | |
| Roadway, Sidewalks, and Stations | 2,168 |
| 30-Year Amortization of Construction Emissions | 72 |
| 2040 TOTAL | 60,993,310 |
| Source: Emissions modeling by ICF | |

Change from Baseline

165 0.00027%

237 0.00039%

Alternative 3

| Phase | CO ₂ e (metric tons) |
|--|---------------------------------|
| Operation | |
| 2012 Traffic Emissions | 71,941,386 |
| 2040 Traffic Emissions | 61,037,093 |
| Maintenance Facility | 1,416 |
| Vehicle Propulsion and Stations | 12,904 |
| Construction | |
| Roadway/Track, Sidewalks, Stations | 3,116 |
| Maintenance Facility | 562 |
| TPSS, Bridges, and Other | 347 |
| 30-Year Amortization of Construction Emissions | 134.17 |
| 2012 TOTAL | 71,955,840 |
| 2040 TOTAL | 61,051,547 |
| Source: Emissions modeling by ICF | |

| <u>Change from Baseline</u> | |
|-----------------------------|---------------|
| (759) | -0.001% |
| 44,019 | 0.072% |
| 13,695 | 0.019% |
| 58,473 | 0.096% |

Alternative 4

| Phase | CO ₂ e (metric tons) |
|--|---------------------------------|
| Operation | |
| 2040 Traffic Emissions | 60,964,076 |
| Maintenance Facility | 1,416 |
| Vehicle Propulsion and Stations | 12,904 |
| Construction | |
| Roadway/Track, Sidewalks, Aboveground Stations | 3,618 |
| Tunnels and Belowground Stations (Cut and Cover) | 15,366 |
| Maintenance Facility | 562 |
| TPSS, Bridges, and Other | 347 |
| 30-Year Amortization of Construction Emissions | 663.10 |
| 2040 TOTAL | 60,979,059 |
| Source: Emissions modeling by ICF | |

| <u>Change from Baseline</u> | |
|-----------------------------|----------------|
| (28,998) | -0.048% |
| (14,015) | -0.023% |

Propulsion Station Energy Estimate

Fiscal Year 2014 Propulsion Power and Station Consumption Report

Light Rail Energy Consumption (KWh) for FY 2014

139,376,756

Source: Metro 2014

Increase to Account for 24-Hour Operation*

153,314,432 KWh

Assumptions: Depending on the line and current timetables, Metro would need to operate from 5 to 12% more trains to operate 24 hours per day with 20-minute headways during late-night hours. A 10% increase in energy is assumed to be conservative. Actual energy consumption required for 24-hour operation may be less.

| LRT Lines | Distance |
|---|-------------------------|
| Blue Line | 22.17 miles |
| Expo Line | 8.83 miles |
| Green Line | 19.64 miles |
| Gold Line | 19.51 miles |
| Total | 70.15 miles |
| LRT Energy Consumption/Mile/Year (24-Hour Operation) | 2,185,522.90 KWh |

ESFV Tram/LRT Distance **9.2 miles**
 Projected Annual Energy Consumption for ESFV Propulsion and Stations **20,106,811 KWh**

| Emission Factors for LADWP Electricity | | | | | | | | |
|---|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| ROG | Nox | CO | Sox | PM10 | PM2.5 | C02e | | |
| 0.0071 | 0.0645 | 0.0542 | 0.00039 | 0.00491 | 0.00491 | 491.0958904 | | |
| Factors 8.41731E-09 | 7.64671E-08 | 6.42561E-08 | 4.62359E-10 | 5.82098E-09 | 5.82098E-09 | 0.000582212 | | |
| Annual Emissions (tons) | | | | | | | | |
| ROG | Nox | CO | Sox | PM10 | PM2.5 | C02e | | |
| 0.169 | 1.538 | 1.292 | 0.009 | 0.117 | 0.117 | 11,706.428 | | |
| Daily Emissions (pounds per day) | | | | | | | | |
| ROG | Nox | CO | Sox | PM10 | PM2.5 | C02e | | |
| 0.93 | 8.42 | 7.08 | 0.05 | 0.64 | 0.64 | 64,144.81 | | |
| Maintenance Facility Operational Emissions | | | | | | | | |
| <i>Calculations from CalEEMod, mobile emissions from the site accounted for in the regional emissions calculations based on</i> | | | | | | | | |
| ROG | Nox | CO | Sox | PM10 | PM2.5 | C02e | | |
| Area 1.8311 | 0.00007 | 0.00725 | 0 | 0.00003 | 0.00003 | 0.02 | | |
| Energy 0.0389 | 0.3537 | 0.2971 | 0.00212 | 0.0269 | 0.0269 | 426.9825 | | |
| Maintenance Facility Total 1.87 | 0.35377 | 0.30435 | 0.00212 | 0.02693 | 0.02693 | 426.9987 | | |

| Daily Emissions (pounds per day) | | | | | | | | |
|--|-------------|--------------|------|--------------|--------------|--------------|--|--|
| ROG | Nox | CO | Sox | PM10 | PM2.5 | C02e | | |
| Total Stationary-Source Operational Emissions 2.80 | 8.78 | 7.38 | 0.05 | 0.67 | 0.67 | 64,571.81 | | |
| 2040 Total Mobile-Source Operational Emissions (Alternative 3, Net) 145.65 | 510.34 | 448.54 | | 1.22 | 1.65 | 265,316.87 | | |
| 2040 Total Operational Emissions (Alternative 3, Net) 148.44 | 519.12 | 455.93 | 0.05 | 1.89 | 2.32 | 329,888.68 | | |
| 2040 Total Mobile-Source Operational Emissions (Alternative 4, Net) -75.65234837 | -142.647798 | -154.4211538 | | -9.057258505 | -4.157701194 | -174927.2915 | | |
| 2040 Total Operational Emissions (Alternative 4, Net) (72.85) | (133.87) | (147.04) | 0.05 | (8.39) | (3.49) | (110,355.48) | | |

2040 Highway VMT

2040

| Bin Name | No Build | | TSM | | Alt 1 | | Alt 2 | | Alt 3 | | Alt 4 | |
|--------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|
| | VMT | % | VMT | % | VMT | % | VMT | % | VMT | % | VMT | % |
| 5 | 9,786,243 | 1.82% | 9,775,190 | 1.82% | 9,887,427 | 1.84% | 9,786,998 | 1.82% | 9,880,429 | 1.84% | 9,684,373 | 1.80% |
| 10 | 13,119,543 | 2.44% | 13,241,903 | 2.46% | 12,951,532 | 2.41% | 13,230,699 | 2.46% | 13,200,108 | 2.45% | 13,175,622 | 2.45% |
| 15 | 18,963,516 | 3.53% | 18,705,410 | 3.48% | 19,129,395 | 3.56% | 18,779,299 | 3.49% | 18,891,919 | 3.51% | 19,035,358 | 3.54% |
| 20 | 29,373,785 | 5.46% | 29,607,307 | 5.50% | 29,334,666 | 5.45% | 29,666,350 | 5.52% | 29,914,887 | 5.56% | 29,413,249 | 5.47% |
| 25 | 40,658,558 | 7.56% | 40,737,272 | 7.57% | 40,705,071 | 7.57% | 40,628,340 | 7.55% | 40,823,425 | 7.59% | 40,470,020 | 7.53% |
| 30 | 64,210,038 | 11.94% | 63,979,209 | 11.90% | 63,816,202 | 11.87% | 63,759,974 | 11.86% | 64,006,898 | 11.90% | 63,834,059 | 11.87% |
| 35 | 83,565,389 | 15.54% | 83,896,620 | 15.60% | 84,006,388 | 15.62% | 83,860,702 | 15.59% | 83,446,615 | 15.52% | 84,065,604 | 15.63% |
| 40 | 56,761,571 | 10.55% | 56,439,423 | 10.49% | 56,471,219 | 10.50% | 56,740,123 | 10.55% | 56,717,057 | 10.55% | 56,772,782 | 10.56% |
| 45 | 28,988,434 | 5.39% | 28,993,484 | 5.39% | 28,963,469 | 5.39% | 28,997,664 | 5.39% | 28,917,307 | 5.38% | 29,013,811 | 5.40% |
| 50 | 36,508,261 | 6.79% | 36,691,513 | 6.82% | 36,774,695 | 6.84% | 36,498,627 | 6.79% | 36,405,166 | 6.77% | 36,717,924 | 6.83% |
| 55 | 23,403,060 | 4.35% | 23,234,174 | 4.32% | 23,293,885 | 4.33% | 23,436,319 | 4.36% | 23,393,512 | 4.35% | 23,502,673 | 4.37% |
| 60 | 22,556,119 | 4.19% | 22,582,019 | 4.20% | 22,545,987 | 4.19% | 22,565,269 | 4.20% | 22,500,655 | 4.18% | 22,510,586 | 4.19% |
| 65 | 35,553,006 | 6.61% | 35,603,606 | 6.62% | 35,621,514 | 6.62% | 35,518,285 | 6.60% | 35,463,176 | 6.59% | 35,431,286 | 6.59% |
| 70 | 40,886,563 | 7.60% | 40,845,101 | 7.59% | 40,794,748 | 7.59% | 40,799,540 | 7.59% | 40,766,579 | 7.58% | 40,638,039 | 7.56% |
| 70+ | 33,502,781 | 6.23% | 33,502,079 | 6.23% | 33,504,393 | 6.23% | 33,527,958 | 6.23% | 33,500,352 | 6.23% | 33,501,076 | 6.23% |
| Total | 537,836,867 | 100.00% | 537,834,311 | 100.00% | 537,800,591 | 100.00% | 537,796,149 | 100.00% | 537,828,085 | 100.00% | 537,766,463 | 100.00% |

2012

| Bin Name | No Build | | Alt 3 | |
|--------------|--------------------|----------------|--------------------|----------------|
| | VMT | % | VMT | % |
| 5 | 1,687,986 | 0.40% | 1,686,896 | 0.40% |
| 10 | 2,866,596 | 0.69% | 2,874,059 | 0.69% |
| 15 | 5,680,722 | 1.36% | 5,671,353 | 1.36% |
| 20 | 10,826,589 | 2.59% | 10,835,883 | 2.59% |
| 25 | 31,752,690 | 7.59% | 31,746,828 | 7.59% |
| 30 | 58,980,974 | 14.10% | 58,959,642 | 14.09% |
| 35 | 67,960,989 | 16.24% | 67,988,754 | 16.25% |
| 40 | 43,840,075 | 10.48% | 43,823,018 | 10.47% |
| 45 | 18,312,802 | 4.38% | 18,320,679 | 4.38% |
| 50 | 27,912,837 | 6.67% | 27,905,236 | 6.67% |
| 55 | 23,120,728 | 5.53% | 23,127,539 | 5.53% |
| 60 | 20,195,581 | 4.83% | 20,188,664 | 4.83% |
| 65 | 21,472,363 | 5.13% | 21,465,049 | 5.13% |
| 70 | 38,047,528 | 9.09% | 38,060,507 | 9.10% |
| 70+ | 45,724,021 | 10.93% | 45,720,424 | 10.93% |
| Total | 418,382,480 | 100.00% | 418,374,532 | 100.00% |

Project Traffic Operation Emissions Summary (2040)

| Pounds per Day Pollutant Name | Project Emissions | | | | | | Alternative - No Build Emissions | | | | |
|----------------------------------|-------------------|-------------|-------------|-------------|-------------|-------------|----------------------------------|--------|-------|---------|-----------|
| | No Build | TSM | Alt 1 | Alt 2 | Alt 3 | Alt 4 | TSM | Alt 1 | Alt 2 | Alt 3 | Alt 4 |
| HC | 65,742 | 65,751 | 65,791 | 65,754 | 65,896 | 65,664 | 8 | 49 | 12 | 154 | (78) |
| ROG | 60,862 | 60,870 | 60,912 | 60,874 | 61,008 | 60,787 | 8 | 49 | 11 | 146 | (76) |
| TOG | 72,515 | 72,524 | 72,567 | 72,528 | 72,685 | 72,429 | 9 | 53 | 14 | 170 | (85) |
| CO | 530,143 | 530,155 | 530,156 | 530,144 | 530,592 | 529,989 | 12 | 12 | 1 | 449 | (154) |
| NOx | 168,455 | 168,480 | 168,438 | 168,327 | 168,966 | 168,327 | 25 | 73 | 71 | 510 | (143) |
| CO2 | 368,122,873 | 368,141,193 | 368,139,867 | 368,123,810 | 368,388,190 | 367,947,946 | 18,319 | 16,993 | 937 | 265,317 | (174,927) |
| CH4 | 9,974 | 9,975 | 9,977 | 9,976 | 9,994 | 9,965 | 1 | 3 | 2 | 21 | (8) |
| PM10 | 62,523 | 62,523 | 62,519 | 62,518 | 62,524 | 62,514 | (0) | (4) | (4) | 1 | (9) |
| PM2.5 | 25,606 | 25,606 | 25,604 | 25,604 | 25,607 | 25,602 | 0 | (1) | (2) | 2 | (4) |
| Benzene | 1,302 | 1,302 | 1,303 | 1,303 | 1,305 | 1,301 | 0 | 1 | 0 | 3 | (1) |
| Acrolein | 39 | 39 | 39 | 39 | 40 | 39 | 0 | 0 | 0 | 0 | (0) |
| Acetaldehyde | 1,053 | 1,053 | 1,053 | 1,053 | 1,056 | 1,052 | 0 | 0 | 0 | 3 | (1) |
| Formaldehyde | 2,379 | 2,380 | 2,380 | 2,380 | 2,385 | 2,378 | 0 | 1 | 1 | 6 | (2) |
| Butadiene | 196 | 196 | 196 | 196 | 197 | 196 | 0 | 0 | 0 | 0 | (0) |
| Naphthalene | 75 | 75 | 75 | 75 | 75 | 75 | 0 | 0 | 0 | 0 | (0) |
| POM | 38 | 38 | 38 | 38 | 38 | 38 | 0 | 0 | 0 | 0 | (0) |
| Diesel PM | 497 | 497 | 497 | 497 | 497 | 497 | 0 | (0) | (0) | 0 | (0) |
| DEOG | 12,356 | 12,358 | 12,359 | 12,359 | 12,389 | 12,347 | 2 | 3 | 3 | 33 | (9) |

g/lb
453.592

| Tons per Year Pollutant Name | Project Emissions | | | | | | Alternative - No Build Emissions | | | | |
|---------------------------------|-------------------|------------|------------|------------|------------|------------|----------------------------------|-------|-------|--------|----------|
| | No Build | TSM | Alt 1 | Alt 2 | Alt 3 | Alt 4 | TSM | Alt 1 | Alt 2 | Alt 3 | Alt 4 |
| HC | 11,998 | 11,999 | 12,007 | 12,000 | 12,026 | 11,984 | 1 | 9 | 2 | 28 | (14) |
| ROG | 11,107 | 11,109 | 11,116 | 11,110 | 11,134 | 11,093 | 1 | 9 | 2 | 27 | (14) |
| TOG | 13,234 | 13,236 | 13,244 | 13,236 | 13,265 | 13,218 | 2 | 10 | 3 | 31 | (15) |
| CO | 96,751 | 96,753 | 96,753 | 96,751 | 96,833 | 96,723 | 2 | 3 | 0 | 82 | (28) |
| NOx | 30,743 | 30,748 | 30,756 | 30,756 | 30,836 | 30,717 | 4 | 13 | 13 | 93 | (26) |
| CO2 | 60,946,837 | 60,949,870 | 60,949,651 | 60,946,992 | 60,990,763 | 60,917,876 | 3,033 | 2,814 | 155 | 43,926 | (28,961) |
| CH4 | 1,651 | 1,651 | 1,652 | 1,652 | 1,655 | 1,650 | - | 0 | 0 | 3 | (1) |
| CO2e | 60,993,074 | 60,996,107 | 60,995,897 | 60,993,238 | 61,037,093 | 60,964,076 | 3,033 | 2,823 | 165 | 44,019 | (28,998) |
| PM10 | 11,410 | 11,410 | 11,410 | 11,410 | 11,411 | 11,409 | - | (0) | (1) | 0 | (1) |
| PM2.5 | 4,673 | 4,673 | 4,673 | 4,673 | 4,673 | 4,672 | - | (0) | (0) | 0 | (1) |
| Benzene | 238 | 238 | 238 | 238 | 238 | 237 | - | 0 | - | 1 | (0) |
| Acrolein | 7 | 7 | 7 | 7 | 7 | 7 | - | - | - | - | - |
| Acetaldehyde | 192 | 192 | 192 | 192 | 193 | 192 | 0 | 0 | 0 | 1 | - |
| Formaldehyde | 434 | 434 | 434 | 434 | 435 | 434 | - | - | - | 1 | (0) |
| Butadiene | 36 | 36 | 36 | 36 | 36 | 36 | - | - | - | - | - |
| Naphthalene | 14 | 14 | 14 | 14 | 14 | 14 | - | - | - | - | - |
| POM | 7 | 7 | 7 | 7 | 7 | 7 | - | - | - | - | - |
| Diesel PM | 91 | 91 | 91 | 91 | 91 | 91 | - | - | - | 0 | - |
| DEOG | 2,255 | 2,255 | 2,256 | 2,256 | 2,261 | 2,253 | 0 | 1 | 1 | 6 | (2) |

metric tons
metric tons
metric tons

* GWP of 28 used for CH4 per Myhre et al. 2013

Increase in CO2e 0.005% 0.005% 0.0004% 0.096% -0.023%

Project Traffic Operation Emissions Summary (2012)

| Pounds per Day Pollutant Name | Project Emissions | | Alternative - No Build Emissions |
|----------------------------------|-------------------|-----------|----------------------------------|
| | No Build | Alt 3 | Alt 3 |
| ROG | 187,182 | 187,173 | (9) |
| CO | 2,223,083 | 2,223,028 | (55) |
| NOx | 707,749 | 707,736 | (13) |
| PM10 | 63,339 | 63,338 | (1) |
| PM2.5 | 33,706 | 33,706 | (0) |
| Benzene | 4,326 | 4,326 | (0) |
| Acrolein | 146 | 146 | (0) |
| Acetaldehyde | 3,238 | 3,238 | (0) |
| Formaldehyde | 7,503 | 7,503 | (0) |
| Butadiene | 714 | 714 | (0) |
| Naphthalene | 220 | 220 | (0) |
| POM | 183 | 183 | (0) |
| Diesel PM | 12,973 | 12,973 | (0) |
| DEOG | 36,946 | 36,944 | (2) |

| Tons per Year Pollutant Name | Project Emissions | | Alternative - No Build Emissions |
|---------------------------------|-------------------|------------|----------------------------------|
| | No Build | Alt 3 | Alt 3 |
| HC | 35,269 | 35,268 | (1) |
| ROG | 34,161 | 34,159 | (2) |
| TOG | 40,321 | 40,319 | (2) |
| CO | 405,712 | 405,702 | (10) |
| NOx | 129,164 | 129,162 | (2) |
| CO2 | 71,812,679 | 71,811,919 | (760) metric tons |
| CH4 | 4,624 | 4,624 | - metric tons |
| CO2e | 71,942,145 | 71,941,386 | (760) metric tons |
| PM10 | 11,560 | 11,559 | (0) |
| PM2.5 | 6,151 | 6,151 | - |
| Benzene | 789 | 789 | - |
| Acrolein | 27 | 27 | - |
| Acetaldehyde | 591 | 591 | - |
| Formaldehyde | 1,369 | 1,369 | - |
| Butadiene | 130 | 130 | - |
| Naphthalene | 40 | 40 | - |
| POM | 34 | 34 | - |
| Diesel PM | 2,368 | 2,368 | - |
| DEOG | 6,743 | 6,742 | (0) |

* GWP of 28 used for CH4 per Myhre et al. 2013

Alternative 1: Roads, Sidewalks, and Stations

ESFV Alt 1 Roadway, Sidewalks, and Stations Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|----------------------------|----------|----------|-------------|--------------------|------------|
| Other Asphalt Surfaces | 4,500.00 | 1000sqft | 103.31 | 4,500,000.00 | 0 |
| Other Non-Asphalt Surfaces | 6.20 | 1000sqft | 0.14 | 6,200.00 | 0 |

1.2 Other Project Characteristics

| | | | | | |
|---------------------------------|---|---------------------------------|-------|----------------------------------|-------|
| Urbanization | Urban | Wind Speed (m/s) | 2.2 | Precipitation Freq (Days) | 33 |
| Climate Zone | 12 | | | Operational Year | 2019 |
| Utility Company | Los Angeles Department of Water & Power | | | | |
| CO2 Intensity (lb/MW hr) | 1227.89 | CH4 Intensity (lb/MW hr) | 0.029 | N2O Intensity (lb/MW hr) | 0.006 |

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Curb-running BRT with construction starting in June 2017 for an 18-month duration

Land Use - Roadway: 4.5 million square feet of road to be repaved

Sidewalks/Stations: Removal of curbs and gutters, addition of curbs and gutters, additions of sidewalks and ramps ~ 6,200 sf

Construction Phase - 18-month construction starting in June 2017, construction to occur 6 days/week ~ 470 days of construction

Approximately 2/3 of construction apportioned to site preparation and the remaining 1/3 apportioned to paving/stripping

Grading - Material Imported: 500 cy paving materials + 4.5 M sf- 4 inch dpt (55,556 cy) + 1,050 cy PCC pads = 57,106 cy

Material Exported: 4.5 M sf with 4" dept (55,556 cy) + 1,050 cy 9 PCC pads + 1,218 cy for SW/curb/Misc removal = 57,824 cy

Architectural Coating - Striping for roadway ~ 2 square feet of striping for every linear foot (9.2 miles) = 97,152 sf

Energy Use -

Construction Off-road Equipment Mitigation - Water exposed areas three times daily

Clean paved roads

Tier 4 Final equipment

| Table Name | Column Name | Default Value | New Value |
|---------------------------|-----------------------------------|---------------|--------------|
| tblArchitecturalCoating | ConstArea_Nonresidential_Exterior | 2,253,100.00 | 97,152.00 |
| tblArchitecturalCoating | ConstArea_Nonresidential_Interior | 6,759,300.00 | 0.00 |
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 50 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstructionPhase | NumDays | 220.00 | 120.00 |
| tblConstructionPhase | NumDays | 120.00 | 320.00 |
| tblConstructionPhase | NumDays | 220.00 | 30.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblGrading | AcresOfGrading | 0.00 | 104.00 |
| tblGrading | MaterialExported | 0.00 | 57,824.00 |
| tblGrading | MaterialImported | 0.00 | 57,106.00 |
| tblProjectCharacteristics | OperationalYear | 2014 | 2019 |

2.0 Emissions Summary

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 | 21.5102 | 5.4000e-004 | 0.0581 | 0.0000 | | 2.1000e-004 | 2.1000e-004 | | 2.1000e-004 | 2.1000e-004 | 0.0000 | 0.1118 | 0.1118 | 3.0000e-004 | 0.0000 | 0.1182 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 21.5102 | 5.4000e-004 | 0.0581 | 0.0000 | 0.0000 | 2.1000e-004 | 2.1000e-004 | 0.0000 | 2.1000e-004 | 2.1000e-004 | 0.0000 | 0.1118 | 0.1118 | 3.0000e-004 | 0.0000 | 0.1182 |

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 | 21.5102 | 5.4000e-004 | 0.0581 | 0.0000 | | 2.1000e-004 | 2.1000e-004 | | 2.1000e-004 | 2.1000e-004 | 0.0000 | 0.1118 | 0.1118 | 3.0000e-004 | 0.0000 | 0.1182 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 21.5102 | 5.4000e-004 | 0.0581 | 0.0000 | 0.0000 | 2.1000e-004 | 2.1000e-004 | 0.0000 | 2.1000e-004 | 2.1000e-004 | 0.0000 | 0.1118 | 0.1118 | 3.0000e-004 | 0.0000 | 0.1182 |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | 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 |

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 | 6/1/2017 | 6/8/2018 | 6 | 320 | |
| 2 | Paving | Paving | 6/9/2018 | 10/26/2018 | 6 | 120 | |
| 3 | Architectural Coating | Architectural Coating | 10/27/2018 | 12/7/2018 | 5 | 30 | Striping |

Acres of Grading (Site Preparation Phase): 104

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 97,152 (Architectural Coating – sqft)

OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|-----------------------|---------------------------|--------|-------------|-------------|-------------|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |
| Paving | Pavers | 2 | 8.00 | 125 | 0.42 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Paving | Paving Equipment | 2 | 8.00 | 130 | 0.36 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 255 | 0.40 |

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 | 14,366.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 379.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2017

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 | | | | | 2.9523 | 0.0000 | 2.9523 | 1.5959 | 0.0000 | 1.5959 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.4427 | 4.7354 | 3.6048 | 3.5800e-003 | | 0.2520 | 0.2520 | | 0.2319 | 0.2319 | 0.0000 | 332.2858 | 332.2858 | 0.1018 | 0.0000 | 334.4238 |
| Total | 0.4427 | 4.7354 | 3.6048 | 3.5800e-003 | 2.9523 | 0.2520 | 3.2043 | 1.5959 | 0.2319 | 1.8277 | 0.0000 | 332.2858 | 332.2858 | 0.1018 | 0.0000 | 334.4238 |

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 | 0.0709 | 1.1142 | 0.8857 | 3.0600e-003 | 0.1101 | 0.0156 | 0.1257 | 0.0290 | 0.0143 | 0.0434 | 0.0000 | 275.6621 | 275.6621 | 2.0400e-003 | 0.0000 | 275.7050 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 6.4400e-003 | 9.5100e-003 | 0.0990 | 2.3000e-004 | 0.0181 | 1.7000e-004 | 0.0182 | 4.7900e-003 | 1.5000e-004 | 4.9500e-003 | 0.0000 | 16.9511 | 16.9511 | 9.2000e-004 | 0.0000 | 16.9705 |
| Total | 0.0774 | 1.1237 | 0.9847 | 3.2900e-003 | 0.1281 | 0.0158 | 0.1439 | 0.0338 | 0.0145 | 0.0483 | 0.0000 | 292.6131 | 292.6131 | 2.9600e-003 | 0.0000 | 292.6755 |

3.2 Site Preparation - 2017**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 | | | | | 1.1514 | 0.0000 | 1.1514 | 0.6224 | 0.0000 | 0.6224 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0435 | 0.1886 | 1.9436 | 3.5800e-003 | | 5.8000e-003 | 5.8000e-003 | | 5.8000e-003 | 5.8000e-003 | 0.0000 | 332.2854 | 332.2854 | 0.1018 | 0.0000 | 334.4234 |
| Total | 0.0435 | 0.1886 | 1.9436 | 3.5800e-003 | 1.1514 | 5.8000e-003 | 1.1572 | 0.6224 | 5.8000e-003 | 0.6282 | 0.0000 | 332.2854 | 332.2854 | 0.1018 | 0.0000 | 334.4234 |

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 | 0.0709 | 1.1142 | 0.8857 | 3.0600e-003 | 0.0637 | 0.0156 | 0.0792 | 0.0177 | 0.0143 | 0.0320 | 0.0000 | 275.6621 | 275.6621 | 2.0400e-003 | 0.0000 | 275.7050 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 6.4400e-003 | 9.5100e-003 | 0.0990 | 2.3000e-004 | 0.0102 | 1.7000e-004 | 0.0104 | 2.8700e-003 | 1.5000e-004 | 3.0300e-003 | 0.0000 | 16.9511 | 16.9511 | 9.2000e-004 | 0.0000 | 16.9705 |
| Total | 0.0774 | 1.1237 | 0.9847 | 3.2900e-003 | 0.0739 | 0.0158 | 0.0896 | 0.0205 | 0.0145 | 0.0350 | 0.0000 | 292.6131 | 292.6131 | 2.9600e-003 | 0.0000 | 292.6755 |

3.2 Site Preparation - 2018**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 | | | | | 2.9523 | 0.0000 | 2.9523 | 1.5959 | 0.0000 | 1.5959 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.2940 | 3.1242 | 2.4821 | 2.6800e-003 | | 0.1620 | 0.1620 | | 0.1491 | 0.1491 | 0.0000 | 244.8260 | 244.8260 | 0.0762 | 0.0000 | 246.4266 |
| Total | 0.2940 | 3.1242 | 2.4821 | 2.6800e-003 | 2.9523 | 0.1620 | 3.1143 | 1.5959 | 0.1491 | 1.7449 | 0.0000 | 244.8260 | 244.8260 | 0.0762 | 0.0000 | 246.4266 |

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 | 0.0520 | 0.7750 | 0.6506 | 2.2900e-003 | 0.1057 | 0.0117 | 0.1174 | 0.0275 | 0.0107 | 0.0382 | 0.0000 | 202.9802 | 202.9802 | 1.5500e-003 | 0.0000 | 203.0128 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.3300e-003 | 6.4600e-003 | 0.0671 | 1.7000e-004 | 0.0135 | 1.2000e-004 | 0.0136 | 3.5900e-003 | 1.1000e-004 | 3.7000e-003 | 0.0000 | 12.2251 | 12.2251 | 6.4000e-004 | 0.0000 | 12.2386 |
| Total | 0.0564 | 0.7815 | 0.7176 | 2.4600e-003 | 0.1193 | 0.0118 | 0.1310 | 0.0311 | 0.0108 | 0.0419 | 0.0000 | 215.2052 | 215.2052 | 2.1900e-003 | 0.0000 | 215.2513 |

3.2 Site Preparation - 2018**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 | | | | | 1.1514 | 0.0000 | 1.1514 | 0.6224 | 0.0000 | 0.6224 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0326 | 0.1412 | 1.4550 | 2.6800e-003 | | 4.3500e-003 | 4.3500e-003 | | 4.3500e-003 | 4.3500e-003 | 0.0000 | 244.8257 | 244.8257 | 0.0762 | 0.0000 | 246.4263 |
| Total | 0.0326 | 0.1412 | 1.4550 | 2.6800e-003 | 1.1514 | 4.3500e-003 | 1.1557 | 0.6224 | 4.3500e-003 | 0.6267 | 0.0000 | 244.8257 | 244.8257 | 0.0762 | 0.0000 | 246.4263 |

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 | 0.0520 | 0.7750 | 0.6506 | 2.2900e-003 | 0.0593 | 0.0117 | 0.0710 | 0.0161 | 0.0107 | 0.0268 | 0.0000 | 202.9802 | 202.9802 | 1.5500e-003 | 0.0000 | 203.0128 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.3300e-003 | 6.4600e-003 | 0.0671 | 1.7000e-004 | 7.6600e-003 | 1.2000e-004 | 7.7800e-003 | 2.1500e-003 | 1.1000e-004 | 2.2600e-003 | 0.0000 | 12.2251 | 12.2251 | 6.4000e-004 | 0.0000 | 12.2386 |
| Total | 0.0564 | 0.7815 | 0.7176 | 2.4600e-003 | 0.0670 | 0.0118 | 0.0788 | 0.0182 | 0.0108 | 0.0291 | 0.0000 | 215.2052 | 215.2052 | 2.1900e-003 | 0.0000 | 215.2513 |

3.3 Paving - 2018

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 | 0.0967 | 1.0298 | 0.8697 | 1.3400e-003 | | 0.0563 | 0.0563 | | 0.0518 | 0.0518 | 0.0000 | 122.2125 | 122.2125 | 0.0381 | 0.0000 | 123.0114 |
| Paving | 0.1353 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.2320 | 1.0298 | 0.8697 | 1.3400e-003 | | 0.0563 | 0.0563 | | 0.0518 | 0.0518 | 0.0000 | 122.2125 | 122.2125 | 0.0381 | 0.0000 | 123.0114 |

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 | 3.1600e-003 | 4.7200e-003 | 0.0490 | 1.3000e-004 | 9.8600e-003 | 9.0000e-005 | 9.9500e-003 | 2.6200e-003 | 8.0000e-005 | 2.7000e-003 | 0.0000 | 8.9234 | 8.9234 | 4.7000e-004 | 0.0000 | 8.9333 |
| Total | 3.1600e-003 | 4.7200e-003 | 0.0490 | 1.3000e-004 | 9.8600e-003 | 9.0000e-005 | 9.9500e-003 | 2.6200e-003 | 8.0000e-005 | 2.7000e-003 | 0.0000 | 8.9234 | 8.9234 | 4.7000e-004 | 0.0000 | 8.9333 |

3.3 Paving - 2018

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 | 0.0165 | 0.0714 | 1.0157 | 1.3400e-003 | | 2.2000e-003 | 2.2000e-003 | | 2.2000e-003 | 2.2000e-003 | 0.0000 | 122.2123 | 122.2123 | 0.0381 | 0.0000 | 123.0113 |
| Paving | 0.1353 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.1518 | 0.0714 | 1.0157 | 1.3400e-003 | | 2.2000e-003 | 2.2000e-003 | | 2.2000e-003 | 2.2000e-003 | 0.0000 | 122.2123 | 122.2123 | 0.0381 | 0.0000 | 123.0113 |

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 | 3.1600e-003 | 4.7200e-003 | 0.0490 | 1.3000e-004 | 5.5900e-003 | 9.0000e-005 | 5.6800e-003 | 1.5700e-003 | 8.0000e-005 | 1.6500e-003 | 0.0000 | 8.9234 | 8.9234 | 4.7000e-004 | 0.0000 | 8.9333 |
| Total | 3.1600e-003 | 4.7200e-003 | 0.0490 | 1.3000e-004 | 5.5900e-003 | 9.0000e-005 | 5.6800e-003 | 1.5700e-003 | 8.0000e-005 | 1.6500e-003 | 0.0000 | 8.9234 | 8.9234 | 4.7000e-004 | 0.0000 | 8.9333 |

3.4 Architectural Coating - 2018

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 | 0.5629 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 4.4800e-003 | 0.0301 | 0.0278 | 4.0000e-005 | | 2.2600e-003 | 2.2600e-003 | | 2.2600e-003 | 2.2600e-003 | 0.0000 | 3.8299 | 3.8299 | 3.6000e-004 | 0.0000 | 3.8375 |
| Total | 0.5674 | 0.0301 | 0.0278 | 4.0000e-005 | | 2.2600e-003 | 2.2600e-003 | | 2.2600e-003 | 2.2600e-003 | 0.0000 | 3.8299 | 3.8299 | 3.6000e-004 | 0.0000 | 3.8375 |

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 | 0.0200 | 0.0298 | 0.3093 | 7.9000e-004 | 0.0623 | 5.6000e-004 | 0.0629 | 0.0166 | 5.2000e-004 | 0.0171 | 0.0000 | 56.3661 | 56.3661 | 2.9600e-003 | 0.0000 | 56.4284 |
| Total | 0.0200 | 0.0298 | 0.3093 | 7.9000e-004 | 0.0623 | 5.6000e-004 | 0.0629 | 0.0166 | 5.2000e-004 | 0.0171 | 0.0000 | 56.3661 | 56.3661 | 2.9600e-003 | 0.0000 | 56.4284 |

3.4 Architectural Coating - 2018

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 | 0.5629 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 4.5000e-004 | 1.9300e-003 | 0.0275 | 4.0000e-005 | | 6.0000e-005 | 6.0000e-005 | | 6.0000e-005 | 6.0000e-005 | 0.0000 | 3.8299 | 3.8299 | 3.6000e-004 | 0.0000 | 3.8375 |
| Total | 0.5633 | 1.9300e-003 | 0.0275 | 4.0000e-005 | | 6.0000e-005 | 6.0000e-005 | | 6.0000e-005 | 6.0000e-005 | 0.0000 | 3.8299 | 3.8299 | 3.6000e-004 | 0.0000 | 3.8375 |

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 | 0.0200 | 0.0298 | 0.3093 | 7.9000e-004 | 0.0353 | 5.6000e-004 | 0.0359 | 9.9200e-003 | 5.2000e-004 | 0.0104 | 0.0000 | 56.3661 | 56.3661 | 2.9600e-003 | 0.0000 | 56.4284 |
| Total | 0.0200 | 0.0298 | 0.3093 | 7.9000e-004 | 0.0353 | 5.6000e-004 | 0.0359 | 9.9200e-003 | 5.2000e-004 | 0.0104 | 0.0000 | 56.3661 | 56.3661 | 2.9600e-003 | 0.0000 | 56.4284 |

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

4.2 Trip Summary Information

| Land Use | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|----------------------------|-------------------------|----------|--------|-------------|------------|
| | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Other Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Total | 0.00 | 0.00 | 0.00 | | |

4.3 Trip Type Information

| Land Use | Miles | | | Trip % | | | Trip Purpose % | | |
|----------------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
| | 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 | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Other Non-Asphalt Surfaces | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

| LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 0.530902 | 0.057841 | 0.178699 | 0.124790 | 0.039063 | 0.006298 | 0.016951 | 0.033908 | 0.002496 | 0.003149 | 0.003689 | 0.000536 | 0.001678 |

5.3 Energy by Land Use - Electricity

Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|-----------------|---------------|---------------|---------------|---------------|
| Land Use | kWh/yr | MT/yr | | | |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|-----------------|---------------|---------------|---------------|---------------|
| Land Use | kWh/yr | MT/yr | | | |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

6.0 Area Detail

6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 21.5102 | 5.4000e-004 | 0.0581 | 0.0000 | | 2.1000e-004 | 2.1000e-004 | | 2.1000e-004 | 2.1000e-004 | 0.0000 | 0.1118 | 0.1118 | 3.0000e-004 | 0.0000 | 0.1182 |
| Unmitigated | 21.5102 | 5.4000e-004 | 0.0581 | 0.0000 | | 2.1000e-004 | 2.1000e-004 | | 2.1000e-004 | 2.1000e-004 | 0.0000 | 0.1118 | 0.1118 | 3.0000e-004 | 0.0000 | 0.1182 |

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 | 5.2216 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 16.2832 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 5.5000e-003 | 5.4000e-004 | 0.0581 | 0.0000 | | 2.1000e-004 | 2.1000e-004 | | 2.1000e-004 | 2.1000e-004 | 0.0000 | 0.1118 | 0.1118 | 3.0000e-004 | 0.0000 | 0.1182 |
| Total | 21.5102 | 5.4000e-004 | 0.0581 | 0.0000 | | 2.1000e-004 | 2.1000e-004 | | 2.1000e-004 | 2.1000e-004 | 0.0000 | 0.1118 | 0.1118 | 3.0000e-004 | 0.0000 | 0.1182 |

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 | 5.2216 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 16.2832 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 5.5000e-003 | 5.4000e-004 | 0.0581 | 0.0000 | | 2.1000e-004 | 2.1000e-004 | | 2.1000e-004 | 2.1000e-004 | 0.0000 | 0.1118 | 0.1118 | 3.0000e-004 | 0.0000 | 0.1182 |
| Total | 21.5102 | 5.4000e-004 | 0.0581 | 0.0000 | | 2.1000e-004 | 2.1000e-004 | | 2.1000e-004 | 2.1000e-004 | 0.0000 | 0.1118 | 0.1118 | 3.0000e-004 | 0.0000 | 0.1182 |

7.0 Water Detail

7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|-------------|-----------|--------|--------|--------|
| Category | MT/yr | | | |
| Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

7.2 Water by Land Use

Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|--------------------|---------------|---------------|---------------|---------------|
| Land Use | Mgal | MT/yr | | | |
| Other Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|--------------------|---------------|---------------|---------------|---------------|
| Land Use | Mgal | MT/yr | | | |
| Other Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|----------------|---------------|---------------|---------------|---------------|
| Land Use | tons | MT/yr | | | |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

8.2 Waste by Land Use

Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|----------------|---------------|---------------|---------------|---------------|
| Land Use | tons | MT/yr | | | |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

9.0 Operational Offroad

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

10.0 Vegetation

Alternative 2: Roads, Sidewalks, and Stations

ESFV Alt 2 Roadway, Sidewalks, and Stations

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|----------------------------|----------|----------|-------------|--------------------|------------|
| Other Asphalt Surfaces | 3,600.00 | 1000sqft | 82.64 | 3,600,000.00 | 0 |
| Other Non-Asphalt Surfaces | 310.00 | 1000sqft | 7.12 | 310,000.00 | 0 |

1.2 Other Project Characteristics

| | | | | | |
|---------------------------------|---|---------------------------------|-------|----------------------------------|-------|
| Urbanization | Urban | Wind Speed (m/s) | 2.2 | Precipitation Freq (Days) | 33 |
| Climate Zone | 12 | Operational Year | | 2020 | |
| Utility Company | Los Angeles Department of Water & Power | | | | |
| CO2 Intensity (lb/MW hr) | 1227.89 | CH4 Intensity (lb/MW hr) | 0.029 | N2O Intensity (lb/MW hr) | 0.006 |

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Median-running BRT with construction starting in June 2017 for an 24-month duration

Land Use - 3.6 million square feet of road to be repaved

Sidewalks/Stations: Removal of curbs and gutters, addition of curbs and gutters, additions of sidewalks, ramps, and stations ~ 310,000 sf

Construction Phase - 24-month construction starting in June 2017, construction to occur 6 days/week ~ 625 days of construction

Approximately 2/3 of construction apportioned to site preparation and the remaining 1/3 apportioned to paving/stripping

Grading - Material Imported: 118,944 cy paving/PCC excavation + 8,815 cy SW/curbs + 3,006 plaforms/canopy = 130,765 cy

Material Exported: 59,932 cy for paving/PCC + 1,429 cy platform/canopy + 80,359 cy for SW/curb/Misc removal = 141,720 cy

Architectural Coating - Striping for roadway ~ 2 square feet of striping for every linear foot (9.2 miles) = 97,152 sf

Construction Off-road Equipment Mitigation - Water exposed areas three times daily

Clean paved roads

Tier 4 Final equipment

| Table Name | Column Name | Default Value | New Value |
|-------------------------|---|---------------|--------------|
| tblArchitecturalCoating | ConstArea_Nonresidential_Exterior | 1,955,000.00 | 97,152.00 |
| tblArchitecturalCoating | ConstArea_Nonresidential_Interior | 5,865,000.00 | 0.00 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialExteriorValue | 250 | 0 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialInteriorValue | 250 | 0 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorValue | 100 | 0 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorValue | 50 | 0 |
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 50 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstructionPhase | NumDays | 110.00 | 35.00 |
| tblConstructionPhase | NumDays | 110.00 | 180.00 |
| tblConstructionPhase | NumDays | 60.00 | 410.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblGrading | AcresOfGrading | 0.00 | 90.00 |

| | | | |
|---------------------------|------------------|------|------------|
| tblGrading | MaterialExported | 0.00 | 141,720.00 |
| tblGrading | MaterialImported | 0.00 | 130,765.00 |
| tblProjectCharacteristics | OperationalYear | 2014 | 2020 |

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 | | | | | |
| 2017 | 0.5804 | 6.8068 | 5.3428 | 9.4800e-003 | 4.0367 | 0.2810 | 4.3178 | 2.1137 | 0.2585 | 2.3722 | 0.0000 | 859.3478 | 859.3478 | 0.1065 | 0.0000 | 861.5847 |
| 2018 | 0.7771 | 8.3050 | 6.8768 | 0.0128 | 4.0558 | 0.3449 | 4.4007 | 2.1195 | 0.3173 | 2.4368 | 0.0000 | 1,142.264 4 | 1,142.264 4 | 0.1597 | 0.0000 | 1,145.618 4 |
| 2019 | 0.7118 | 0.7650 | 1.0287 | 1.9900e-003 | 0.0706 | 0.0409 | 0.1115 | 0.0188 | 0.0378 | 0.0566 | 0.0000 | 160.0485 | 160.0485 | 0.0333 | 0.0000 | 160.7481 |
| Total | 2.0693 | 15.8768 | 13.2483 | 0.0243 | 8.1632 | 0.6668 | 8.8300 | 4.2519 | 0.6136 | 4.8656 | 0.0000 | 2,161.660 7 | 2,161.660 7 | 0.2996 | 0.0000 | 2,167.951 2 |

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 | | | | | |
| 2017 | 0.1812 | 2.2600 | 3.6815 | 9.4800e-003 | 1.6212 | 0.0348 | 1.6560 | 0.8384 | 0.0325 | 0.8708 | 0.0000 | 859.3474 | 859.3474 | 0.1065 | 0.0000 | 861.5843 |
| 2018 | 0.2865 | 2.6755 | 5.2797 | 0.0128 | 1.6353 | 0.0448 | 1.6801 | 0.8430 | 0.0419 | 0.8849 | 0.0000 | 1,142.263 8 | 1,142.263 8 | 0.1597 | 0.0000 | 1,145.617 8 |
| 2019 | 0.6536 | 0.0891 | 1.1490 | 1.9900e-003 | 0.0400 | 2.4100e-003 | 0.0424 | 0.0113 | 2.3600e-003 | 0.0136 | 0.0000 | 160.0484 | 160.0484 | 0.0333 | 0.0000 | 160.7480 |
| Total | 1.1212 | 5.0246 | 10.1102 | 0.0243 | 3.2965 | 0.0820 | 3.3786 | 1.6926 | 0.0768 | 1.7693 | 0.0000 | 2,161.659 6 | 2,161.659 6 | 0.2996 | 0.0000 | 2,167.950 1 |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------------|-------|-------|-------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| Percent Reduction | 45.82 | 68.35 | 23.69 | 0.00 | 59.62 | 87.70 | 61.74 | 60.19 | 87.49 | 63.64 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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 | 18.6642 | 4.6000e-004 | 0.0502 | 0.0000 | | 1.8000e-004 | 1.8000e-004 | | 1.8000e-004 | 1.8000e-004 | 0.0000 | 0.0970 | 0.0970 | 2.6000e-004 | 0.0000 | 0.1025 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 18.6642 | 4.6000e-004 | 0.0502 | 0.0000 | 0.0000 | 1.8000e-004 | 1.8000e-004 | 0.0000 | 1.8000e-004 | 1.8000e-004 | 0.0000 | 0.0970 | 0.0970 | 2.6000e-004 | 0.0000 | 0.1025 |

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 | 18.6642 | 4.6000e-004 | 0.0502 | 0.0000 | | 1.8000e-004 | 1.8000e-004 | | 1.8000e-004 | 1.8000e-004 | 0.0000 | 0.0970 | 0.0970 | 2.6000e-004 | 0.0000 | 0.1025 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 18.6642 | 4.6000e-004 | 0.0502 | 0.0000 | 0.0000 | 1.8000e-004 | 1.8000e-004 | 0.0000 | 1.8000e-004 | 1.8000e-004 | 0.0000 | 0.0970 | 0.0970 | 2.6000e-004 | 0.0000 | 0.1025 |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | 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 |

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 | 6/1/2017 | 9/21/2018 | 6 | 410 | |
| 2 | Paving | Paving | 9/22/2018 | 4/19/2019 | 6 | 180 | |
| 3 | Architectural Coating | Architectural Coating | 4/20/2019 | 5/30/2019 | 6 | 35 | Striping |

Acres of Grading (Site Preparation Phase): 90

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 97,152 (Architectural Coating – sqft)

OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|-----------------------|---------------------------|--------|-------------|-------------|-------------|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |
| Paving | Pavers | 2 | 8.00 | 125 | 0.42 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Paving | Paving Equipment | 2 | 8.00 | 130 | 0.36 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 255 | 0.40 |

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 | 34,061.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 328.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2017**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 | | | | | 3.7667 | 0.0000 | 3.7667 | 2.0433 | 0.0000 | 2.0433 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.4427 | 4.7354 | 3.6048 | 3.5800e-003 | | 0.2520 | 0.2520 | | 0.2319 | 0.2319 | 0.0000 | 332.2858 | 332.2858 | 0.1018 | 0.0000 | 334.4238 |
| Total | 0.4427 | 4.7354 | 3.6048 | 3.5800e-003 | 3.7667 | 0.2520 | 4.0187 | 2.0433 | 0.2319 | 2.2751 | 0.0000 | 332.2858 | 332.2858 | 0.1018 | 0.0000 | 334.4238 |

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 | 0.1312 | 2.0619 | 1.6390 | 5.6700e-003 | 0.2520 | 0.0289 | 0.2808 | 0.0656 | 0.0265 | 0.0921 | 0.0000 | 510.1110 | 510.1110 | 3.7800e-003 | 0.0000 | 510.1905 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 6.4400e-003 | 9.5100e-003 | 0.0990 | 2.3000e-004 | 0.0181 | 1.7000e-004 | 0.0182 | 4.7900e-003 | 1.5000e-004 | 4.9500e-003 | 0.0000 | 16.9511 | 16.9511 | 9.2000e-004 | 0.0000 | 16.9705 |
| Total | 0.1377 | 2.0714 | 1.7379 | 5.9000e-003 | 0.2700 | 0.0290 | 0.2990 | 0.0704 | 0.0267 | 0.0971 | 0.0000 | 527.0621 | 527.0621 | 4.7000e-003 | 0.0000 | 527.1609 |

3.2 Site Preparation - 2017

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 | | | | | 1.4690 | 0.0000 | 1.4690 | 0.7969 | 0.0000 | 0.7969 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0435 | 0.1886 | 1.9436 | 3.5800e-003 | | 5.8000e-003 | 5.8000e-003 | | 5.8000e-003 | 5.8000e-003 | 0.0000 | 332.2854 | 332.2854 | 0.1018 | 0.0000 | 334.4234 |
| Total | 0.0435 | 0.1886 | 1.9436 | 3.5800e-003 | 1.4690 | 5.8000e-003 | 1.4748 | 0.7969 | 5.8000e-003 | 0.8027 | 0.0000 | 332.2854 | 332.2854 | 0.1018 | 0.0000 | 334.4234 |

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 | 0.1312 | 2.0619 | 1.6390 | 5.6700e-003 | 0.1419 | 0.0289 | 0.1708 | 0.0386 | 0.0265 | 0.0651 | 0.0000 | 510.1110 | 510.1110 | 3.7800e-003 | 0.0000 | 510.1905 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 6.4400e-003 | 9.5100e-003 | 0.0990 | 2.3000e-004 | 0.0102 | 1.7000e-004 | 0.0104 | 2.8700e-003 | 1.5000e-004 | 3.0300e-003 | 0.0000 | 16.9511 | 16.9511 | 9.2000e-004 | 0.0000 | 16.9705 |
| Total | 0.1377 | 2.0714 | 1.7379 | 5.9000e-003 | 0.1522 | 0.0290 | 0.1812 | 0.0415 | 0.0267 | 0.0682 | 0.0000 | 527.0621 | 527.0621 | 4.7000e-003 | 0.0000 | 527.1609 |

3.2 Site Preparation - 2018

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 | | | | | 3.7667 | 0.0000 | 3.7667 | 2.0433 | 0.0000 | 2.0433 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.4872 | 5.1766 | 4.1126 | 4.4400e-003 | | 0.2685 | 0.2685 | | 0.2470 | 0.2470 | 0.0000 | 405.6606 | 405.6606 | 0.1263 | 0.0000 | 408.3126 |
| Total | 0.4872 | 5.1766 | 4.1126 | 4.4400e-003 | 3.7667 | 0.2685 | 4.0352 | 2.0433 | 0.2470 | 2.2903 | 0.0000 | 405.6606 | 405.6606 | 0.1263 | 0.0000 | 408.3126 |

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 | 0.1595 | 2.3763 | 1.9947 | 7.0300e-003 | 0.2597 | 0.0358 | 0.2954 | 0.0684 | 0.0329 | 0.1013 | 0.0000 | 622.3670 | 622.3670 | 4.7600e-003 | 0.0000 | 622.4669 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 7.1700e-003 | 0.0107 | 0.1112 | 2.8000e-004 | 0.0224 | 2.0000e-004 | 0.0226 | 5.9500e-003 | 1.9000e-004 | 6.1300e-003 | 0.0000 | 20.2561 | 20.2561 | 1.0600e-003 | 0.0000 | 20.2785 |
| Total | 0.1667 | 2.3870 | 2.1058 | 7.3100e-003 | 0.2821 | 0.0360 | 0.3180 | 0.0744 | 0.0331 | 0.1074 | 0.0000 | 642.6232 | 642.6232 | 5.8200e-003 | 0.0000 | 642.7454 |

3.2 Site Preparation - 2018**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 | | | | | 1.4690 | 0.0000 | 1.4690 | 0.7969 | 0.0000 | 0.7969 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0540 | 0.2340 | 2.4109 | 4.4400e-003 | | 7.2000e-003 | 7.2000e-003 | | 7.2000e-003 | 7.2000e-003 | 0.0000 | 405.6601 | 405.6601 | 0.1263 | 0.0000 | 408.3121 |
| Total | 0.0540 | 0.2340 | 2.4109 | 4.4400e-003 | 1.4690 | 7.2000e-003 | 1.4762 | 0.7969 | 7.2000e-003 | 0.8041 | 0.0000 | 405.6601 | 405.6601 | 0.1263 | 0.0000 | 408.3121 |

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 | 0.1595 | 2.3763 | 1.9947 | 7.0300e-003 | 0.1496 | 0.0358 | 0.1854 | 0.0414 | 0.0329 | 0.0743 | 0.0000 | 622.3670 | 622.3670 | 4.7600e-003 | 0.0000 | 622.4669 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 7.1700e-003 | 0.0107 | 0.1112 | 2.8000e-004 | 0.0127 | 2.0000e-004 | 0.0129 | 3.5600e-003 | 1.9000e-004 | 3.7500e-003 | 0.0000 | 20.2561 | 20.2561 | 1.0600e-003 | 0.0000 | 20.2785 |
| Total | 0.1667 | 2.3870 | 2.1058 | 7.3100e-003 | 0.1623 | 0.0360 | 0.1983 | 0.0450 | 0.0331 | 0.0780 | 0.0000 | 642.6232 | 642.6232 | 5.8200e-003 | 0.0000 | 642.7454 |

3.3 Paving - 2018

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 | 0.0693 | 0.7380 | 0.6233 | 9.6000e-004 | | 0.0404 | 0.0404 | | 0.0371 | 0.0371 | 0.0000 | 87.5856 | 87.5856 | 0.0273 | 0.0000 | 88.1582 |
| Paving | 0.0517 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.1210 | 0.7380 | 0.6233 | 9.6000e-004 | | 0.0404 | 0.0404 | | 0.0371 | 0.0371 | 0.0000 | 87.5856 | 87.5856 | 0.0273 | 0.0000 | 88.1582 |

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 | 2.2600e-003 | 3.3800e-003 | 0.0351 | 9.0000e-005 | 7.0700e-003 | 6.0000e-005 | 7.1300e-003 | 1.8800e-003 | 6.0000e-005 | 1.9400e-003 | 0.0000 | 6.3951 | 6.3951 | 3.4000e-004 | 0.0000 | 6.4022 |
| Total | 2.2600e-003 | 3.3800e-003 | 0.0351 | 9.0000e-005 | 7.0700e-003 | 6.0000e-005 | 7.1300e-003 | 1.8800e-003 | 6.0000e-005 | 1.9400e-003 | 0.0000 | 6.3951 | 6.3951 | 3.4000e-004 | 0.0000 | 6.4022 |

3.3 Paving - 2018

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 | 0.0118 | 0.0512 | 0.7279 | 9.6000e-004 | | 1.5700e-003 | 1.5700e-003 | | 1.5700e-003 | 1.5700e-003 | 0.0000 | 87.5855 | 87.5855 | 0.0273 | 0.0000 | 88.1581 |
| Paving | 0.0517 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.0635 | 0.0512 | 0.7279 | 9.6000e-004 | | 1.5700e-003 | 1.5700e-003 | | 1.5700e-003 | 1.5700e-003 | 0.0000 | 87.5855 | 87.5855 | 0.0273 | 0.0000 | 88.1581 |

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 | 2.2600e-003 | 3.3800e-003 | 0.0351 | 9.0000e-005 | 4.0000e-003 | 6.0000e-005 | 4.0700e-003 | 1.1300e-003 | 6.0000e-005 | 1.1800e-003 | 0.0000 | 6.3951 | 6.3951 | 3.4000e-004 | 0.0000 | 6.4022 |
| Total | 2.2600e-003 | 3.3800e-003 | 0.0351 | 9.0000e-005 | 4.0000e-003 | 6.0000e-005 | 4.0700e-003 | 1.1300e-003 | 6.0000e-005 | 1.1800e-003 | 0.0000 | 6.3951 | 6.3951 | 3.4000e-004 | 0.0000 | 6.4022 |

3.3 Paving - 2019**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 | 0.0670 | 0.7020 | 0.6752 | 1.0500e-003 | | 0.0380 | 0.0380 | | 0.0350 | 0.0350 | 0.0000 | 94.1855 | 94.1855 | 0.0298 | 0.0000 | 94.8113 |
| Paving | 0.0565 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.1235 | 0.7020 | 0.6752 | 1.0500e-003 | | 0.0380 | 0.0380 | | 0.0350 | 0.0350 | 0.0000 | 94.1855 | 94.1855 | 0.0298 | 0.0000 | 94.8113 |

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 | 2.2700e-003 | 3.3900e-003 | 0.0352 | 1.0000e-004 | 7.7300e-003 | 7.0000e-005 | 7.7900e-003 | 2.0500e-003 | 6.0000e-005 | 2.1100e-003 | 0.0000 | 6.7158 | 6.7158 | 3.4000e-004 | 0.0000 | 6.7230 |
| Total | 2.2700e-003 | 3.3900e-003 | 0.0352 | 1.0000e-004 | 7.7300e-003 | 7.0000e-005 | 7.7900e-003 | 2.0500e-003 | 6.0000e-005 | 2.1100e-003 | 0.0000 | 6.7158 | 6.7158 | 3.4000e-004 | 0.0000 | 6.7230 |

3.3 Paving - 2019

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 | 0.0129 | 0.0559 | 0.7956 | 1.0500e-003 | | 1.7200e-003 | 1.7200e-003 | | 1.7200e-003 | 1.7200e-003 | 0.0000 | 94.1854 | 94.1854 | 0.0298 | 0.0000 | 94.8112 |
| Paving | 0.0565 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.0694 | 0.0559 | 0.7956 | 1.0500e-003 | | 1.7200e-003 | 1.7200e-003 | | 1.7200e-003 | 1.7200e-003 | 0.0000 | 94.1854 | 94.1854 | 0.0298 | 0.0000 | 94.8112 |

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 | 2.2700e-003 | 3.3900e-003 | 0.0352 | 1.0000e-004 | 4.3800e-003 | 7.0000e-005 | 4.4400e-003 | 1.2300e-003 | 6.0000e-005 | 1.2900e-003 | 0.0000 | 6.7158 | 6.7158 | 3.4000e-004 | 0.0000 | 6.7230 |
| Total | 2.2700e-003 | 3.3900e-003 | 0.0352 | 1.0000e-004 | 4.3800e-003 | 7.0000e-005 | 4.4400e-003 | 1.2300e-003 | 6.0000e-005 | 1.2900e-003 | 0.0000 | 6.7158 | 6.7158 | 3.4000e-004 | 0.0000 | 6.7230 |

3.4 Architectural Coating - 2019

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 | 0.5629 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 4.6600e-003 | 0.0321 | 0.0322 | 5.0000e-005 | | 2.2500e-003 | 2.2500e-003 | | 2.2500e-003 | 2.2500e-003 | 0.0000 | 4.4682 | 4.4682 | 3.8000e-004 | 0.0000 | 4.4761 |
| Total | 0.5675 | 0.0321 | 0.0322 | 5.0000e-005 | | 2.2500e-003 | 2.2500e-003 | | 2.2500e-003 | 2.2500e-003 | 0.0000 | 4.4682 | 4.4682 | 3.8000e-004 | 0.0000 | 4.4761 |

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 | 0.0185 | 0.0276 | 0.2862 | 8.0000e-004 | 0.0629 | 5.5000e-004 | 0.0635 | 0.0167 | 5.1000e-004 | 0.0172 | 0.0000 | 54.6790 | 54.6790 | 2.8000e-003 | 0.0000 | 54.7377 |
| Total | 0.0185 | 0.0276 | 0.2862 | 8.0000e-004 | 0.0629 | 5.5000e-004 | 0.0635 | 0.0167 | 5.1000e-004 | 0.0172 | 0.0000 | 54.6790 | 54.6790 | 2.8000e-003 | 0.0000 | 54.7377 |

3.4 Architectural Coating - 2019

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 | 0.5629 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.2000e-004 | 2.2500e-003 | 0.0321 | 5.0000e-005 | | 7.0000e-005 | 7.0000e-005 | | 7.0000e-005 | 7.0000e-005 | 0.0000 | 4.4682 | 4.4682 | 3.8000e-004 | 0.0000 | 4.4761 |
| Total | 0.5634 | 2.2500e-003 | 0.0321 | 5.0000e-005 | | 7.0000e-005 | 7.0000e-005 | | 7.0000e-005 | 7.0000e-005 | 0.0000 | 4.4682 | 4.4682 | 3.8000e-004 | 0.0000 | 4.4761 |

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 | 0.0185 | 0.0276 | 0.2862 | 8.0000e-004 | 0.0356 | 5.5000e-004 | 0.0362 | 0.0100 | 5.1000e-004 | 0.0105 | 0.0000 | 54.6790 | 54.6790 | 2.8000e-003 | 0.0000 | 54.7377 |
| Total | 0.0185 | 0.0276 | 0.2862 | 8.0000e-004 | 0.0356 | 5.5000e-004 | 0.0362 | 0.0100 | 5.1000e-004 | 0.0105 | 0.0000 | 54.6790 | 54.6790 | 2.8000e-003 | 0.0000 | 54.7377 |

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

4.2 Trip Summary Information

| Land Use | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|----------------------------|-------------------------|----------|--------|-------------|------------|
| | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Other Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Total | 0.00 | 0.00 | 0.00 | | |

4.3 Trip Type Information

| Land Use | Miles | | | Trip % | | | Trip Purpose % | | |
|----------------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
| | 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 | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Other Non-Asphalt Surfaces | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

| LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 0.530094 | 0.057664 | 0.178835 | 0.124843 | 0.039181 | 0.006319 | 0.017052 | 0.034445 | 0.002509 | 0.003148 | 0.003693 | 0.000531 | 0.001685 |

5.3 Energy by Land Use - Electricity

Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|-----------------|---------------|---------------|---------------|---------------|
| Land Use | kWh/yr | MT/yr | | | |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|-----------------|---------------|---------------|---------------|---------------|
| Land Use | kWh/yr | MT/yr | | | |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

6.0 Area Detail

6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 18.6642 | 4.6000e-004 | 0.0502 | 0.0000 | | 1.8000e-004 | 1.8000e-004 | | 1.8000e-004 | 1.8000e-004 | 0.0000 | 0.0970 | 0.0970 | 2.6000e-004 | 0.0000 | 0.1025 |
| Unmitigated | 18.6642 | 4.6000e-004 | 0.0502 | 0.0000 | | 1.8000e-004 | 1.8000e-004 | | 1.8000e-004 | 1.8000e-004 | 0.0000 | 0.0970 | 0.0970 | 2.6000e-004 | 0.0000 | 0.1025 |

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 | 4.5307 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 14.1288 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 4.7200e-003 | 4.6000e-004 | 0.0502 | 0.0000 | | 1.8000e-004 | 1.8000e-004 | | 1.8000e-004 | 1.8000e-004 | 0.0000 | 0.0970 | 0.0970 | 2.6000e-004 | 0.0000 | 0.1025 |
| Total | 18.6642 | 4.6000e-004 | 0.0502 | 0.0000 | | 1.8000e-004 | 1.8000e-004 | | 1.8000e-004 | 1.8000e-004 | 0.0000 | 0.0970 | 0.0970 | 2.6000e-004 | 0.0000 | 0.1025 |

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 | 4.5307 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 14.1288 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 4.7200e-003 | 4.6000e-004 | 0.0502 | 0.0000 | | 1.8000e-004 | 1.8000e-004 | | 1.8000e-004 | 1.8000e-004 | 0.0000 | 0.0970 | 0.0970 | 2.6000e-004 | 0.0000 | 0.1025 |
| Total | 18.6642 | 4.6000e-004 | 0.0502 | 0.0000 | | 1.8000e-004 | 1.8000e-004 | | 1.8000e-004 | 1.8000e-004 | 0.0000 | 0.0970 | 0.0970 | 2.6000e-004 | 0.0000 | 0.1025 |

7.0 Water Detail

7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|-------------|-----------|--------|--------|--------|
| Category | MT/yr | | | |
| Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

7.2 Water by Land Use

Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|--------------------|---------------|---------------|---------------|---------------|
| Land Use | Mgal | MT/yr | | | |
| Other Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|--------------------|---------------|---------------|---------------|---------------|
| Land Use | Mgal | MT/yr | | | |
| Other Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|----------------|---------------|---------------|---------------|---------------|
| Land Use | tons | MT/yr | | | |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

8.2 Waste by Land Use

Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|----------------|---------------|---------------|---------------|---------------|
| Land Use | tons | MT/yr | | | |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

9.0 Operational Offroad

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

10.0 Vegetation

Alternative 3: Roads, Sidewalks, and Stations

ESFV Alt 3 Roadway/Tracks, Sidewalks, and Stations

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|----------------------------|----------|----------|-------------|--------------------|------------|
| Other Asphalt Surfaces | 3,240.00 | 1000sqft | 74.38 | 3,240,000.00 | 0 |
| Other Non-Asphalt Surfaces | 695.47 | 1000sqft | 15.97 | 695,470.00 | 0 |

1.2 Other Project Characteristics

| | | | | | |
|---------------------------------|---|---------------------------------|-------|----------------------------------|-------|
| Urbanization | Urban | Wind Speed (m/s) | 2.2 | Precipitation Freq (Days) | 33 |
| Climate Zone | 12 | | | Operational Year | 2020 |
| Utility Company | Los Angeles Department of Water & Power | | | | |
| CO2 Intensity (lb/MW hr) | 1227.89 | CH4 Intensity (lb/MW hr) | 0.029 | N2O Intensity (lb/MW hr) | 0.006 |

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Median-running LRT/Tram with construction starting in June 2017 for an 24-month duration

Land Use - 3.24 million square feet of road to be repaved

Sidewalks/Stations: Removal of curbs and gutters, addition of curbs and gutters, additions of sidewalks, ramps, and stations ~ 695,470 sf

Construction Phase - 24-month construction starting in June 2017, construction to occur 6 days/week ~ 625 days of construction

Approximately 2/3 of construction apportioned to site preparation and the remaining 1/3 apportioned to paving/stripping

Grading - Material Imported: 53,250 cy paving + 22,193 cy SW/curbs + 15,335 plaforms + 168,083 cy track work = 258,861 cy

Material Exported: 40,000 cy for paving + 11,344 cy platform + 22,206 cy for SW/curb/Misc removal + 168,083 cy track work = 241,633 cy

Architectural Coating - Striping for roadway ~ 2 square feet of striping for every linear foot (9.2 miles) = 97,152 sf

Construction Off-road Equipment Mitigation - Water exposed areas three times daily

Clean paved roads

Tier 4 Final equipment

| Table Name | Column Name | Default Value | New Value |
|-------------------------|---|---------------|--------------|
| tblArchitecturalCoating | ConstArea_Nonresidential_Exterior | 1,967,735.00 | 97,152.00 |
| tblArchitecturalCoating | ConstArea_Nonresidential_Interior | 5,903,205.00 | 0.00 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialExteriorValue | 250 | 0 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialInteriorValue | 250 | 0 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorValue | 100 | 0 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorValue | 50 | 0 |
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 50 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstructionPhase | NumDays | 110.00 | 35.00 |
| tblConstructionPhase | NumDays | 110.00 | 180.00 |
| tblConstructionPhase | NumDays | 60.00 | 410.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | PhaseEndDate | 5/30/2019 | 5/22/2019 |

| | | | |
|---------------------------|------------------|-----------|------------|
| tblConstructionPhase | PhaseStartDate | 4/20/2019 | 4/12/2019 |
| tblGrading | AcresOfGrading | 0.00 | 90.00 |
| tblGrading | MaterialExported | 0.00 | 241,633.00 |
| tblGrading | MaterialImported | 0.00 | 258,861.00 |
| tblProjectCharacteristics | OperationalYear | 2014 | 2020 |

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 | | | | | |
| 2017 | 0.6902 | 8.5321 | 6.7142 | 0.0142 | 4.2605 | 0.3052 | 4.5656 | 2.1705 | 0.2808 | 2.4513 | 0.0000 | 1,286.190 1 | 1,286.190 1 | 0.1097 | 0.0000 | 1,288.493 5 |
| 2018 | 0.9054 | 10.2934 | 8.5459 | 0.0187 | 4.2860 | 0.3748 | 4.6608 | 2.1787 | 0.3448 | 2.5235 | 0.0000 | 1,663.038 4 | 1,663.038 4 | 0.1637 | 0.0000 | 1,666.476 0 |
| 2019 | 0.7063 | 0.7653 | 1.0313 | 2.0000e-003 | 0.0712 | 0.0409 | 0.1121 | 0.0189 | 0.0378 | 0.0567 | 0.0000 | 160.5486 | 160.5486 | 0.0333 | 0.0000 | 161.2487 |
| Total | 2.3019 | 19.5908 | 16.2914 | 0.0349 | 8.6177 | 0.7209 | 9.3386 | 4.3681 | 0.6634 | 5.0315 | 0.0000 | 3,109.777 1 | 3,109.777 1 | 0.3067 | 0.0000 | 3,116.218 2 |

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 | | | | | |
| 2017 | 0.2910 | 3.9853 | 5.0530 | 0.0142 | 1.7450 | 0.0590 | 1.8039 | 0.8714 | 0.0547 | 0.9261 | 0.0000 | 1,286.189 7 | 1,286.189 7 | 0.1097 | 0.0000 | 1,288.493 1 |
| 2018 | 0.4148 | 4.6639 | 6.9488 | 0.0187 | 1.7656 | 0.0747 | 1.8403 | 0.8784 | 0.0694 | 0.9478 | 0.0000 | 1,663.037 8 | 1,663.037 8 | 0.1637 | 0.0000 | 1,666.475 4 |
| 2019 | 0.6481 | 0.0894 | 1.1516 | 2.0000e-003 | 0.0403 | 2.4100e-003 | 0.0428 | 0.0113 | 2.3700e-003 | 0.0137 | 0.0000 | 160.5485 | 160.5485 | 0.0333 | 0.0000 | 161.2486 |
| Total | 1.3538 | 8.7385 | 13.1534 | 0.0349 | 3.5509 | 0.1361 | 3.6870 | 1.7611 | 0.1265 | 1.8876 | 0.0000 | 3,109.776 0 | 3,109.776 0 | 0.3067 | 0.0000 | 3,116.217 1 |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------------|-------|-------|-------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| Percent Reduction | 41.19 | 55.39 | 19.26 | 0.00 | 58.80 | 81.12 | 60.52 | 59.68 | 80.93 | 62.48 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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 | 18.7858 | 4.7000e-004 | 0.0506 | 0.0000 | | 1.8000e-004 | 1.8000e-004 | | 1.8000e-004 | 1.8000e-004 | 0.0000 | 0.0977 | 0.0977 | 2.6000e-004 | 0.0000 | 0.1032 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 18.7858 | 4.7000e-004 | 0.0506 | 0.0000 | 0.0000 | 1.8000e-004 | 1.8000e-004 | 0.0000 | 1.8000e-004 | 1.8000e-004 | 0.0000 | 0.0977 | 0.0977 | 2.6000e-004 | 0.0000 | 0.1032 |

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 | 18.7858 | 4.7000e-004 | 0.0506 | 0.0000 | | 1.8000e-004 | 1.8000e-004 | | 1.8000e-004 | 1.8000e-004 | 0.0000 | 0.0977 | 0.0977 | 2.6000e-004 | 0.0000 | 0.1032 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 18.7858 | 4.7000e-004 | 0.0506 | 0.0000 | 0.0000 | 1.8000e-004 | 1.8000e-004 | 0.0000 | 1.8000e-004 | 1.8000e-004 | 0.0000 | 0.0977 | 0.0977 | 2.6000e-004 | 0.0000 | 0.1032 |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | 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 |

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 | 6/1/2017 | 9/21/2018 | 6 | 410 | |
| 2 | Paving | Paving | 9/22/2018 | 4/19/2019 | 6 | 180 | |
| 3 | Architectural Coating | Architectural Coating | 4/12/2019 | 5/22/2019 | 6 | 35 | Striping |

Acres of Grading (Site Preparation Phase): 90

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 97,152 (Architectural Coating – sqft)

OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|-----------------------|---------------------------|--------|-------------|-------------|-------------|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |
| Paving | Pavers | 2 | 8.00 | 125 | 0.42 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Paving | Paving Equipment | 2 | 8.00 | 130 | 0.36 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 255 | 0.40 |

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 | 62,562.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 331.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2017

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 | | | | | 3.7796 | 0.0000 | 3.7796 | 2.0452 | 0.0000 | 2.0452 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.4427 | 4.7354 | 3.6048 | 3.5800e-003 | | 0.2520 | 0.2520 | | 0.2319 | 0.2319 | 0.0000 | 332.2858 | 332.2858 | 0.1018 | 0.0000 | 334.4238 |
| Total | 0.4427 | 4.7354 | 3.6048 | 3.5800e-003 | 3.7796 | 0.2520 | 4.0316 | 2.0452 | 0.2319 | 2.2771 | 0.0000 | 332.2858 | 332.2858 | 0.1018 | 0.0000 | 334.4238 |

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 | 0.2410 | 3.7871 | 3.0104 | 0.0104 | 0.4628 | 0.0530 | 0.5158 | 0.1205 | 0.0488 | 0.1692 | 0.0000 | 936.9532 | 936.9532 | 6.9500e-003 | 0.0000 | 937.0992 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 6.4400e-003 | 9.5100e-003 | 0.0990 | 2.3000e-004 | 0.0181 | 1.7000e-004 | 0.0182 | 4.7900e-003 | 1.5000e-004 | 4.9500e-003 | 0.0000 | 16.9511 | 16.9511 | 9.2000e-004 | 0.0000 | 16.9705 |
| Total | 0.2475 | 3.7967 | 3.1094 | 0.0106 | 0.4809 | 0.0532 | 0.5340 | 0.1253 | 0.0489 | 0.1742 | 0.0000 | 953.9043 | 953.9043 | 7.8700e-003 | 0.0000 | 954.0697 |

3.2 Site Preparation - 2017

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 | | | | | 1.4741 | 0.0000 | 1.4741 | 0.7976 | 0.0000 | 0.7976 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0435 | 0.1886 | 1.9436 | 3.5800e-003 | | 5.8000e-003 | 5.8000e-003 | | 5.8000e-003 | 5.8000e-003 | 0.0000 | 332.2854 | 332.2854 | 0.1018 | 0.0000 | 334.4234 |
| Total | 0.0435 | 0.1886 | 1.9436 | 3.5800e-003 | 1.4741 | 5.8000e-003 | 1.4799 | 0.7976 | 5.8000e-003 | 0.8034 | 0.0000 | 332.2854 | 332.2854 | 0.1018 | 0.0000 | 334.4234 |

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 | 0.2410 | 3.7871 | 3.0104 | 0.0104 | 0.2607 | 0.0530 | 0.3137 | 0.0709 | 0.0488 | 0.1196 | 0.0000 | 936.9532 | 936.9532 | 6.9500e-003 | 0.0000 | 937.0992 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 6.4400e-003 | 9.5100e-003 | 0.0990 | 2.3000e-004 | 0.0102 | 1.7000e-004 | 0.0104 | 2.8700e-003 | 1.5000e-004 | 3.0300e-003 | 0.0000 | 16.9511 | 16.9511 | 9.2000e-004 | 0.0000 | 16.9705 |
| Total | 0.2475 | 3.7967 | 3.1094 | 0.0106 | 0.2709 | 0.0532 | 0.3241 | 0.0738 | 0.0489 | 0.1227 | 0.0000 | 953.9043 | 953.9043 | 7.8700e-003 | 0.0000 | 954.0697 |

3.2 Site Preparation - 2018

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 | | | | | 3.7796 | 0.0000 | 3.7796 | 2.0452 | 0.0000 | 2.0452 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.4872 | 5.1766 | 4.1126 | 4.4400e-003 | | 0.2685 | 0.2685 | | 0.2470 | 0.2470 | 0.0000 | 405.6606 | 405.6606 | 0.1263 | 0.0000 | 408.3126 |
| Total | 0.4872 | 5.1766 | 4.1126 | 4.4400e-003 | 3.7796 | 0.2685 | 4.0481 | 2.0452 | 0.2470 | 2.2922 | 0.0000 | 405.6606 | 405.6606 | 0.1263 | 0.0000 | 408.3126 |

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 | 0.2930 | 4.3647 | 3.6637 | 0.0129 | 0.4770 | 0.0657 | 0.5426 | 0.1256 | 0.0604 | 0.1861 | 0.0000 | 1,143.1410 | 1,143.1410 | 8.7400e-003 | 0.0000 | 1,143.3245 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 7.1700e-003 | 0.0107 | 0.1112 | 2.8000e-004 | 0.0224 | 2.0000e-004 | 0.0226 | 5.9500e-003 | 1.9000e-004 | 6.1300e-003 | 0.0000 | 20.2561 | 20.2561 | 1.0600e-003 | 0.0000 | 20.2785 |
| Total | 0.3001 | 4.3754 | 3.7749 | 0.0132 | 0.4994 | 0.0659 | 0.5652 | 0.1316 | 0.0606 | 0.1922 | 0.0000 | 1,163.3971 | 1,163.3971 | 9.8000e-003 | 0.0000 | 1,163.6030 |

3.2 Site Preparation - 2018

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 | | | | | 1.4741 | 0.0000 | 1.4741 | 0.7976 | 0.0000 | 0.7976 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0540 | 0.2340 | 2.4109 | 4.4400e-003 | | 7.2000e-003 | 7.2000e-003 | | 7.2000e-003 | 7.2000e-003 | 0.0000 | 405.6601 | 405.6601 | 0.1263 | 0.0000 | 408.3121 |
| Total | 0.0540 | 0.2340 | 2.4109 | 4.4400e-003 | 1.4741 | 7.2000e-003 | 1.4813 | 0.7976 | 7.2000e-003 | 0.8048 | 0.0000 | 405.6601 | 405.6601 | 0.1263 | 0.0000 | 408.3121 |

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 | 0.2930 | 4.3647 | 3.6637 | 0.0129 | 0.2748 | 0.0657 | 0.3405 | 0.0760 | 0.0604 | 0.1364 | 0.0000 | 1,143.1410 | 1,143.1410 | 8.7400e-003 | 0.0000 | 1,143.3245 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 7.1700e-003 | 0.0107 | 0.1112 | 2.8000e-004 | 0.0127 | 2.0000e-004 | 0.0129 | 3.5600e-003 | 1.9000e-004 | 3.7500e-003 | 0.0000 | 20.2561 | 20.2561 | 1.0600e-003 | 0.0000 | 20.2785 |
| Total | 0.3001 | 4.3754 | 3.7749 | 0.0132 | 0.2875 | 0.0659 | 0.3534 | 0.0796 | 0.0606 | 0.1402 | 0.0000 | 1,163.3971 | 1,163.3971 | 9.8000e-003 | 0.0000 | 1,163.6030 |

3.3 Paving - 2018**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 | 0.0693 | 0.7380 | 0.6233 | 9.6000e-004 | | 0.0404 | 0.0404 | | 0.0371 | 0.0371 | 0.0000 | 87.5856 | 87.5856 | 0.0273 | 0.0000 | 88.1582 |
| Paving | 0.0466 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.1158 | 0.7380 | 0.6233 | 9.6000e-004 | | 0.0404 | 0.0404 | | 0.0371 | 0.0371 | 0.0000 | 87.5856 | 87.5856 | 0.0273 | 0.0000 | 88.1582 |

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 | 2.2600e-003 | 3.3800e-003 | 0.0351 | 9.0000e-005 | 7.0700e-003 | 6.0000e-005 | 7.1300e-003 | 1.8800e-003 | 6.0000e-005 | 1.9400e-003 | 0.0000 | 6.3951 | 6.3951 | 3.4000e-004 | 0.0000 | 6.4022 |
| Total | 2.2600e-003 | 3.3800e-003 | 0.0351 | 9.0000e-005 | 7.0700e-003 | 6.0000e-005 | 7.1300e-003 | 1.8800e-003 | 6.0000e-005 | 1.9400e-003 | 0.0000 | 6.3951 | 6.3951 | 3.4000e-004 | 0.0000 | 6.4022 |

3.3 Paving - 2018

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 | 0.0118 | 0.0512 | 0.7279 | 9.6000e-004 | | 1.5700e-003 | 1.5700e-003 | | 1.5700e-003 | 1.5700e-003 | 0.0000 | 87.5855 | 87.5855 | 0.0273 | 0.0000 | 88.1581 |
| Paving | 0.0466 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.0584 | 0.0512 | 0.7279 | 9.6000e-004 | | 1.5700e-003 | 1.5700e-003 | | 1.5700e-003 | 1.5700e-003 | 0.0000 | 87.5855 | 87.5855 | 0.0273 | 0.0000 | 88.1581 |

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 | 2.2600e-003 | 3.3800e-003 | 0.0351 | 9.0000e-005 | 4.0000e-003 | 6.0000e-005 | 4.0700e-003 | 1.1300e-003 | 6.0000e-005 | 1.1800e-003 | 0.0000 | 6.3951 | 6.3951 | 3.4000e-004 | 0.0000 | 6.4022 |
| Total | 2.2600e-003 | 3.3800e-003 | 0.0351 | 9.0000e-005 | 4.0000e-003 | 6.0000e-005 | 4.0700e-003 | 1.1300e-003 | 6.0000e-005 | 1.1800e-003 | 0.0000 | 6.3951 | 6.3951 | 3.4000e-004 | 0.0000 | 6.4022 |

3.3 Paving - 2019

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 | 0.0670 | 0.7020 | 0.6752 | 1.0500e-003 | | 0.0380 | 0.0380 | | 0.0350 | 0.0350 | 0.0000 | 94.1855 | 94.1855 | 0.0298 | 0.0000 | 94.8113 |
| Paving | 0.0509 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.1179 | 0.7020 | 0.6752 | 1.0500e-003 | | 0.0380 | 0.0380 | | 0.0350 | 0.0350 | 0.0000 | 94.1855 | 94.1855 | 0.0298 | 0.0000 | 94.8113 |

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 | 2.2700e-003 | 3.3900e-003 | 0.0352 | 1.0000e-004 | 7.7300e-003 | 7.0000e-005 | 7.7900e-003 | 2.0500e-003 | 6.0000e-005 | 2.1100e-003 | 0.0000 | 6.7158 | 6.7158 | 3.4000e-004 | 0.0000 | 6.7230 |
| Total | 2.2700e-003 | 3.3900e-003 | 0.0352 | 1.0000e-004 | 7.7300e-003 | 7.0000e-005 | 7.7900e-003 | 2.0500e-003 | 6.0000e-005 | 2.1100e-003 | 0.0000 | 6.7158 | 6.7158 | 3.4000e-004 | 0.0000 | 6.7230 |

3.3 Paving - 2019

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 | 0.0129 | 0.0559 | 0.7956 | 1.0500e-003 | | 1.7200e-003 | 1.7200e-003 | | 1.7200e-003 | 1.7200e-003 | 0.0000 | 94.1854 | 94.1854 | 0.0298 | 0.0000 | 94.8112 |
| Paving | 0.0509 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.0638 | 0.0559 | 0.7956 | 1.0500e-003 | | 1.7200e-003 | 1.7200e-003 | | 1.7200e-003 | 1.7200e-003 | 0.0000 | 94.1854 | 94.1854 | 0.0298 | 0.0000 | 94.8112 |

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 | 2.2700e-003 | 3.3900e-003 | 0.0352 | 1.0000e-004 | 4.3800e-003 | 7.0000e-005 | 4.4400e-003 | 1.2300e-003 | 6.0000e-005 | 1.2900e-003 | 0.0000 | 6.7158 | 6.7158 | 3.4000e-004 | 0.0000 | 6.7230 |
| Total | 2.2700e-003 | 3.3900e-003 | 0.0352 | 1.0000e-004 | 4.3800e-003 | 7.0000e-005 | 4.4400e-003 | 1.2300e-003 | 6.0000e-005 | 1.2900e-003 | 0.0000 | 6.7158 | 6.7158 | 3.4000e-004 | 0.0000 | 6.7230 |

3.4 Architectural Coating - 2019

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 | 0.5629 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 4.6600e-003 | 0.0321 | 0.0322 | 5.0000e-005 | | 2.2500e-003 | 2.2500e-003 | | 2.2500e-003 | 2.2500e-003 | 0.0000 | 4.4682 | 4.4682 | 3.8000e-004 | 0.0000 | 4.4761 |
| Total | 0.5675 | 0.0321 | 0.0322 | 5.0000e-005 | | 2.2500e-003 | 2.2500e-003 | | 2.2500e-003 | 2.2500e-003 | 0.0000 | 4.4682 | 4.4682 | 3.8000e-004 | 0.0000 | 4.4761 |

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 | 0.0278 | 0.2888 | 8.0000e-004 | 0.0635 | 5.5000e-004 | 0.0640 | 0.0169 | 5.1000e-004 | 0.0174 | 0.0000 | 55.1791 | 55.1791 | 2.8200e-003 | 0.0000 | 55.2383 |
| Total | 0.0186 | 0.0278 | 0.2888 | 8.0000e-004 | 0.0635 | 5.5000e-004 | 0.0640 | 0.0169 | 5.1000e-004 | 0.0174 | 0.0000 | 55.1791 | 55.1791 | 2.8200e-003 | 0.0000 | 55.2383 |

3.4 Architectural Coating - 2019

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 | 0.5629 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.2000e-004 | 2.2500e-003 | 0.0321 | 5.0000e-005 | | 7.0000e-005 | 7.0000e-005 | | 7.0000e-005 | 7.0000e-005 | 0.0000 | 4.4682 | 4.4682 | 3.8000e-004 | 0.0000 | 4.4761 |
| Total | 0.5634 | 2.2500e-003 | 0.0321 | 5.0000e-005 | | 7.0000e-005 | 7.0000e-005 | | 7.0000e-005 | 7.0000e-005 | 0.0000 | 4.4682 | 4.4682 | 3.8000e-004 | 0.0000 | 4.4761 |

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 | 0.0278 | 0.2888 | 8.0000e-004 | 0.0360 | 5.5000e-004 | 0.0365 | 0.0101 | 5.1000e-004 | 0.0106 | 0.0000 | 55.1791 | 55.1791 | 2.8200e-003 | 0.0000 | 55.2383 |
| Total | 0.0186 | 0.0278 | 0.2888 | 8.0000e-004 | 0.0360 | 5.5000e-004 | 0.0365 | 0.0101 | 5.1000e-004 | 0.0106 | 0.0000 | 55.1791 | 55.1791 | 2.8200e-003 | 0.0000 | 55.2383 |

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

4.2 Trip Summary Information

| Land Use | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|----------------------------|-------------------------|----------|--------|-------------|------------|
| | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Other Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Total | 0.00 | 0.00 | 0.00 | | |

4.3 Trip Type Information

| Land Use | Miles | | | Trip % | | | Trip Purpose % | | |
|----------------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
| | 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 | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Other Non-Asphalt Surfaces | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

| LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 0.530094 | 0.057664 | 0.178835 | 0.124843 | 0.039181 | 0.006319 | 0.017052 | 0.034445 | 0.002509 | 0.003148 | 0.003693 | 0.000531 | 0.001685 |

5.3 Energy by Land Use - Electricity

Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|-----------------|---------------|---------------|---------------|---------------|
| Land Use | kWh/yr | MT/yr | | | |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|-----------------|---------------|---------------|---------------|---------------|
| Land Use | kWh/yr | MT/yr | | | |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

6.0 Area Detail

6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 18.7858 | 4.7000e-004 | 0.0506 | 0.0000 | | 1.8000e-004 | 1.8000e-004 | | 1.8000e-004 | 1.8000e-004 | 0.0000 | 0.0977 | 0.0977 | 2.6000e-004 | 0.0000 | 0.1032 |
| Unmitigated | 18.7858 | 4.7000e-004 | 0.0506 | 0.0000 | | 1.8000e-004 | 1.8000e-004 | | 1.8000e-004 | 1.8000e-004 | 0.0000 | 0.0977 | 0.0977 | 2.6000e-004 | 0.0000 | 0.1032 |

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 | 4.5602 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 14.2208 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 4.7600e-003 | 4.7000e-004 | 0.0506 | 0.0000 | | 1.8000e-004 | 1.8000e-004 | | 1.8000e-004 | 1.8000e-004 | 0.0000 | 0.0977 | 0.0977 | 2.6000e-004 | 0.0000 | 0.1032 |
| Total | 18.7858 | 4.7000e-004 | 0.0506 | 0.0000 | | 1.8000e-004 | 1.8000e-004 | | 1.8000e-004 | 1.8000e-004 | 0.0000 | 0.0977 | 0.0977 | 2.6000e-004 | 0.0000 | 0.1032 |

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 | 4.5602 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 14.2208 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 4.7600e-003 | 4.7000e-004 | 0.0506 | 0.0000 | | 1.8000e-004 | 1.8000e-004 | | 1.8000e-004 | 1.8000e-004 | 0.0000 | 0.0977 | 0.0977 | 2.6000e-004 | 0.0000 | 0.1032 |
| Total | 18.7858 | 4.7000e-004 | 0.0506 | 0.0000 | | 1.8000e-004 | 1.8000e-004 | | 1.8000e-004 | 1.8000e-004 | 0.0000 | 0.0977 | 0.0977 | 2.6000e-004 | 0.0000 | 0.1032 |

7.0 Water Detail

7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|-------------|-----------|--------|--------|--------|
| Category | MT/yr | | | |
| Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

7.2 Water by Land Use

Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|--------------------|---------------|---------------|---------------|---------------|
| Land Use | Mgal | MT/yr | | | |
| Other Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|--------------------|---------------|---------------|---------------|---------------|
| Land Use | Mgal | MT/yr | | | |
| Other Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|----------------|---------------|---------------|---------------|---------------|
| Land Use | tons | MT/yr | | | |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

8.2 Waste by Land Use

Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|----------------|---------------|---------------|---------------|---------------|
| Land Use | tons | MT/yr | | | |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

9.0 Operational Offroad

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

10.0 Vegetation

Alternative 4: Roadway/Tracks, Sidewalks, and At-Grade Stations

ESFV Alt 4 Roadway/Tracks, Sidewalks, and At-Grade Stations
Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|----------------------------|----------|----------|-------------|--------------------|------------|
| Other Asphalt Surfaces | 2,250.00 | 1000sqft | 51.65 | 2,250,000.00 | 0 |
| Other Non-Asphalt Surfaces | 2,069.00 | 1000sqft | 47.50 | 2,069,000.00 | 0 |

1.2 Other Project Characteristics

| | | | | | |
|--------------------------------|---|--------------------------------|-------|----------------------------------|-------|
| Urbanization | Urban | Wind Speed (m/s) | 2.2 | Precipitation Freq (Days) | 33 |
| Climate Zone | 12 | | | Operational Year | 2021 |
| Utility Company | Los Angeles Department of Water & Power | | | | |
| CO2 Intensity (lb/MWhr) | 1227.89 | CH4 Intensity (lb/MWhr) | 0.029 | N2O Intensity (lb/MWhr) | 0.006 |

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 36-month construction period beginning in June 2017

Land Use - 2.25 million square feet of road to be repaved

Sidewalks/Stations: Removal of curbs and gutters, addition of curbs and gutters, additions of sidewalks, ramps, direct fixation/ballasted track, at-grade stations ~ 2,069,051sf = 47.5 ac

Construction Phase - 36-month construction starting in June 2017, construction to occur 6 days/week ~ 640 days of construction

Approximately 2/3 of construction apportioned to site preparation and the remaining 1/3 apportioned to paving/stripping

Grading - Material Imported: 32,778 cy paving + 11,913 cy SW/curbs/barriers + 15,709 plaforms + 273,588 cy track work = 333,988 cy

Material Exported: 27,778 cy for paving + 7,854 cy platform + 10,320 cy for SW/curb/Misc removal + 237,024 cy track work = 282,975 cy

Architectural Coating - Striping for roadway ~ 2 square feet of striping for every linear foot (9.2 miles) = 97,152 sf

Energy Use -

Construction Off-road Equipment Mitigation - Water exposed areas three times daily

Clean paved roads

Tier 4 Final equipment

| Table Name | Column Name | Default Value | New Value |
|-------------------------|---|---------------|--------------|
| tblArchitecturalCoating | ConstArea_Nonresidential_Exterior | 2,159,500.00 | 97,152.00 |
| tblArchitecturalCoating | ConstArea_Nonresidential_Interior | 6,478,500.00 | 0.00 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialExteriorValue | 250 | 0 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialInteriorValue | 250 | 0 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorValue | 100 | 0 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorValue | 50 | 0 |
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 50 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |

| | | | |
|---------------------------|---------------------|-----------|--------------|
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstructionPhase | NumDays | 110.00 | 40.00 |
| tblConstructionPhase | NumDays | 110.00 | 200.00 |
| tblConstructionPhase | NumDays | 60.00 | 400.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblGrading | AcresOfGrading | 0.00 | 100.00 |
| tblGrading | MaterialExported | 0.00 | 282,975.00 |
| tblGrading | MaterialImported | 0.00 | 333,988.00 |
| tblGrading | MaterialSiltContent | 6.90 | 4.30 |
| tblGrading | MeanVehicleSpeed | 7.10 | 40.00 |
| tblProjectCharacteristics | OperationalYear | 2014 | 2021 |

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 | | | | | |
| 2017 | 0.7537 | 9.5301 | 7.5075 | 0.0170 | 4.0858 | 0.3191 | 4.4050 | 1.7166 | 0.2936 | 2.0102 | 0.0000 | 1,533.0909 | 1,533.0909 | 0.1115 | 0.0000 | 1,535.4328 |
| 2018 | 0.9388 | 11.0583 | 9.1979 | 0.0213 | 4.1109 | 0.3813 | 4.4922 | 1.7246 | 0.3508 | 2.0754 | 0.0000 | 1,892.8090 | 1,892.8090 | 0.1631 | 0.0000 | 1,896.2343 |
| 2019 | 0.7034 | 0.8520 | 1.1846 | 2.3400e-003 | 0.0881 | 0.0454 | 0.1335 | 0.0234 | 0.0420 | 0.0654 | 0.0000 | 185.9004 | 185.9004 | 0.0373 | 0.0000 | 186.6841 |
| Total | 2.3958 | 21.4403 | 17.8900 | 0.0406 | 8.2848 | 0.7459 | 9.0307 | 3.4647 | 0.6864 | 4.1511 | 0.0000 | 3,611.8004 | 3,611.8004 | 0.3120 | 0.0000 | 3,618.3512 |

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 | | | | | |
| 2017 | 0.3545 | 4.9832 | 5.8463 | 0.0170 | 1.6966 | 0.0729 | 1.7696 | 0.7004 | 0.0676 | 0.7679 | 0.0000 | 1,533.0905 | 1,533.0905 | 0.1115 | 0.0000 | 1,535.4324 |
| 2018 | 0.4605 | 5.5667 | 7.6879 | 0.0213 | 1.7168 | 0.0882 | 1.8051 | 0.7072 | 0.0819 | 0.7890 | 0.0000 | 1,892.8084 | 1,892.8084 | 0.1631 | 0.0000 | 1,896.2337 |
| 2019 | 0.6388 | 0.1031 | 1.3177 | 2.3400e-003 | 0.0499 | 2.7500e-003 | 0.0527 | 0.0140 | 2.7000e-003 | 0.0167 | 0.0000 | 185.9003 | 185.9003 | 0.0373 | 0.0000 | 186.6839 |
| Total | 1.4538 | 10.6530 | 14.8519 | 0.0406 | 3.4634 | 0.1639 | 3.6273 | 1.4215 | 0.1521 | 1.5736 | 0.0000 | 3,611.7992 | 3,611.7992 | 0.3120 | 0.0000 | 3,618.3500 |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------------|-------|-------|-------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| Percent Reduction | 39.32 | 50.31 | 16.98 | 0.00 | 58.20 | 78.02 | 59.83 | 58.97 | 77.84 | 62.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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 | 20.6165 | 5.1000e-004 | 0.0553 | 0.0000 | | 2.0000e-004 | 2.0000e-004 | | 2.0000e-004 | 2.0000e-004 | 0.0000 | 0.1072 | 0.1072 | 2.8000e-004 | 0.0000 | 0.1132 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 20.6165 | 5.1000e-004 | 0.0553 | 0.0000 | 0.0000 | 2.0000e-004 | 2.0000e-004 | 0.0000 | 2.0000e-004 | 2.0000e-004 | 0.0000 | 0.1072 | 0.1072 | 2.8000e-004 | 0.0000 | 0.1132 |

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 | 20.6165 | 5.1000e-004 | 0.0553 | 0.0000 | | 2.0000e-004 | 2.0000e-004 | | 2.0000e-004 | 2.0000e-004 | 0.0000 | 0.1072 | 0.1072 | 2.8000e-004 | 0.0000 | 0.1132 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 20.6165 | 5.1000e-004 | 0.0553 | 0.0000 | 0.0000 | 2.0000e-004 | 2.0000e-004 | 0.0000 | 2.0000e-004 | 2.0000e-004 | 0.0000 | 0.1072 | 0.1072 | 2.8000e-004 | 0.0000 | 0.1132 |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | 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 |

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 | 6/1/2017 | 9/10/2018 | 6 | 400 | |
| 2 | Paving | Paving | 9/11/2018 | 5/1/2019 | 6 | 200 | |
| 3 | Architectural Coating | Architectural Coating | 5/2/2019 | 6/17/2019 | 6 | 40 | |

Acres of Grading (Site Preparation Phase): 100

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 97,152 (Architectural Coating – sqft)

OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|-----------------------|---------------------------|--------|-------------|-------------|-------------|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |
| Paving | Pavers | 2 | 8.00 | 125 | 0.42 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Paving | Paving Equipment | 2 | 8.00 | 130 | 0.36 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 255 | 0.40 |

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 | 77,120.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 363.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2017

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 | | | | | 3.4955 | 0.0000 | 3.4955 | 1.5627 | 0.0000 | 1.5627 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.4427 | 4.7354 | 3.6048 | 3.5800e-003 | | 0.2520 | 0.2520 | | 0.2319 | 0.2319 | 0.0000 | 332.2858 | 332.2858 | 0.1018 | 0.0000 | 334.4238 |
| Total | 0.4427 | 4.7354 | 3.6048 | 3.5800e-003 | 3.4955 | 0.2520 | 3.7475 | 1.5627 | 0.2319 | 1.7945 | 0.0000 | 332.2858 | 332.2858 | 0.1018 | 0.0000 | 334.4238 |

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 | 0.3045 | 4.7851 | 3.8037 | 0.0132 | 0.5723 | 0.0670 | 0.6393 | 0.1492 | 0.0616 | 0.2108 | 0.0000 | 1,183.8541 | 1,183.8541 | 8.7800e-003 | 0.0000 | 1,184.0385 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 6.4400e-003 | 9.5100e-003 | 0.0990 | 2.3000e-004 | 0.0181 | 1.7000e-004 | 0.0182 | 4.7900e-003 | 1.5000e-004 | 4.9500e-003 | 0.0000 | 16.9511 | 16.9511 | 9.2000e-004 | 0.0000 | 16.9705 |
| Total | 0.3110 | 4.7946 | 3.9027 | 0.0134 | 0.5904 | 0.0671 | 0.6575 | 0.1540 | 0.0617 | 0.2157 | 0.0000 | 1,200.8051 | 1,200.8051 | 9.7000e-003 | 0.0000 | 1,201.0090 |

3.2 Site Preparation - 2017

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 | | | | | 1.3632 | 0.0000 | 1.3632 | 0.6094 | 0.0000 | 0.6094 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0435 | 0.1886 | 1.9436 | 3.5800e-003 | | 5.8000e-003 | 5.8000e-003 | | 5.8000e-003 | 5.8000e-003 | 0.0000 | 332.2854 | 332.2854 | 0.1018 | 0.0000 | 334.4234 |
| Total | 0.0435 | 0.1886 | 1.9436 | 3.5800e-003 | 1.3632 | 5.8000e-003 | 1.3690 | 0.6094 | 5.8000e-003 | 0.6152 | 0.0000 | 332.2854 | 332.2854 | 0.1018 | 0.0000 | 334.4234 |

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 | 0.3045 | 4.7851 | 3.8037 | 0.0132 | 0.3232 | 0.0670 | 0.3901 | 0.0880 | 0.0616 | 0.1496 | 0.0000 | 1,183.8541 | 1,183.8541 | 8.7800e-003 | 0.0000 | 1,184.0385 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 6.4400e-003 | 9.5100e-003 | 0.0990 | 2.3000e-004 | 0.0102 | 1.7000e-004 | 0.0104 | 2.8700e-003 | 1.5000e-004 | 3.0300e-003 | 0.0000 | 16.9511 | 16.9511 | 9.2000e-004 | 0.0000 | 16.9705 |
| Total | 0.3110 | 4.7946 | 3.9027 | 0.0134 | 0.3334 | 0.0671 | 0.4005 | 0.0909 | 0.0617 | 0.1527 | 0.0000 | 1,200.8051 | 1,200.8051 | 9.7000e-003 | 0.0000 | 1,201.0090 |

3.2 Site Preparation - 2018

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 | | | | | 3.4955 | 0.0000 | 3.4955 | 1.5627 | 0.0000 | 1.5627 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.4657 | 4.9486 | 3.9315 | 4.2400e-003 | | 0.2567 | 0.2567 | | 0.2361 | 0.2361 | 0.0000 | 387.7901 | 387.7901 | 0.1207 | 0.0000 | 390.3253 |
| Total | 0.4657 | 4.9486 | 3.9315 | 4.2400e-003 | 3.4955 | 0.2567 | 3.7521 | 1.5627 | 0.2361 | 1.7988 | 0.0000 | 387.7901 | 387.7901 | 0.1207 | 0.0000 | 390.3253 |

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 | 0.3539 | 5.2719 | 4.4253 | 0.0156 | 0.5861 | 0.0793 | 0.6655 | 0.1542 | 0.0730 | 0.2272 | 0.0000 | 1,380.7465 | 1,380.7465 | 0.0106 | 0.0000 | 1,380.9681 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 6.8500e-003 | 0.0102 | 0.1063 | 2.7000e-004 | 0.0214 | 1.9000e-004 | 0.0216 | 5.6800e-003 | 1.8000e-004 | 5.8600e-003 | 0.0000 | 19.3638 | 19.3638 | 1.0200e-003 | 0.0000 | 19.3852 |
| Total | 0.3607 | 5.2821 | 4.5315 | 0.0159 | 0.6075 | 0.0795 | 0.6871 | 0.1599 | 0.0732 | 0.2331 | 0.0000 | 1,400.1103 | 1,400.1103 | 0.0116 | 0.0000 | 1,400.3533 |

3.2 Site Preparation - 2018

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 | | | | | 1.3632 | 0.0000 | 1.3632 | 0.6094 | 0.0000 | 0.6094 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0516 | 0.2237 | 2.3047 | 4.2400e-003 | | 6.8800e-003 | 6.8800e-003 | | 6.8800e-003 | 6.8800e-003 | 0.0000 | 387.7896 | 387.7896 | 0.1207 | 0.0000 | 390.3248 |
| Total | 0.0516 | 0.2237 | 2.3047 | 4.2400e-003 | 1.3632 | 6.8800e-003 | 1.3701 | 0.6094 | 6.8800e-003 | 0.6163 | 0.0000 | 387.7896 | 387.7896 | 0.1207 | 0.0000 | 390.3248 |

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 | 0.3539 | 5.2719 | 4.4253 | 0.0156 | 0.3370 | 0.0793 | 0.4163 | 0.0931 | 0.0730 | 0.1660 | 0.0000 | 1,380.7465 | 1,380.7465 | 0.0106 | 0.0000 | 1,380.9681 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 6.8500e-003 | 0.0102 | 0.1063 | 2.7000e-004 | 0.0121 | 1.9000e-004 | 0.0123 | 3.4100e-003 | 1.8000e-004 | 3.5800e-003 | 0.0000 | 19.3638 | 19.3638 | 1.0200e-003 | 0.0000 | 19.3852 |
| Total | 0.3607 | 5.2821 | 4.5315 | 0.0159 | 0.3491 | 0.0795 | 0.4286 | 0.0965 | 0.0732 | 0.1696 | 0.0000 | 1,400.1103 | 1,400.1103 | 0.0116 | 0.0000 | 1,400.3533 |

3.3 Paving - 2018

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 | 0.0774 | 0.8238 | 0.6957 | 1.0700e-003 | | 0.0451 | 0.0451 | | 0.0415 | 0.0415 | 0.0000 | 97.7700 | 97.7700 | 0.0304 | 0.0000 | 98.4091 |
| Paving | 0.0325 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.1098 | 0.8238 | 0.6957 | 1.0700e-003 | | 0.0451 | 0.0451 | | 0.0415 | 0.0415 | 0.0000 | 97.7700 | 97.7700 | 0.0304 | 0.0000 | 98.4091 |

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 | 2.5300e-003 | 3.7700e-003 | 0.0392 | 1.0000e-004 | 7.8900e-003 | 7.0000e-005 | 7.9600e-003 | 2.1000e-003 | 7.0000e-005 | 2.1600e-003 | 0.0000 | 7.1387 | 7.1387 | 3.8000e-004 | 0.0000 | 7.1466 |
| Total | 2.5300e-003 | 3.7700e-003 | 0.0392 | 1.0000e-004 | 7.8900e-003 | 7.0000e-005 | 7.9600e-003 | 2.1000e-003 | 7.0000e-005 | 2.1600e-003 | 0.0000 | 7.1387 | 7.1387 | 3.8000e-004 | 0.0000 | 7.1466 |

3.3 Paving - 2018

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 | 0.0132 | 0.0571 | 0.8125 | 1.0700e-003 | | 1.7600e-003 | 1.7600e-003 | | 1.7600e-003 | 1.7600e-003 | 0.0000 | 97.7699 | 97.7699 | 0.0304 | 0.0000 | 98.4090 |
| Paving | 0.0325 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.0457 | 0.0571 | 0.8125 | 1.0700e-003 | | 1.7600e-003 | 1.7600e-003 | | 1.7600e-003 | 1.7600e-003 | 0.0000 | 97.7699 | 97.7699 | 0.0304 | 0.0000 | 98.4090 |

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 | 2.5300e-003 | 3.7700e-003 | 0.0392 | 1.0000e-004 | 4.4700e-003 | 7.0000e-005 | 4.5400e-003 | 1.2600e-003 | 7.0000e-005 | 1.3200e-003 | 0.0000 | 7.1387 | 7.1387 | 3.8000e-004 | 0.0000 | 7.1466 |
| Total | 2.5300e-003 | 3.7700e-003 | 0.0392 | 1.0000e-004 | 4.4700e-003 | 7.0000e-005 | 4.5400e-003 | 1.2600e-003 | 7.0000e-005 | 1.3200e-003 | 0.0000 | 7.1387 | 7.1387 | 3.8000e-004 | 0.0000 | 7.1466 |

3.3 Paving - 2019

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 | 0.0741 | 0.7766 | 0.7470 | 1.1600e-003 | | 0.0421 | 0.0421 | | 0.0387 | 0.0387 | 0.0000 | 104.2052 | 104.2052 | 0.0330 | 0.0000 | 104.8976 |
| Paving | 0.0352 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.1093 | 0.7766 | 0.7470 | 1.1600e-003 | | 0.0421 | 0.0421 | | 0.0387 | 0.0387 | 0.0000 | 104.2052 | 104.2052 | 0.0330 | 0.0000 | 104.8976 |

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 | 2.5100e-003 | 3.7500e-003 | 0.0389 | 1.1000e-004 | 8.5500e-003 | 7.0000e-005 | 8.6200e-003 | 2.2700e-003 | 7.0000e-005 | 2.3400e-003 | 0.0000 | 7.4303 | 7.4303 | 3.8000e-004 | 0.0000 | 7.4382 |
| Total | 2.5100e-003 | 3.7500e-003 | 0.0389 | 1.1000e-004 | 8.5500e-003 | 7.0000e-005 | 8.6200e-003 | 2.2700e-003 | 7.0000e-005 | 2.3400e-003 | 0.0000 | 7.4303 | 7.4303 | 3.8000e-004 | 0.0000 | 7.4382 |

3.3 Paving - 2019

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 | 0.0143 | 0.0619 | 0.8802 | 1.1600e-003 | | 1.9000e-003 | 1.9000e-003 | | 1.9000e-003 | 1.9000e-003 | 0.0000 | 104.2051 | 104.2051 | 0.0330 | 0.0000 | 104.8975 |
| Paving | 0.0352 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.0495 | 0.0619 | 0.8802 | 1.1600e-003 | | 1.9000e-003 | 1.9000e-003 | | 1.9000e-003 | 1.9000e-003 | 0.0000 | 104.2051 | 104.2051 | 0.0330 | 0.0000 | 104.8975 |

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 | 2.5100e-003 | 3.7500e-003 | 0.0389 | 1.1000e-004 | 4.8400e-003 | 7.0000e-005 | 4.9200e-003 | 1.3600e-003 | 7.0000e-005 | 1.4300e-003 | 0.0000 | 7.4303 | 7.4303 | 3.8000e-004 | 0.0000 | 7.4382 |
| Total | 2.5100e-003 | 3.7500e-003 | 0.0389 | 1.1000e-004 | 4.8400e-003 | 7.0000e-005 | 4.9200e-003 | 1.3600e-003 | 7.0000e-005 | 1.4300e-003 | 0.0000 | 7.4303 | 7.4303 | 3.8000e-004 | 0.0000 | 7.4382 |

3.4 Architectural Coating - 2019

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 | 0.5629 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.3300e-003 | 0.0367 | 0.0368 | 6.0000e-005 | | 2.5800e-003 | 2.5800e-003 | | 2.5800e-003 | 2.5800e-003 | 0.0000 | 5.1065 | 5.1065 | 4.3000e-004 | 0.0000 | 5.1156 |
| Total | 0.5682 | 0.0367 | 0.0368 | 6.0000e-005 | | 2.5800e-003 | 2.5800e-003 | | 2.5800e-003 | 2.5800e-003 | 0.0000 | 5.1065 | 5.1065 | 4.3000e-004 | 0.0000 | 5.1156 |

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 | 0.0234 | 0.0349 | 0.3619 | 1.0100e-003 | 0.0796 | 6.9000e-004 | 0.0803 | 0.0211 | 6.4000e-004 | 0.0218 | 0.0000 | 69.1584 | 69.1584 | 3.5400e-003 | 0.0000 | 69.2327 |
| Total | 0.0234 | 0.0349 | 0.3619 | 1.0100e-003 | 0.0796 | 6.9000e-004 | 0.0803 | 0.0211 | 6.4000e-004 | 0.0218 | 0.0000 | 69.1584 | 69.1584 | 3.5400e-003 | 0.0000 | 69.2327 |

3.4 Architectural Coating - 2019

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 | 0.5629 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.9000e-004 | 2.5800e-003 | 0.0367 | 6.0000e-005 | | 8.0000e-005 | 8.0000e-005 | | 8.0000e-005 | 8.0000e-005 | 0.0000 | 5.1065 | 5.1065 | 4.3000e-004 | 0.0000 | 5.1156 |
| Total | 0.5635 | 2.5800e-003 | 0.0367 | 6.0000e-005 | | 8.0000e-005 | 8.0000e-005 | | 8.0000e-005 | 8.0000e-005 | 0.0000 | 5.1065 | 5.1065 | 4.3000e-004 | 0.0000 | 5.1156 |

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 | 0.0234 | 0.0349 | 0.3619 | 1.0100e-003 | 0.0451 | 6.9000e-004 | 0.0458 | 0.0127 | 6.4000e-004 | 0.0133 | 0.0000 | 69.1584 | 69.1584 | 3.5400e-003 | 0.0000 | 69.2327 |
| Total | 0.0234 | 0.0349 | 0.3619 | 1.0100e-003 | 0.0451 | 6.9000e-004 | 0.0458 | 0.0127 | 6.4000e-004 | 0.0133 | 0.0000 | 69.1584 | 69.1584 | 3.5400e-003 | 0.0000 | 69.2327 |

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

4.2 Trip Summary Information

| Land Use | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|----------------------------|-------------------------|----------|--------|-------------|------------|
| | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Other Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Other Non-Asphalt Surfaces | 0.00 | 0.00 | 0.00 | | |
| Total | 0.00 | 0.00 | 0.00 | | |

4.3 Trip Type Information

| Land Use | Miles | | | Trip % | | | Trip Purpose % | | |
|----------------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
| | 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 | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Other Non-Asphalt Surfaces | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

| LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 0.527271 | 0.057774 | 0.179409 | 0.125521 | 0.039563 | 0.006393 | 0.017164 | 0.035220 | 0.002536 | 0.003167 | 0.003715 | 0.000530 | 0.001736 |

5.3 Energy by Land Use - Electricity

Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|-----------------|---------------|---------------|---------------|---------------|
| Land Use | kWh/yr | MT/yr | | | |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|-----------------|---------------|---------------|---------------|---------------|
| Land Use | kWh/yr | MT/yr | | | |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

6.0 Area Detail

6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 20.6165 | 5.1000e-004 | 0.0553 | 0.0000 | | 2.0000e-004 | 2.0000e-004 | | 2.0000e-004 | 2.0000e-004 | 0.0000 | 0.1072 | 0.1072 | 2.8000e-004 | 0.0000 | 0.1132 |
| Unmitigated | 20.6165 | 5.1000e-004 | 0.0553 | 0.0000 | | 2.0000e-004 | 2.0000e-004 | | 2.0000e-004 | 2.0000e-004 | 0.0000 | 0.1072 | 0.1072 | 2.8000e-004 | 0.0000 | 0.1132 |

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 | 5.0046 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 15.6067 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 5.1700e-003 | 5.1000e-004 | 0.0553 | 0.0000 | | 2.0000e-004 | 2.0000e-004 | | 2.0000e-004 | 2.0000e-004 | 0.0000 | 0.1072 | 0.1072 | 2.8000e-004 | 0.0000 | 0.1132 |
| Total | 20.6165 | 5.1000e-004 | 0.0553 | 0.0000 | | 2.0000e-004 | 2.0000e-004 | | 2.0000e-004 | 2.0000e-004 | 0.0000 | 0.1072 | 0.1072 | 2.8000e-004 | 0.0000 | 0.1132 |

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 | 5.0046 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 15.6067 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 5.1700e-003 | 5.1000e-004 | 0.0553 | 0.0000 | | 2.0000e-004 | 2.0000e-004 | | 2.0000e-004 | 2.0000e-004 | 0.0000 | 0.1072 | 0.1072 | 2.8000e-004 | 0.0000 | 0.1132 |
| Total | 20.6165 | 5.1000e-004 | 0.0553 | 0.0000 | | 2.0000e-004 | 2.0000e-004 | | 2.0000e-004 | 2.0000e-004 | 0.0000 | 0.1072 | 0.1072 | 2.8000e-004 | 0.0000 | 0.1132 |

7.0 Water Detail

7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|-------------|-----------|--------|--------|--------|
| Category | MT/yr | | | |
| Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

7.2 Water by Land Use

Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|--------------------|---------------|---------------|---------------|---------------|
| Land Use | Mgal | MT/yr | | | |
| Other Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|--------------------|---------------|---------------|---------------|---------------|
| Land Use | Mgal | MT/yr | | | |
| Other Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|----------------|---------------|---------------|---------------|---------------|
| Land Use | tons | MT/yr | | | |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

8.2 Waste by Land Use

Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|----------------------------|----------------|---------------|---------------|---------------|---------------|
| Land Use | tons | MT/yr | | | |
| Other Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Other Non-Asphalt Surfaces | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

9.0 Operational Offroad

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

10.0 Vegetation

Alternative 4b: Underground Stations and Tunnels (Cut and Cover)

ESFV Alt 4b Underground Stations and Tunnels (Cut and Cover)
Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|------------------------|--------|----------|-------------|--------------------|------------|
| General Light Industry | 222.57 | 1000sqft | 5.11 | 222,568.00 | 0 |

1.2 Other Project Characteristics

| | | | | | |
|--------------------------------|---|--------------------------------|-------|----------------------------------|-------|
| Urbanization | Urban | Wind Speed (m/s) | 2.2 | Precipitation Freq (Days) | 33 |
| Climate Zone | 12 | | | Operational Year | 2020 |
| Utility Company | Los Angeles Department of Water & Power | | | | |
| CO2 Intensity (lb/MWhr) | 1227.89 | CH4 Intensity (lb/MWhr) | 0.029 | N2O Intensity (lb/MWhr) | 0.006 |

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 30-month construction duration beginning June 2017

Land Use - Three underground stations have a combined 222,568 gsf

Construction Phase - 30-month construction duration with work occurring 6 days per week ~ 780 days

Off-road Equipment - 4 welders, 2 generator sets, 2 excavators, 1 crane, 4 tractors/loaders/backhoes, and 3 rubber tired dozers

Off-road Equipment - 2 cranes, 3 forklifts, 2 generator sets, 3 tractors/loaders/backhoes, and 4 welders

Grading - Tunnel: 1.716 million cy export and 1.201 million cy import for 13,700 linear feet tunnel

Stations: 200,000 cy export

Acres disturbed: 13,700 linear feet x 25 feet wide cut and cover tunnels x 2 ~ 15.7 acres

Architectural Coating - Stations generally use pre-fabricated cladding/tile on on interiors. Exterior of station not painted/embellished (underground and not visible)

Area Coating - Stations generally use pre-fabricated cladding/tile on on interiors. Exterior of station not painted/embellished (underground and not visible)

Energy Use -

Construction Off-road Equipment Mitigation - Water exposed areas three times daily

Clean paved roads

Tier 4 Final equipment

| Table Name | Column Name | Default Value | New Value |
|-------------------------|---|---------------|-----------|
| tblArchitecturalCoating | ConstArea_Nonresidential_Exterior | 111,284.00 | 0.00 |
| tblArchitecturalCoating | ConstArea_Nonresidential_Interior | 333,852.00 | 0.00 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialExteriorValue | 250 | 0 |
| tblAreaMitigation | UseLowVOCPaintNonresidentialInteriorValue | 250 | 0 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorValue | 100 | 0 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorValue | 50 | 0 |
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 50 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |

| | | | |
|-------------------------|----------------------------|------------|--------------|
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 7.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 8.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstructionPhase | NumDays | 20.00 | 30.00 |
| tblConstructionPhase | NumDays | 230.00 | 250.00 |
| tblConstructionPhase | NumDays | 20.00 | 50.00 |
| tblConstructionPhase | NumDays | 10.00 | 450.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblGrading | AcresOfGrading | 0.00 | 15.70 |
| tblGrading | MaterialExported | 0.00 | 1,916,000.00 |
| tblGrading | MaterialImported | 0.00 | 1,201,000.00 |
| tblLandUse | LandUseSquareFeet | 222,570.00 | 222,568.00 |

| | | | |
|---------------------------|----------------------------|------|----------------|
| tblOffRoadEquipment | OffRoadEquipmentType | | Cranes |
| tblOffRoadEquipment | OffRoadEquipmentType | | Excavators |
| tblOffRoadEquipment | OffRoadEquipmentType | | Welders |
| tblOffRoadEquipment | OffRoadEquipmentType | | Generator Sets |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 2.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 2.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 4.00 |
| tblProjectCharacteristics | OperationalYear | 2014 | 2020 |

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 | | | | | |
| 2017 | 2.2379 | 29.1387 | 23.1755 | 0.0668 | 7.1395 | 0.7224 | 7.8618 | 3.0113 | 0.6727 | 3.6840 | 0.0000 | 5,996.544 5 | 5,996.544 5 | 0.2088 | 0.0000 | 6,000.929 3 |
| 2018 | 3.2002 | 39.9366 | 33.6725 | 0.0989 | 7.3394 | 1.0201 | 8.3595 | 3.0794 | 0.9507 | 4.0301 | 0.0000 | 8,736.758 1 | 8,736.758 1 | 0.3226 | 0.0000 | 8,743.533 0 |
| 2019 | 0.5461 | 4.2544 | 4.1551 | 7.5000e- 003 | 0.1337 | 0.2340 | 0.3677 | 0.0360 | 0.2224 | 0.2583 | 0.0000 | 619.1733 | 619.1733 | 0.1073 | 0.0000 | 621.4272 |
| Total | 5.9842 | 73.3297 | 61.0031 | 0.1732 | 14.6126 | 1.9765 | 16.5890 | 6.1267 | 1.8458 | 7.9724 | 0.0000 | 15,352.47 59 | 15,352.47 59 | 0.6388 | 0.0000 | 15,365.88 95 |

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 | | | | | |
| 2017 | 1.4718 | 22.1977 | 21.5034 | 0.0668 | 3.2712 | 0.3120 | 3.5832 | 1.3183 | 0.2879 | 1.6061 | 0.0000 | 5,996.543 7 | 5,996.543 7 | 0.2088 | 0.0000 | 6,000.928 5 |
| 2018 | 2.1325 | 30.3691 | 31.7269 | 0.0989 | 3.4511 | 0.4575 | 3.9086 | 1.3815 | 0.4223 | 1.8037 | 0.0000 | 8,736.756 9 | 8,736.756 9 | 0.3226 | 0.0000 | 8,743.531 8 |
| 2019 | 0.1264 | 0.9302 | 4.2144 | 7.5000e- 003 | 0.0774 | 0.0127 | 0.0901 | 0.0221 | 0.0123 | 0.0345 | 0.0000 | 619.1728 | 619.1728 | 0.1073 | 0.0000 | 621.4267 |
| Total | 3.7307 | 53.4970 | 57.4448 | 0.1732 | 6.7997 | 0.7822 | 7.5818 | 2.7218 | 0.7224 | 3.4443 | 0.0000 | 15,352.47 34 | 15,352.47 34 | 0.6388 | 0.0000 | 15,365.88 70 |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------------|-------|-------|------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| Percent Reduction | 37.66 | 27.05 | 5.83 | 0.00 | 53.47 | 60.43 | 54.30 | 55.57 | 60.86 | 56.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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 | 1.0624 | 3.0000e-005 | 2.8600e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 5.5200e-003 | 5.5200e-003 | 1.0000e-005 | 0.0000 | 5.8300e-003 |
| Energy | 0.0226 | 0.2052 | 0.1724 | 1.2300e-003 | | 0.0156 | 0.0156 | | 0.0156 | 0.0156 | 0.0000 | 1,717.1477 | 1,717.1477 | 0.0396 | 0.0114 | 1,721.5109 |
| Mobile | 0.6974 | 2.4529 | 9.1087 | 0.0294 | 1.9673 | 0.0405 | 2.0077 | 0.5270 | 0.0373 | 0.5643 | 0.0000 | 2,072.8615 | 2,072.8615 | 0.0761 | 0.0000 | 2,074.4600 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 56.0235 | 0.0000 | 56.0235 | 3.3109 | 0.0000 | 125.5522 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 16.3288 | 373.2656 | 389.5944 | 1.6859 | 0.0414 | 437.8408 |
| Total | 1.7824 | 2.6581 | 9.2839 | 0.0306 | 1.9673 | 0.0561 | 2.0234 | 0.5270 | 0.0529 | 0.5799 | 72.3523 | 4,163.2803 | 4,235.6326 | 5.1125 | 0.0528 | 4,359.3697 |

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 | 1.0624 | 3.0000e-005 | 2.8600e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 5.5200e-003 | 5.5200e-003 | 1.0000e-005 | 0.0000 | 5.8300e-003 |
| Energy | 0.0226 | 0.2052 | 0.1724 | 1.2300e-003 | | 0.0156 | 0.0156 | | 0.0156 | 0.0156 | 0.0000 | 1,717.1477 | 1,717.1477 | 0.0396 | 0.0114 | 1,721.5109 |
| Mobile | 0.6974 | 2.4529 | 9.1087 | 0.0294 | 1.9673 | 0.0405 | 2.0077 | 0.5270 | 0.0373 | 0.5643 | 0.0000 | 2,072.8615 | 2,072.8615 | 0.0761 | 0.0000 | 2,074.4600 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 56.0235 | 0.0000 | 56.0235 | 3.3109 | 0.0000 | 125.5522 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 16.3288 | 373.2656 | 389.5944 | 1.6856 | 0.0414 | 437.8148 |
| Total | 1.7824 | 2.6581 | 9.2839 | 0.0306 | 1.9673 | 0.0561 | 2.0234 | 0.5270 | 0.0529 | 0.5799 | 72.3523 | 4,163.2803 | 4,235.6326 | 5.1122 | 0.0528 | 4,359.3436 |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | 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 | 0.01 | 0.11 | 0.00 |

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 | 6/1/2017 | 11/7/2018 | 6 | 450 | |
| 2 | Building Construction | Building Construction | 11/8/2018 | 8/26/2019 | 6 | 250 | |
| 3 | Paving | Paving | 8/27/2019 | 10/23/2019 | 6 | 50 | |
| 4 | Architectural Coating | Architectural Coating | 10/24/2019 | 11/27/2019 | 6 | 30 | |

Acres of Grading (Site Preparation Phase): 15.7

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|-----------------------|---------------------------|--------|-------------|-------------|-------------|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |
| Site Preparation | Cranes | 1 | 8.00 | 226 | 0.29 |
| Site Preparation | Excavators | 2 | 8.00 | 162 | 0.38 |
| Site Preparation | Welders | 4 | 8.00 | 46 | 0.45 |
| Building Construction | Cranes | 2 | 7.00 | 226 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 2 | 8.00 | 84 | 0.74 |
| Paving | Pavers | 2 | 8.00 | 125 | 0.42 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Site Preparation | Generator Sets | 2 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Paving | Paving Equipment | 2 | 8.00 | 130 | 0.36 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 255 | 0.40 |
| Building Construction | Welders | 4 | 8.00 | 46 | 0.45 |

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 | 16 | 40.00 | 0.00 | 389,625.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 14 | 93.00 | 36.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 19.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2017

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 | | | | | 4.2495 | 0.0000 | 4.2495 | 2.2620 | 0.0000 | 2.2620 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.8559 | 7.6285 | 5.8737 | 7.2000e-003 | | 0.4213 | 0.4213 | | 0.3957 | 0.3957 | 0.0000 | 642.3800 | 642.3800 | 0.1673 | 0.0000 | 645.8934 |
| Total | 0.8559 | 7.6285 | 5.8737 | 7.2000e-003 | 4.2495 | 0.4213 | 4.6708 | 2.2620 | 0.3957 | 2.6577 | 0.0000 | 642.3800 | 642.3800 | 0.1673 | 0.0000 | 645.8934 |

3.2 Site Preparation - 2017

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 | 1.3676 | 21.4891 | 17.0820 | 0.0591 | 2.8499 | 0.3007 | 3.1506 | 0.7387 | 0.2766 | 1.0153 | 0.0000 | 5,316.4955 | 5,316.4955 | 0.0394 | 0.0000 | 5,317.3237 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0143 | 0.0211 | 0.2199 | 5.1000e-004 | 0.0401 | 3.7000e-004 | 0.0405 | 0.0107 | 3.4000e-004 | 0.0110 | 0.0000 | 37.6690 | 37.6690 | 2.0500e-003 | 0.0000 | 37.7121 |
| Total | 1.3820 | 21.5103 | 17.3018 | 0.0596 | 2.8900 | 0.3011 | 3.1911 | 0.7493 | 0.2770 | 1.0263 | 0.0000 | 5,354.1645 | 5,354.1645 | 0.0415 | 0.0000 | 5,355.0358 |

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 | | | | | 1.6573 | 0.0000 | 1.6573 | 0.8822 | 0.0000 | 0.8822 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0899 | 0.6874 | 4.2016 | 7.2000e-003 | | 0.0109 | 0.0109 | | 0.0109 | 0.0109 | 0.0000 | 642.3792 | 642.3792 | 0.1673 | 0.0000 | 645.8927 |
| Total | 0.0899 | 0.6874 | 4.2016 | 7.2000e-003 | 1.6573 | 0.0109 | 1.6682 | 0.8822 | 0.0109 | 0.8931 | 0.0000 | 642.3792 | 642.3792 | 0.1673 | 0.0000 | 645.8927 |

3.2 Site Preparation - 2017

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 | 1.3676 | 21.4891 | 17.0820 | 0.0591 | 1.5912 | 0.3007 | 1.8919 | 0.4297 | 0.2766 | 0.7063 | 0.0000 | 5,316.4955 | 5,316.4955 | 0.0394 | 0.0000 | 5,317.3237 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 0.0143 | 0.0211 | 0.2199 | 5.1000e-004 | 0.0227 | 3.7000e-004 | 0.0231 | 6.3900e-003 | 3.4000e-004 | 6.7300e-003 | 0.0000 | 37.6690 | 37.6690 | 2.0500e-003 | 0.0000 | 37.7121 |
| Total | 1.3820 | 21.5103 | 17.3018 | 0.0596 | 1.6139 | 0.3011 | 1.9150 | 0.4361 | 0.2770 | 0.7130 | 0.0000 | 5,354.1645 | 5,354.1645 | 0.0415 | 0.0000 | 5,355.0358 |

3.2 Site Preparation - 2018

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 | | | | | 4.2495 | 0.0000 | 4.2495 | 2.2620 | 0.0000 | 2.2620 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.0975 | 9.8236 | 8.0567 | 0.0105 | | 0.5260 | 0.5260 | | 0.4944 | 0.4944 | 0.0000 | 926.3958 | 926.3958 | 0.2403 | 0.0000 | 931.4419 |
| Total | 1.0975 | 9.8236 | 8.0567 | 0.0105 | 4.2495 | 0.5260 | 4.7755 | 2.2620 | 0.4944 | 2.7564 | 0.0000 | 926.3958 | 926.3958 | 0.2403 | 0.0000 | 931.4419 |

3.2 Site Preparation - 2018

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 | 1.9553 | 29.1304 | 24.4522 | 0.0861 | 3.0029 | 0.4383 | 3.4412 | 0.7942 | 0.4032 | 1.1974 | 0.0000 | 7,629.4415 | 7,629.4415 | 0.0583 | 0.0000 | 7,630.6663 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 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 | 0.0280 | 0.2906 | 7.4000e-004 | 0.0585 | 5.2000e-004 | 0.0590 | 0.0155 | 4.8000e-004 | 0.0160 | 0.0000 | 52.9455 | 52.9455 | 2.7800e-003 | 0.0000 | 53.0039 |
| Total | 1.9740 | 29.1584 | 24.7427 | 0.0869 | 3.0614 | 0.4389 | 3.5002 | 0.8097 | 0.4037 | 1.2135 | 0.0000 | 7,682.3870 | 7,682.3870 | 0.0611 | 0.0000 | 7,683.6702 |

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 | | | | | 1.6573 | 0.0000 | 1.6573 | 0.8822 | 0.0000 | 0.8822 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.1311 | 1.0029 | 6.1302 | 0.0105 | | 0.0159 | 0.0159 | | 0.0159 | 0.0159 | 0.0000 | 926.3947 | 926.3947 | 0.2403 | 0.0000 | 931.4408 |
| Total | 0.1311 | 1.0029 | 6.1302 | 0.0105 | 1.6573 | 0.0159 | 1.6732 | 0.8822 | 0.0159 | 0.8981 | 0.0000 | 926.3947 | 926.3947 | 0.2403 | 0.0000 | 931.4408 |

3.2 Site Preparation - 2018

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 | 1.9553 | 29.1304 | 24.4522 | 0.0861 | 1.7441 | 0.4383 | 2.1825 | 0.4852 | 0.4032 | 0.8885 | 0.0000 | 7,629.4415 | 7,629.4415 | 0.0583 | 0.0000 | 7,630.6663 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 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 | 0.0280 | 0.2906 | 7.4000e-004 | 0.0332 | 5.2000e-004 | 0.0337 | 9.3200e-003 | 4.8000e-004 | 9.8000e-003 | 0.0000 | 52.9455 | 52.9455 | 2.7800e-003 | 0.0000 | 53.0039 |
| Total | 1.9740 | 29.1584 | 24.7427 | 0.0869 | 1.7773 | 0.4389 | 2.2162 | 0.4946 | 0.4037 | 0.8983 | 0.0000 | 7,682.3870 | 7,682.3870 | 0.0611 | 0.0000 | 7,683.6702 |

3.3 Building Construction - 2018

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 | 0.1147 | 0.8800 | 0.6674 | 1.0600e-003 | | 0.0540 | 0.0540 | | 0.0515 | 0.0515 | 0.0000 | 90.8146 | 90.8146 | 0.0200 | 0.0000 | 91.2343 |
| Total | 0.1147 | 0.8800 | 0.6674 | 1.0600e-003 | | 0.0540 | 0.0540 | | 0.0515 | 0.0515 | 0.0000 | 90.8146 | 90.8146 | 0.0200 | 0.0000 | 91.2343 |

3.3 Building Construction - 2018

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 | 0.0000 |
| Vendor | 6.3800e-003 | 0.0634 | 0.0894 | 1.8000e-004 | 5.0800e-003 | 9.5000e-004 | 6.0400e-003 | 1.4500e-003 | 8.8000e-004 | 2.3300e-003 | 0.0000 | 15.9528 | 15.9528 | 1.2000e-004 | 0.0000 | 0.0000 | 15.9553 |
| Worker | 7.5100e-003 | 0.0112 | 0.1164 | 3.0000e-004 | 0.0234 | 2.1000e-004 | 0.0237 | 6.2300e-003 | 1.9000e-004 | 6.4200e-003 | 0.0000 | 21.2080 | 21.2080 | 1.1100e-003 | 0.0000 | 0.0000 | 21.2314 |
| Total | 0.0139 | 0.0746 | 0.2058 | 4.8000e-004 | 0.0285 | 1.1600e-003 | 0.0297 | 7.6800e-003 | 1.0700e-003 | 8.7500e-003 | 0.0000 | 37.1607 | 37.1607 | 1.2300e-003 | 0.0000 | 0.0000 | 37.1866 |

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 | 0.0134 | 0.1331 | 0.6482 | 1.0600e-003 | | 1.5200e-003 | 1.5200e-003 | | 1.5200e-003 | 1.5200e-003 | 0.0000 | 90.8145 | 90.8145 | 0.0200 | 0.0000 | 91.2342 |
| Total | 0.0134 | 0.1331 | 0.6482 | 1.0600e-003 | | 1.5200e-003 | 1.5200e-003 | | 1.5200e-003 | 1.5200e-003 | 0.0000 | 90.8145 | 90.8145 | 0.0200 | 0.0000 | 91.2342 |

3.3 Building Construction - 2018

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 | 6.3800e-003 | 0.0634 | 0.0894 | 1.8000e-004 | 3.2400e-003 | 9.5000e-004 | 4.1900e-003 | 1.0000e-003 | 8.8000e-004 | 1.8700e-003 | 0.0000 | 15.9528 | 15.9528 | 1.2000e-004 | 0.0000 | 15.9553 |
| Worker | 7.5100e-003 | 0.0112 | 0.1164 | 3.0000e-004 | 0.0133 | 2.1000e-004 | 0.0135 | 3.7300e-003 | 1.9000e-004 | 3.9300e-003 | 0.0000 | 21.2080 | 21.2080 | 1.1100e-003 | 0.0000 | 21.2314 |
| Total | 0.0139 | 0.0746 | 0.2058 | 4.8000e-004 | 0.0165 | 1.1600e-003 | 0.0177 | 4.7300e-003 | 1.0700e-003 | 5.8000e-003 | 0.0000 | 37.1607 | 37.1607 | 1.2300e-003 | 0.0000 | 37.1866 |

3.3 Building Construction - 2019

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 | 0.4470 | 3.5453 | 2.8793 | 4.6900e-003 | | 0.2068 | 0.2068 | | 0.1972 | 0.1972 | 0.0000 | 399.2996 | 399.2996 | 0.0857 | 0.0000 | 401.0993 |
| Total | 0.4470 | 3.5453 | 2.8793 | 4.6900e-003 | | 0.2068 | 0.2068 | | 0.1972 | 0.1972 | 0.0000 | 399.2996 | 399.2996 | 0.0857 | 0.0000 | 401.0993 |

3.3 Building Construction - 2019

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 | 0.0268 | 0.2594 | 0.3833 | 8.0000e-004 | 0.0225 | 4.0200e-003 | 0.0266 | 6.4300e-003 | 3.7000e-003 | 0.0101 | 0.0000 | 69.2948 | 69.2948 | 5.1000e-004 | 0.0000 | 69.3056 |
| Worker | 0.0305 | 0.0456 | 0.4729 | 1.3200e-003 | 0.1040 | 9.1000e-004 | 0.1049 | 0.0276 | 8.4000e-004 | 0.0285 | 0.0000 | 90.3632 | 90.3632 | 4.6200e-003 | 0.0000 | 90.4602 |
| Total | 0.0573 | 0.3049 | 0.8562 | 2.1200e-003 | 0.1265 | 4.9300e-003 | 0.1314 | 0.0340 | 4.5400e-003 | 0.0386 | 0.0000 | 159.6581 | 159.6581 | 5.1300e-003 | 0.0000 | 159.7659 |

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 | 0.0596 | 0.5905 | 2.8747 | 4.6900e-003 | | 6.7600e-003 | 6.7600e-003 | | 6.7600e-003 | 6.7600e-003 | 0.0000 | 399.2991 | 399.2991 | 0.0857 | 0.0000 | 401.0988 |
| Total | 0.0596 | 0.5905 | 2.8747 | 4.6900e-003 | | 6.7600e-003 | 6.7600e-003 | | 6.7600e-003 | 6.7600e-003 | 0.0000 | 399.2991 | 399.2991 | 0.0857 | 0.0000 | 401.0988 |

3.3 Building Construction - 2019

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 | 0.0268 | 0.2594 | 0.3833 | 8.0000e-004 | 0.0144 | 4.0200e-003 | 0.0184 | 4.4200e-003 | 3.7000e-003 | 8.1200e-003 | 0.0000 | 69.2948 | 69.2948 | 5.1000e-004 | 0.0000 | 69.3056 |
| Worker | 0.0305 | 0.0456 | 0.4729 | 1.3200e-003 | 0.0589 | 9.1000e-004 | 0.0598 | 0.0166 | 8.4000e-004 | 0.0174 | 0.0000 | 90.3632 | 90.3632 | 4.6200e-003 | 0.0000 | 90.4602 |
| Total | 0.0573 | 0.3049 | 0.8562 | 2.1200e-003 | 0.0733 | 4.9300e-003 | 0.0782 | 0.0210 | 4.5400e-003 | 0.0255 | 0.0000 | 159.6581 | 159.6581 | 5.1300e-003 | 0.0000 | 159.7659 |

3.4 Paving - 2019

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 | 0.0357 | 0.3734 | 0.3591 | 5.6000e-004 | | 0.0202 | 0.0202 | | 0.0186 | 0.0186 | 0.0000 | 50.0987 | 50.0987 | 0.0159 | 0.0000 | 50.4315 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.0357 | 0.3734 | 0.3591 | 5.6000e-004 | | 0.0202 | 0.0202 | | 0.0186 | 0.0186 | 0.0000 | 50.0987 | 50.0987 | 0.0159 | 0.0000 | 50.4315 |

3.4 Paving - 2019

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 | 1.2100e-003 | 1.8000e-003 | 0.0187 | 5.0000e-005 | 4.1100e-003 | 4.0000e-005 | 4.1500e-003 | 1.0900e-003 | 3.0000e-005 | 1.1200e-003 | 0.0000 | 3.5722 | 3.5722 | 1.8000e-004 | 0.0000 | 3.5761 |
| Total | 1.2100e-003 | 1.8000e-003 | 0.0187 | 5.0000e-005 | 4.1100e-003 | 4.0000e-005 | 4.1500e-003 | 1.0900e-003 | 3.0000e-005 | 1.1200e-003 | 0.0000 | 3.5722 | 3.5722 | 1.8000e-004 | 0.0000 | 3.5761 |

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 | 6.8600e-003 | 0.0297 | 0.4232 | 5.6000e-004 | | 9.2000e-004 | 9.2000e-004 | | 9.2000e-004 | 9.2000e-004 | 0.0000 | 50.0986 | 50.0986 | 0.0159 | 0.0000 | 50.4315 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 6.8600e-003 | 0.0297 | 0.4232 | 5.6000e-004 | | 9.2000e-004 | 9.2000e-004 | | 9.2000e-004 | 9.2000e-004 | 0.0000 | 50.0986 | 50.0986 | 0.0159 | 0.0000 | 50.4315 |

3.4 Paving - 2019

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 | 1.2100e-003 | 1.8000e-003 | 0.0187 | 5.0000e-005 | 2.3300e-003 | 4.0000e-005 | 2.3600e-003 | 6.5000e-004 | 3.0000e-005 | 6.9000e-004 | 0.0000 | 3.5722 | 3.5722 | 1.8000e-004 | 0.0000 | 3.5761 |
| Total | 1.2100e-003 | 1.8000e-003 | 0.0187 | 5.0000e-005 | 2.3300e-003 | 4.0000e-005 | 2.3600e-003 | 6.5000e-004 | 3.0000e-005 | 6.9000e-004 | 0.0000 | 3.5722 | 3.5722 | 1.8000e-004 | 0.0000 | 3.5761 |

3.5 Architectural Coating - 2019

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 | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 4.0000e-003 | 0.0275 | 0.0276 | 4.0000e-005 | | 1.9300e-003 | 1.9300e-003 | | 1.9300e-003 | 1.9300e-003 | 0.0000 | 3.8299 | 3.8299 | 3.2000e-004 | 0.0000 | 3.8367 |
| Total | 4.0000e-003 | 0.0275 | 0.0276 | 4.0000e-005 | | 1.9300e-003 | 1.9300e-003 | | 1.9300e-003 | 1.9300e-003 | 0.0000 | 3.8299 | 3.8299 | 3.2000e-004 | 0.0000 | 3.8367 |

3.5 Architectural Coating - 2019

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 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 9.2000e-004 | 1.3700e-003 | 0.0142 | 4.0000e-005 | 3.1200e-003 | 3.0000e-005 | 3.1500e-003 | 8.3000e-004 | 3.0000e-005 | 8.5000e-004 | 0.0000 | 2.7149 | 2.7149 | 1.4000e-004 | 0.0000 | 2.7178 | |
| Total | 9.2000e-004 | 1.3700e-003 | 0.0142 | 4.0000e-005 | 3.1200e-003 | 3.0000e-005 | 3.1500e-003 | 8.3000e-004 | 3.0000e-005 | 8.5000e-004 | 0.0000 | 2.7149 | 2.7149 | 1.4000e-004 | 0.0000 | 2.7178 | |

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 | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 4.5000e-004 | 1.9300e-003 | 0.0275 | 4.0000e-005 | | 6.0000e-005 | 6.0000e-005 | | 6.0000e-005 | 6.0000e-005 | 0.0000 | 3.8299 | 3.8299 | 3.2000e-004 | 0.0000 | 3.8367 |
| Total | 4.5000e-004 | 1.9300e-003 | 0.0275 | 4.0000e-005 | | 6.0000e-005 | 6.0000e-005 | | 6.0000e-005 | 6.0000e-005 | 0.0000 | 3.8299 | 3.8299 | 3.2000e-004 | 0.0000 | 3.8367 |

3.5 Architectural Coating - 2019

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 | 9.2000e-004 | 1.3700e-003 | 0.0142 | 4.0000e-005 | 1.7700e-003 | 3.0000e-005 | 1.8000e-003 | 5.0000e-004 | 3.0000e-005 | 5.2000e-004 | 0.0000 | 2.7149 | 2.7149 | 1.4000e-004 | 0.0000 | 2.7178 |
| Total | 9.2000e-004 | 1.3700e-003 | 0.0142 | 4.0000e-005 | 1.7700e-003 | 3.0000e-005 | 1.8000e-003 | 5.0000e-004 | 3.0000e-005 | 5.2000e-004 | 0.0000 | 2.7149 | 2.7149 | 1.4000e-004 | 0.0000 | 2.7178 |

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.6974 | 2.4529 | 9.1087 | 0.0294 | 1.9673 | 0.0405 | 2.0077 | 0.5270 | 0.0373 | 0.5643 | 0.0000 | 2,072.8615 | 2,072.8615 | 0.0761 | 0.0000 | 2,074.4600 |
| Unmitigated | 0.6974 | 2.4529 | 9.1087 | 0.0294 | 1.9673 | 0.0405 | 2.0077 | 0.5270 | 0.0373 | 0.5643 | 0.0000 | 2,072.8615 | 2,072.8615 | 0.0761 | 0.0000 | 2,074.4600 |

4.2 Trip Summary Information

| Land Use | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|------------------------|-------------------------|----------|--------|-------------|------------|
| | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Light Industry | 1,551.31 | 293.79 | 151.35 | 5,188,489 | 5,188,489 |
| Total | 1,551.31 | 293.79 | 151.35 | 5,188,489 | 5,188,489 |

4.3 Trip Type Information

| Land Use | Miles | | | Trip % | | | Trip Purpose % | | |
|------------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
| | 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 |
| General Light Industry | 16.60 | 8.40 | 6.90 | 59.00 | 28.00 | 13.00 | 92 | 5 | 3 |

| LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 0.530094 | 0.057664 | 0.178835 | 0.124843 | 0.039181 | 0.006319 | 0.017052 | 0.034445 | 0.002509 | 0.003148 | 0.003693 | 0.000531 | 0.001685 |

5.0 Energy Detail

4.4 Fleet Mix

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 | 1,493.7399 | 1,493.7399 | 0.0353 | 7.3000e-003 | 1,496.7434 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1,493.7399 | 1,493.7399 | 0.0353 | 7.3000e-003 | 1,496.7434 |
| NaturalGas Mitigated | 0.0226 | 0.2052 | 0.1724 | 1.2300e-003 | | 0.0156 | 0.0156 | | 0.0156 | 0.0156 | 0.0000 | 223.4078 | 223.4078 | 4.2800e-003 | 4.1000e-003 | 224.7674 |
| NaturalGas Unmitigated | 0.0226 | 0.2052 | 0.1724 | 1.2300e-003 | | 0.0156 | 0.0156 | | 0.0156 | 0.0156 | 0.0000 | 223.4078 | 223.4078 | 4.2800e-003 | 4.1000e-003 | 224.7674 |

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 | | | | | |
| General Light Industry | 4.1865e+006 | 0.0226 | 0.2052 | 0.1724 | 1.2300e-003 | | 0.0156 | 0.0156 | | 0.0156 | 0.0156 | 0.0000 | 223.4078 | 223.4078 | 4.2800e-003 | 4.1000e-003 | 224.7674 |
| Total | | 0.0226 | 0.2052 | 0.1724 | 1.2300e-003 | | 0.0156 | 0.0156 | | 0.0156 | 0.0156 | 0.0000 | 223.4078 | 223.4078 | 4.2800e-003 | 4.1000e-003 | 224.7674 |

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 | | | | | |
| General Light Industry | 4.1865e+006 | 0.0226 | 0.2052 | 0.1724 | 1.2300e-003 | | 0.0156 | 0.0156 | | 0.0156 | 0.0156 | 0.0000 | 223.4078 | 223.4078 | 4.2800e-003 | 4.1000e-003 | 224.7674 |
| Total | | 0.0226 | 0.2052 | 0.1724 | 1.2300e-003 | | 0.0156 | 0.0156 | | 0.0156 | 0.0156 | 0.0000 | 223.4078 | 223.4078 | 4.2800e-003 | 4.1000e-003 | 224.7674 |

5.3 Energy by Land Use - Electricity

Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|------------------------|-----------------|-------------------|---------------|--------------------|-------------------|
| Land Use | kWh/yr | MT/yr | | | |
| General Light Industry | 2.68194e+006 | 1,493.7399 | 0.0353 | 7.3000e-003 | 1,496.7434 |
| Total | | 1,493.7399 | 0.0353 | 7.3000e-003 | 1,496.7434 |

5.3 Energy by Land Use - Electricity

Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|------------------------|-----------------|-------------------|---------------|--------------------|-------------------|
| Land Use | kWh/yr | MT/yr | | | |
| General Light Industry | 2.68194e+006 | 1,493.7399 | 0.0353 | 7.3000e-003 | 1,496.7434 |
| Total | | 1,493.7399 | 0.0353 | 7.3000e-003 | 1,496.7434 |

6.0 Area Detail

6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 1.0624 | 3.0000e-005 | 2.8600e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 5.5200e-003 | 5.5200e-003 | 1.0000e-005 | 0.0000 | 5.8300e-003 |
| Unmitigated | 1.0624 | 3.0000e-005 | 2.8600e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 5.5200e-003 | 5.5200e-003 | 1.0000e-005 | 0.0000 | 5.8300e-003 |

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 | 0.2579 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.8043 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 2.7000e-004 | 3.0000e-005 | 2.8600e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 5.5200e-003 | 5.5200e-003 | 1.0000e-005 | 0.0000 | 5.8300e-003 |
| Total | 1.0624 | 3.0000e-005 | 2.8600e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 5.5200e-003 | 5.5200e-003 | 1.0000e-005 | 0.0000 | 5.8300e-003 |

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 | 0.2579 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.8043 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 2.7000e-004 | 3.0000e-005 | 2.8600e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 5.5200e-003 | 5.5200e-003 | 1.0000e-005 | 0.0000 | 5.8300e-003 |
| Total | 1.0624 | 3.0000e-005 | 2.8600e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 5.5200e-003 | 5.5200e-003 | 1.0000e-005 | 0.0000 | 5.8300e-003 |

7.0 Water Detail

7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|-------------|-----------|--------|--------|----------|
| Category | MT/yr | | | |
| Mitigated | 389.5944 | 1.6856 | 0.0414 | 437.8148 |
| Unmitigated | 389.5944 | 1.6859 | 0.0414 | 437.8408 |

7.2 Water by Land Use

Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|------------------------|--------------------|-----------------|---------------|---------------|-----------------|
| Land Use | Mgal | MT/yr | | | |
| General Light Industry | 51.4693 / 0 | 389.5944 | 1.6859 | 0.0414 | 437.8408 |
| Total | | 389.5944 | 1.6859 | 0.0414 | 437.8408 |

7.2 Water by Land Use

Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|------------------------|--------------------|-----------------|---------------|---------------|-----------------|
| Land Use | Mgal | MT/yr | | | |
| General Light Industry | 51.4693 / 0 | 389.5944 | 1.6856 | 0.0414 | 437.8148 |
| Total | | 389.5944 | 1.6856 | 0.0414 | 437.8148 |

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

| | Total CO2 | CH4 | N2O | CO2e |
|-------------|-----------|--------|--------|----------|
| | MT/yr | | | |
| Mitigated | 56.0235 | 3.3109 | 0.0000 | 125.5522 |
| Unmitigated | 56.0235 | 3.3109 | 0.0000 | 125.5522 |

8.2 Waste by Land Use

Unmitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|------------------------|----------------|----------------|---------------|---------------|-----------------|
| Land Use | tons | MT/yr | | | |
| General Light Industry | 275.99 | 56.0235 | 3.3109 | 0.0000 | 125.5522 |
| Total | | 56.0235 | 3.3109 | 0.0000 | 125.5522 |

Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|------------------------|----------------|----------------|---------------|---------------|-----------------|
| Land Use | tons | MT/yr | | | |
| General Light Industry | 275.99 | 56.0235 | 3.3109 | 0.0000 | 125.5522 |
| Total | | 56.0235 | 3.3109 | 0.0000 | 125.5522 |

9.0 Operational Offroad

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

10.0 Vegetation

Maintenance Facility

ESFV Maintenance Facility
Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|------------------------|-------|----------|-------------|--------------------|------------|
| General Light Industry | 70.00 | 1000sqft | 26.00 | 70,000.00 | 0 |

1.2 Other Project Characteristics

| | | | | | |
|--------------------------------|---|--------------------------------|-------|----------------------------------|-------|
| Urbanization | Urban | Wind Speed (m/s) | 2.2 | Precipitation Freq (Days) | 33 |
| Climate Zone | 12 | | | Operational Year | 2018 |
| Utility Company | Los Angeles Department of Water & Power | | | | |
| CO2 Intensity (lb/MWhr) | 1227.89 | CH4 Intensity (lb/MWhr) | 0.029 | N2O Intensity (lb/MWhr) | 0.006 |

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Assuming a 12-month construction period starting June 2017

Land Use - Structures (Admin, Blowdown, Car Wash, Maintenance) total 70,000 square feet on a 26-acre site.

Construction Phase - Assuming a 6-day work week, total construction days would be ~ 310, starting June 2017.

Grading - Site acreage is 26 acres

Demolition - Approximately 2/3 of the maintenance facility site currently occupied by structures ~ 750,000 sf

Energy Use -

Construction Off-road Equipment Mitigation - Water exposed area three times daily

Clean paved roads

Tier 4 Final engines

Mobile Commute Mitigation - All Metro employees ride Metro vehicles free of charge

Area Mitigation -

| Table Name | Column Name | Default Value | New Value |
|-------------------------|--------------------------------|---------------|--------------|
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 50 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 5.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 7.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstructionPhase | NumDays | 35.00 | 20.00 |
| tblConstructionPhase | NumDays | 440.00 | 204.00 |

| | | | |
|---------------------------|-----------------|-------|-------|
| tblConstructionPhase | NumDays | 30.00 | 36.00 |
| tblConstructionPhase | NumDays | 35.00 | 20.00 |
| tblConstructionPhase | NumDays | 20.00 | 30.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblGrading | AcresOfGrading | 0.00 | 26.00 |
| tblLandUse | LotAcreage | 1.61 | 26.00 |
| tblProjectCharacteristics | OperationalYear | 2014 | 2018 |

2.0 Emissions Summary

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 | 0.3341 | 1.0000e-005 | 9.1000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.7400e-003 | 1.7400e-003 | 0.0000 | 0.0000 | 1.8400e-003 |
| Energy | 7.1000e-003 | 0.0645 | 0.0542 | 3.9000e-004 | | 4.9100e-003 | 4.9100e-003 | | 4.9100e-003 | 4.9100e-003 | 0.0000 | 540.0612 | 540.0612 | 0.0124 | 3.5800e-003 | 541.4335 |
| Mobile | 0.2475 | 0.9015 | 3.2716 | 9.2500e-003 | 0.6186 | 0.0133 | 0.6319 | 0.1657 | 0.0123 | 0.1779 | 0.0000 | 696.3425 | 696.3425 | 0.0270 | 0.0000 | 696.9089 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 17.6196 | 0.0000 | 17.6196 | 1.0413 | 0.0000 | 39.4867 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 5.1356 | 117.3949 | 122.5305 | 0.5302 | 0.0130 | 137.7044 |
| Total | 0.5887 | 0.9661 | 3.3268 | 9.6400e-003 | 0.6186 | 0.0182 | 0.6368 | 0.1657 | 0.0172 | 0.1829 | 22.7552 | 1,353.8003 | 1,376.5555 | 1.6109 | 0.0166 | 1,415.5352 |

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 | 0.3341 | 1.0000e-005 | 9.1000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.7400e-003 | 1.7400e-003 | 0.0000 | 0.0000 | 1.8400e-003 |
| Energy | 7.1000e-003 | 0.0645 | 0.0542 | 3.9000e-004 | | 4.9100e-003 | 4.9100e-003 | | 4.9100e-003 | 4.9100e-003 | 0.0000 | 540.0612 | 540.0612 | 0.0124 | 3.5800e-003 | 541.4335 |
| Mobile | 0.2475 | 0.9015 | 3.2716 | 9.2500e-003 | 0.6186 | 0.0133 | 0.6319 | 0.1657 | 0.0123 | 0.1779 | 0.0000 | 696.3425 | 696.3425 | 0.0270 | 0.0000 | 696.9089 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 17.6196 | 0.0000 | 17.6196 | 1.0413 | 0.0000 | 39.4867 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 5.1356 | 117.3949 | 122.5305 | 0.5302 | 0.0130 | 137.6962 |
| Total | 0.5887 | 0.9661 | 3.3268 | 9.6400e-003 | 0.6186 | 0.0182 | 0.6368 | 0.1657 | 0.0172 | 0.1829 | 22.7552 | 1,353.8003 | 1,376.5555 | 1.6109 | 0.0166 | 1,415.5270 |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | 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 | 0.01 | 0.12 | 0.00 |

3.0 Construction Detail

Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|--------------|-----------------------|-----------------------|------------|-----------|---------------|----------|-------------------|
| 1 | Demolition | Demolition | 6/1/2017 | 7/12/2017 | 6 | 36 | |
| 2 | Site Preparation | Site Preparation | 7/13/2017 | 8/16/2017 | 6 | 30 | |
| 3 | Building Construction | Building Construction | 8/17/2017 | 4/11/2018 | 6 | 204 | |
| 4 | Paving | Paving | 4/12/2018 | 5/4/2018 | 6 | 20 | |
| 5 | Architectural Coating | Architectural Coating | 5/5/2018 | 5/28/2018 | 6 | 20 | |

Acres of Grading (Site Preparation Phase): 26

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 105,000; Non-Residential Outdoor: 35,000 (Architectural Coating – sqft)

OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|-----------------------|---------------------------|--------|-------------|-------------|-------------|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |
| Demolition | Excavators | 3 | 8.00 | 162 | 0.38 |
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Building Construction | Cranes | 1 | 7.00 | 226 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Paving | Pavers | 2 | 8.00 | 125 | 0.42 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 255 | 0.40 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Paving | Paving Equipment | 2 | 8.00 | 130 | 0.36 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 255 | 0.40 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |

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 |
|-----------------------|-------------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|----------------------|----------------------|-----------------------|
| Demolition | 6 | 15.00 | 0.00 | 3,411.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 29.00 | 11.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 6.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2017

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 | | | | | 0.3691 | 0.0000 | 0.3691 | 0.0559 | 0.0000 | 0.0559 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0729 | 0.7686 | 0.6101 | 7.2000e-004 | | 0.0383 | 0.0383 | | 0.0356 | 0.0356 | 0.0000 | 65.9128 | 65.9128 | 0.0181 | 0.0000 | 66.2925 |
| Total | 0.0729 | 0.7686 | 0.6101 | 7.2000e-004 | 0.3691 | 0.0383 | 0.4074 | 0.0559 | 0.0356 | 0.0915 | 0.0000 | 65.9128 | 65.9128 | 0.0181 | 0.0000 | 66.2925 |

3.2 Demolition - 2017

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 | 0.0294 | 0.4626 | 0.3677 | 1.2700e-003 | 0.0292 | 6.4700e-003 | 0.0357 | 8.0100e-003 | 5.9500e-003 | 0.0140 | 0.0000 | 114.4516 | 114.4516 | 8.5000e-004 | 0.0000 | 114.4694 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.0600e-003 | 1.5600e-003 | 0.0162 | 4.0000e-005 | 2.9600e-003 | 3.0000e-005 | 2.9900e-003 | 7.9000e-004 | 3.0000e-005 | 8.1000e-004 | 0.0000 | 2.7789 | 2.7789 | 1.5000e-004 | 0.0000 | 2.7820 |
| Total | 0.0305 | 0.4642 | 0.3840 | 1.3100e-003 | 0.0322 | 6.5000e-003 | 0.0387 | 8.8000e-003 | 5.9800e-003 | 0.0148 | 0.0000 | 117.2304 | 117.2304 | 1.0000e-003 | 0.0000 | 117.2515 |

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 | | | | | 0.1440 | 0.0000 | 0.1440 | 0.0218 | 0.0000 | 0.0218 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 8.5300e-003 | 0.0370 | 0.4289 | 7.2000e-004 | | 1.1400e-003 | 1.1400e-003 | | 1.1400e-003 | 1.1400e-003 | 0.0000 | 65.9127 | 65.9127 | 0.0181 | 0.0000 | 66.2924 |
| Total | 8.5300e-003 | 0.0370 | 0.4289 | 7.2000e-004 | 0.1440 | 1.1400e-003 | 0.1451 | 0.0218 | 1.1400e-003 | 0.0229 | 0.0000 | 65.9127 | 65.9127 | 0.0181 | 0.0000 | 66.2924 |

3.2 Demolition - 2017**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 | 0.0294 | 0.4626 | 0.3677 | 1.2700e-003 | 0.0182 | 6.4700e-003 | 0.0247 | 5.3000e-003 | 5.9500e-003 | 0.0113 | 0.0000 | 114.4516 | 114.4516 | 8.5000e-004 | 0.0000 | 114.4694 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.0600e-003 | 1.5600e-003 | 0.0162 | 4.0000e-005 | 1.6800e-003 | 3.0000e-005 | 1.7000e-003 | 4.7000e-004 | 3.0000e-005 | 5.0000e-004 | 0.0000 | 2.7789 | 2.7789 | 1.5000e-004 | 0.0000 | 2.7820 |
| Total | 0.0305 | 0.4642 | 0.3840 | 1.3100e-003 | 0.0199 | 6.5000e-003 | 0.0264 | 5.7700e-003 | 5.9800e-003 | 0.0118 | 0.0000 | 117.2304 | 117.2304 | 1.0000e-003 | 0.0000 | 117.2515 |

3.3 Site Preparation - 2017**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 | | | | | 0.2848 | 0.0000 | 0.2848 | 0.1505 | 0.0000 | 0.1505 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0726 | 0.7763 | 0.5910 | 5.9000e-004 | | 0.0413 | 0.0413 | | 0.0380 | 0.0380 | 0.0000 | 54.4731 | 54.4731 | 0.0167 | 0.0000 | 54.8236 |
| Total | 0.0726 | 0.7763 | 0.5910 | 5.9000e-004 | 0.2848 | 0.0413 | 0.3261 | 0.1505 | 0.0380 | 0.1885 | 0.0000 | 54.4731 | 54.4731 | 0.0167 | 0.0000 | 54.8236 |

3.3 Site Preparation - 2017

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 | 1.0600e-003 | 1.5600e-003 | 0.0162 | 4.0000e-005 | 2.9600e-003 | 3.0000e-005 | 2.9900e-003 | 7.9000e-004 | 3.0000e-005 | 8.1000e-004 | 0.0000 | 2.7789 | 2.7789 | 1.5000e-004 | 0.0000 | 2.7820 |
| Total | 1.0600e-003 | 1.5600e-003 | 0.0162 | 4.0000e-005 | 2.9600e-003 | 3.0000e-005 | 2.9900e-003 | 7.9000e-004 | 3.0000e-005 | 8.1000e-004 | 0.0000 | 2.7789 | 2.7789 | 1.5000e-004 | 0.0000 | 2.7820 |

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 | | | | | 0.1111 | 0.0000 | 0.1111 | 0.0587 | 0.0000 | 0.0587 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 7.1400e-003 | 0.0309 | 0.3186 | 5.9000e-004 | | 9.5000e-004 | 9.5000e-004 | | 9.5000e-004 | 9.5000e-004 | 0.0000 | 54.4730 | 54.4730 | 0.0167 | 0.0000 | 54.8235 |
| Total | 7.1400e-003 | 0.0309 | 0.3186 | 5.9000e-004 | 0.1111 | 9.5000e-004 | 0.1120 | 0.0587 | 9.5000e-004 | 0.0596 | 0.0000 | 54.4730 | 54.4730 | 0.0167 | 0.0000 | 54.8235 |

3.3 Site Preparation - 2017

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 | 1.0600e-003 | 1.5600e-003 | 0.0162 | 4.0000e-005 | 1.6800e-003 | 3.0000e-005 | 1.7000e-003 | 4.7000e-004 | 3.0000e-005 | 5.0000e-004 | 0.0000 | 2.7789 | 2.7789 | 1.5000e-004 | 0.0000 | 2.7820 |
| Total | 1.0600e-003 | 1.5600e-003 | 0.0162 | 4.0000e-005 | 1.6800e-003 | 3.0000e-005 | 1.7000e-003 | 4.7000e-004 | 3.0000e-005 | 5.0000e-004 | 0.0000 | 2.7789 | 2.7789 | 1.5000e-004 | 0.0000 | 2.7820 |

3.4 Building Construction - 2017

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 | 0.1815 | 1.5447 | 1.0606 | 1.5700e-003 | | 0.1042 | 0.1042 | | 0.0979 | 0.0979 | 0.0000 | 140.0953 | 140.0953 | 0.0345 | 0.0000 | 140.8194 |
| Total | 0.1815 | 1.5447 | 1.0606 | 1.5700e-003 | | 0.1042 | 0.1042 | | 0.0979 | 0.0979 | 0.0000 | 140.0953 | 140.0953 | 0.0345 | 0.0000 | 140.8194 |

3.4 Building Construction - 2017

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 | 0.0000 |
| Vendor | 5.2700e-003 | 0.0536 | 0.0724 | 1.4000e-004 | 3.9500e-003 | 7.9000e-004 | 4.7400e-003 | 1.1300e-003 | 7.2000e-004 | 1.8500e-003 | 0.0000 | 12.6064 | 12.6064 | 9.0000e-005 | 0.0000 | 12.6083 | |
| Worker | 6.6400e-003 | 9.7900e-003 | 0.1019 | 2.4000e-004 | 0.0186 | 1.7000e-004 | 0.0188 | 4.9400e-003 | 1.6000e-004 | 5.1000e-003 | 0.0000 | 17.4605 | 17.4605 | 9.5000e-004 | 0.0000 | 17.4805 | |
| Total | 0.0119 | 0.0634 | 0.1743 | 3.8000e-004 | 0.0225 | 9.6000e-004 | 0.0235 | 6.0700e-003 | 8.8000e-004 | 6.9500e-003 | 0.0000 | 30.0669 | 30.0669 | 1.0400e-003 | 0.0000 | 30.0888 | |

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 | 0.0191 | 0.1304 | 1.0185 | 1.5700e-003 | | 2.3800e-003 | 2.3800e-003 | | 2.3800e-003 | 2.3800e-003 | 0.0000 | 140.0951 | 140.0951 | 0.0345 | 0.0000 | 140.8192 |
| Total | 0.0191 | 0.1304 | 1.0185 | 1.5700e-003 | | 2.3800e-003 | 2.3800e-003 | | 2.3800e-003 | 2.3800e-003 | 0.0000 | 140.0951 | 140.0951 | 0.0345 | 0.0000 | 140.8192 |

3.4 Building Construction - 2017

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 | 5.2700e-003 | 0.0536 | 0.0724 | 1.4000e-004 | 2.5100e-003 | 7.9000e-004 | 3.3000e-003 | 7.7000e-004 | 7.2000e-004 | 1.5000e-003 | 0.0000 | 12.6064 | 12.6064 | 9.0000e-005 | 0.0000 | 12.6083 |
| Worker | 6.6400e-003 | 9.7900e-003 | 0.1019 | 2.4000e-004 | 0.0105 | 1.7000e-004 | 0.0107 | 2.9600e-003 | 1.6000e-004 | 3.1200e-003 | 0.0000 | 17.4605 | 17.4605 | 9.5000e-004 | 0.0000 | 17.4805 |
| Total | 0.0119 | 0.0634 | 0.1743 | 3.8000e-004 | 0.0130 | 9.6000e-004 | 0.0140 | 3.7300e-003 | 8.8000e-004 | 4.6200e-003 | 0.0000 | 30.0669 | 30.0669 | 1.0400e-003 | 0.0000 | 30.0888 |

3.4 Building Construction - 2018

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 | 0.1161 | 1.0119 | 0.7627 | 1.1700e-003 | | 0.0650 | 0.0650 | | 0.0611 | 0.0611 | 0.0000 | 102.9948 | 102.9948 | 0.0252 | 0.0000 | 103.5241 |
| Total | 0.1161 | 1.0119 | 0.7627 | 1.1700e-003 | | 0.0650 | 0.0650 | | 0.0611 | 0.0611 | 0.0000 | 102.9948 | 102.9948 | 0.0252 | 0.0000 | 103.5241 |

3.4 Building Construction - 2018

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 | 3.6800e-003 | 0.0367 | 0.0517 | 1.0000e-004 | 2.9400e-003 | 5.5000e-004 | 3.4900e-003 | 8.4000e-004 | 5.1000e-004 | 1.3400e-003 | 0.0000 | 9.2191 | 9.2191 | 7.0000e-005 | 0.0000 | 9.2205 |
| Worker | 4.4300e-003 | 6.6100e-003 | 0.0686 | 1.8000e-004 | 0.0138 | 1.2000e-004 | 0.0140 | 3.6700e-003 | 1.1000e-004 | 3.7900e-003 | 0.0000 | 12.5076 | 12.5076 | 6.6000e-004 | 0.0000 | 12.5214 |
| Total | 8.1100e-003 | 0.0433 | 0.1203 | 2.8000e-004 | 0.0168 | 6.7000e-004 | 0.0174 | 4.5100e-003 | 6.2000e-004 | 5.1300e-003 | 0.0000 | 21.7267 | 21.7267 | 7.3000e-004 | 0.0000 | 21.7420 |

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 | 0.0142 | 0.0970 | 0.7574 | 1.1700e-003 | | 1.7700e-003 | 1.7700e-003 | | 1.7700e-003 | 1.7700e-003 | 0.0000 | 102.9947 | 102.9947 | 0.0252 | 0.0000 | 103.5240 |
| Total | 0.0142 | 0.0970 | 0.7574 | 1.1700e-003 | | 1.7700e-003 | 1.7700e-003 | | 1.7700e-003 | 1.7700e-003 | 0.0000 | 102.9947 | 102.9947 | 0.0252 | 0.0000 | 103.5240 |

3.4 Building Construction - 2018**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 | 3.6800e-003 | 0.0367 | 0.0517 | 1.0000e-004 | 1.8700e-003 | 5.5000e-004 | 2.4200e-003 | 5.8000e-004 | 5.1000e-004 | 1.0800e-003 | 0.0000 | 9.2191 | 9.2191 | 7.0000e-005 | 0.0000 | 9.2205 |
| Worker | 4.4300e-003 | 6.6100e-003 | 0.0686 | 1.8000e-004 | 7.8300e-003 | 1.2000e-004 | 7.9600e-003 | 2.2000e-003 | 1.1000e-004 | 2.3200e-003 | 0.0000 | 12.5076 | 12.5076 | 6.6000e-004 | 0.0000 | 12.5214 |
| Total | 8.1100e-003 | 0.0433 | 0.1203 | 2.8000e-004 | 9.7000e-003 | 6.7000e-004 | 0.0104 | 2.7800e-003 | 6.2000e-004 | 3.4000e-003 | 0.0000 | 21.7267 | 21.7267 | 7.3000e-004 | 0.0000 | 21.7420 |

3.5 Paving - 2018**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 | 0.0161 | 0.1716 | 0.1449 | 2.2000e-004 | | 9.3900e-003 | 9.3900e-003 | | 8.6400e-003 | 8.6400e-003 | 0.0000 | 20.3687 | 20.3687 | 6.3400e-003 | 0.0000 | 20.5019 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.0161 | 0.1716 | 0.1449 | 2.2000e-004 | | 9.3900e-003 | 9.3900e-003 | | 8.6400e-003 | 8.6400e-003 | 0.0000 | 20.3687 | 20.3687 | 6.3400e-003 | 0.0000 | 20.5019 |

3.5 Paving - 2018

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 | 5.3000e-004 | 7.9000e-004 | 8.1600e-003 | 2.0000e-005 | 1.6400e-003 | 1.0000e-005 | 1.6600e-003 | 4.4000e-004 | 1.0000e-005 | 4.5000e-004 | 0.0000 | 1.4872 | 1.4872 | 8.0000e-005 | 0.0000 | 1.4889 |
| Total | 5.3000e-004 | 7.9000e-004 | 8.1600e-003 | 2.0000e-005 | 1.6400e-003 | 1.0000e-005 | 1.6600e-003 | 4.4000e-004 | 1.0000e-005 | 4.5000e-004 | 0.0000 | 1.4872 | 1.4872 | 8.0000e-005 | 0.0000 | 1.4889 |

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 | 2.7500e-003 | 0.0119 | 0.1693 | 2.2000e-004 | | 3.7000e-004 | 3.7000e-004 | | 3.7000e-004 | 3.7000e-004 | 0.0000 | 20.3687 | 20.3687 | 6.3400e-003 | 0.0000 | 20.5019 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 2.7500e-003 | 0.0119 | 0.1693 | 2.2000e-004 | | 3.7000e-004 | 3.7000e-004 | | 3.7000e-004 | 3.7000e-004 | 0.0000 | 20.3687 | 20.3687 | 6.3400e-003 | 0.0000 | 20.5019 |

3.5 Paving - 2018

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 | 5.3000e-004 | 7.9000e-004 | 8.1600e-003 | 2.0000e-005 | 9.3000e-004 | 1.0000e-005 | 9.5000e-004 | 2.6000e-004 | 1.0000e-005 | 2.8000e-004 | 0.0000 | 1.4872 | 1.4872 | 8.0000e-005 | 0.0000 | 1.4889 |
| Total | 5.3000e-004 | 7.9000e-004 | 8.1600e-003 | 2.0000e-005 | 9.3000e-004 | 1.0000e-005 | 9.5000e-004 | 2.6000e-004 | 1.0000e-005 | 2.8000e-004 | 0.0000 | 1.4872 | 1.4872 | 8.0000e-005 | 0.0000 | 1.4889 |

3.6 Architectural Coating - 2018

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 | 0.8111 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.9900e-003 | 0.0201 | 0.0185 | 3.0000e-005 | | 1.5100e-003 | 1.5100e-003 | | 1.5100e-003 | 1.5100e-003 | 0.0000 | 2.5533 | 2.5533 | 2.4000e-004 | 0.0000 | 2.5584 |
| Total | 0.8141 | 0.0201 | 0.0185 | 3.0000e-005 | | 1.5100e-003 | 1.5100e-003 | | 1.5100e-003 | 1.5100e-003 | 0.0000 | 2.5533 | 2.5533 | 2.4000e-004 | 0.0000 | 2.5584 |

3.6 Architectural Coating - 2018

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 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.1000e-004 | 3.1000e-004 | 3.2600e-003 | 1.0000e-005 | 6.6000e-004 | 1.0000e-005 | 6.6000e-004 | 1.7000e-004 | 1.0000e-005 | 1.8000e-004 | 0.0000 | 0.5949 | 0.5949 | 3.0000e-005 | 0.0000 | 0.5956 | |
| Total | 2.1000e-004 | 3.1000e-004 | 3.2600e-003 | 1.0000e-005 | 6.6000e-004 | 1.0000e-005 | 6.6000e-004 | 1.7000e-004 | 1.0000e-005 | 1.8000e-004 | 0.0000 | 0.5949 | 0.5949 | 3.0000e-005 | 0.0000 | 0.5956 | |

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 | 0.8111 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.0000e-004 | 1.2900e-003 | 0.0183 | 3.0000e-005 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | 0.0000 | 2.5533 | 2.5533 | 2.4000e-004 | 0.0000 | 2.5584 |
| Total | 0.8114 | 1.2900e-003 | 0.0183 | 3.0000e-005 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | 0.0000 | 2.5533 | 2.5533 | 2.4000e-004 | 0.0000 | 2.5584 |

3.6 Architectural Coating - 2018

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 | 2.1000e-004 | 3.1000e-004 | 3.2600e-003 | 1.0000e-005 | 3.7000e-004 | 1.0000e-005 | 3.8000e-004 | 1.0000e-004 | 1.0000e-005 | 1.1000e-004 | 0.0000 | 0.5949 | 0.5949 | 3.0000e-005 | 0.0000 | 0.5956 |
| Total | 2.1000e-004 | 3.1000e-004 | 3.2600e-003 | 1.0000e-005 | 3.7000e-004 | 1.0000e-005 | 3.8000e-004 | 1.0000e-004 | 1.0000e-005 | 1.1000e-004 | 0.0000 | 0.5949 | 0.5949 | 3.0000e-005 | 0.0000 | 0.5956 |

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Transit Subsidy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.2475 | 0.9015 | 3.2716 | 9.2500e-003 | 0.6186 | 0.0133 | 0.6319 | 0.1657 | 0.0123 | 0.1779 | 0.0000 | 696.3425 | 696.3425 | 0.0270 | 0.0000 | 696.9089 |
| Unmitigated | 0.2475 | 0.9015 | 3.2716 | 9.2500e-003 | 0.6186 | 0.0133 | 0.6319 | 0.1657 | 0.0123 | 0.1779 | 0.0000 | 696.3425 | 696.3425 | 0.0270 | 0.0000 | 696.9089 |

4.2 Trip Summary Information

| Land Use | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|------------------------|-------------------------|----------|--------|-------------|------------|
| | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Light Industry | 487.90 | 92.40 | 47.60 | 1,631,820 | 1,631,820 |
| Total | 487.90 | 92.40 | 47.60 | 1,631,820 | 1,631,820 |

4.3 Trip Type Information

| Land Use | Miles | | | Trip % | | | Trip Purpose % | | |
|------------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
| | 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 |
| General Light Industry | 16.60 | 8.40 | 6.90 | 59.00 | 28.00 | 13.00 | 92 | 5 | 3 |

| LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 0.531767 | 0.058060 | 0.178534 | 0.124864 | 0.038964 | 0.006284 | 0.016861 | 0.033134 | 0.002486 | 0.003151 | 0.003685 | 0.000540 | 0.001671 |

5.0 Energy Detail

2.4 Fleet Mix

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 | 469.7971 | 469.7971 | 0.0111 | 2.3000e-003 | 470.7417 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 469.7971 | 469.7971 | 0.0111 | 2.3000e-003 | 470.7417 |
| NaturalGas Mitigated | 7.1000e-003 | 0.0645 | 0.0542 | 3.9000e-004 | | 4.9100e-003 | 4.9100e-003 | | 4.9100e-003 | 4.9100e-003 | 0.0000 | 70.2641 | 70.2641 | 1.3500e-003 | 1.2900e-003 | 70.6917 |
| NaturalGas Unmitigated | 7.1000e-003 | 0.0645 | 0.0542 | 3.9000e-004 | | 4.9100e-003 | 4.9100e-003 | | 4.9100e-003 | 4.9100e-003 | 0.0000 | 70.2641 | 70.2641 | 1.3500e-003 | 1.2900e-003 | 70.6917 |

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 | | | | | |
| General Light Industry | 1.3167e+006 | 7.1000e-003 | 0.0645 | 0.0542 | 3.9000e-004 | | 4.9100e-003 | 4.9100e-003 | | 4.9100e-003 | 4.9100e-003 | 0.0000 | 70.2641 | 70.2641 | 1.3500e-003 | 1.2900e-003 | 70.6917 |
| Total | | 7.1000e-003 | 0.0645 | 0.0542 | 3.9000e-004 | | 4.9100e-003 | 4.9100e-003 | | 4.9100e-003 | 4.9100e-003 | 0.0000 | 70.2641 | 70.2641 | 1.3500e-003 | 1.2900e-003 | 70.6917 |

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 | | | | | |
| General Light Industry | 1.3167e+006 | 7.1000e-003 | 0.0645 | 0.0542 | 3.9000e-004 | | 4.9100e-003 | 4.9100e-003 | | 4.9100e-003 | 4.9100e-003 | 0.0000 | 70.2641 | 70.2641 | 1.3500e-003 | 1.2900e-003 | 70.6917 |
| Total | | 7.1000e-003 | 0.0645 | 0.0542 | 3.9000e-004 | | 4.9100e-003 | 4.9100e-003 | | 4.9100e-003 | 4.9100e-003 | 0.0000 | 70.2641 | 70.2641 | 1.3500e-003 | 1.2900e-003 | 70.6917 |

5.3 Energy by Land Use - Electricity

Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|------------------------|-----------------|-----------------|---------------|--------------------|-----------------|
| Land Use | kWh/yr | MT/yr | | | |
| General Light Industry | 843500 | 469.7971 | 0.0111 | 2.3000e-003 | 470.7417 |
| Total | | 469.7971 | 0.0111 | 2.3000e-003 | 470.7417 |

5.3 Energy by Land Use - Electricity

Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|------------------------|-----------------|-----------------|---------------|--------------------|-----------------|
| Land Use | kWh/yr | MT/yr | | | |
| General Light Industry | 843500 | 469.7971 | 0.0111 | 2.3000e-003 | 470.7417 |
| Total | | 469.7971 | 0.0111 | 2.3000e-003 | 470.7417 |

6.0 Area Detail

6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.3341 | 1.0000e-005 | 9.1000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.7400e-003 | 1.7400e-003 | 0.0000 | 0.0000 | 1.8400e-003 |
| Unmitigated | 0.3341 | 1.0000e-005 | 9.1000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.7400e-003 | 1.7400e-003 | 0.0000 | 0.0000 | 1.8400e-003 |

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 | 0.0811 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.2530 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 9.0000e-005 | 1.0000e-005 | 9.1000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.7400e-003 | 1.7400e-003 | 0.0000 | 0.0000 | 1.8400e-003 |
| Total | 0.3342 | 1.0000e-005 | 9.1000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.7400e-003 | 1.7400e-003 | 0.0000 | 0.0000 | 1.8400e-003 |

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 | | | | | |
| Consumer Products | 0.2530 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 9.0000e-005 | 1.0000e-005 | 9.1000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.7400e-003 | 1.7400e-003 | 0.0000 | 0.0000 | 1.8400e-003 |
| Architectural Coating | 0.0811 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.3342 | 1.0000e-005 | 9.1000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.7400e-003 | 1.7400e-003 | 0.0000 | 0.0000 | 1.8400e-003 |

7.0 Water Detail

7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|-------------|-----------|--------|--------|----------|
| Category | MT/yr | | | |
| Mitigated | 122.5305 | 0.5302 | 0.0130 | 137.6962 |
| Unmitigated | 122.5305 | 0.5302 | 0.0130 | 137.7044 |

7.2 Water by Land Use

Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|------------------------|--------------------|-----------------|---------------|---------------|-----------------|
| Land Use | Mgal | MT/yr | | | |
| General Light Industry | 16.1875 / 0 | 122.5305 | 0.5302 | 0.0130 | 137.7044 |
| Total | | 122.5305 | 0.5302 | 0.0130 | 137.7044 |

7.2 Water by Land Use

Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|------------------------|--------------------|-----------------|---------------|---------------|-----------------|
| Land Use | Mgal | MT/yr | | | |
| General Light Industry | 16.1875 / 0 | 122.5305 | 0.5302 | 0.0130 | 137.6962 |
| Total | | 122.5305 | 0.5302 | 0.0130 | 137.6962 |

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

| | Total CO2 | CH4 | N2O | CO2e |
|-------------|-----------|--------|--------|---------|
| | MT/yr | | | |
| Mitigated | 17.6196 | 1.0413 | 0.0000 | 39.4867 |
| Unmitigated | 17.6196 | 1.0413 | 0.0000 | 39.4867 |

8.2 Waste by Land Use

Unmitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|------------------------|----------------|----------------|---------------|---------------|----------------|
| Land Use | tons | MT/yr | | | |
| General Light Industry | 86.8 | 17.6196 | 1.0413 | 0.0000 | 39.4867 |
| Total | | 17.6196 | 1.0413 | 0.0000 | 39.4867 |

Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|------------------------|----------------|----------------|---------------|---------------|----------------|
| Land Use | tons | MT/yr | | | |
| General Light Industry | 86.8 | 17.6196 | 1.0413 | 0.0000 | 39.4867 |
| Total | | 17.6196 | 1.0413 | 0.0000 | 39.4867 |

9.0 Operational Offroad

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

10.0 Vegetation

Bridges/TPSS/Miscellaneous

ESFV Bridges/TPSS/Miscellaneous
Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|--------------------------------|-------|----------|-------------|--------------------|------------|
| Enclosed Parking with Elevator | 50.00 | 1000sqft | 1.15 | 50,000.00 | 0 |

1.2 Other Project Characteristics

| | | | | | |
|--------------------------------|---|--------------------------------|-------|----------------------------------|-------|
| Urbanization | Urban | Wind Speed (m/s) | 2.2 | Precipitation Freq (Days) | 33 |
| Climate Zone | 12 | | | Operational Year | 2014 |
| Utility Company | Los Angeles Department of Water & Power | | | | |
| CO2 Intensity (lb/MWhr) | 1227.89 | CH4 Intensity (lb/MWhr) | 0.029 | N2O Intensity (lb/MWhr) | 0.006 |

1.3 User Entered Comments & Non-Default Data

Project Characteristics - For bridges, TPSS installation, and miscellaneous construction activities

Land Use - Assumes a maximum of 9 TPSS units (1 per mile), and the pedestrian/LRT/Metrolink bridges

Construction Phase - Assumes 12-month construction period starting June 2017, 6-day work week

Off-road Equipment - Defaults

Trips and VMT - assumes 1 daily cement truck

Energy Use -

Construction Off-road Equipment Mitigation - Water exposed areas three times daily

Clean paved roads

Tier 4 Final equipment

| Table Name | Column Name | Default Value | New Value |
|-------------------------|--------------------------------|---------------|--------------|
| tblConstDustMitigation | CleanPavedRoadPercentReduction | 0 | 50 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstructionPhase | NumDays | 200.00 | 313.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |

2.0 Emissions Summary

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 | 0.2387 | 1.0000e-005 | 6.7000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.2400e-003 | 1.2400e-003 | 0.0000 | 0.0000 | 1.3200e-003 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 187.6960 | 187.6960 | 4.4300e-003 | 9.2000e-004 | 188.0735 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.2387 | 1.0000e-005 | 6.7000e-004 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 187.6973 | 187.6973 | 4.4300e-003 | 9.2000e-004 | 188.0748 |

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 | 0.2387 | 1.0000e-005 | 6.7000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.2400e-003 | 1.2400e-003 | 0.0000 | 0.0000 | 1.3200e-003 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 187.6960 | 187.6960 | 4.4300e-003 | 9.2000e-004 | 188.0735 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.2387 | 1.0000e-005 | 6.7000e-004 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 187.6973 | 187.6973 | 4.4300e-003 | 9.2000e-004 | 188.0748 |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | 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 |

3.0 Construction Detail

Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|--------------|-----------------------|-----------------------|------------|-----------|---------------|----------|-------------------|
| 1 | Building Construction | Building Construction | 6/1/2017 | 5/31/2018 | 6 | 313 | |

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|-----------------------|---------------------------|--------|-------------|-------------|-------------|
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Cranes | 1 | 6.00 | 226 | 0.29 |
| Building Construction | Forklifts | 1 | 6.00 | 89 | 0.20 |
| Building Construction | Tractors/Loaders/Backhoes | 1 | 6.00 | 97 | 0.37 |
| Building Construction | Welders | 3 | 8.00 | 46 | 0.45 |

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 |
|-----------------------|-------------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|----------------------|----------------------|-----------------------|
| Building Construction | 7 | 21.00 | 8.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Clean Paved Roads

3.2 Building Construction - 2017**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 | 0.2703 | 1.7485 | 1.3095 | 2.0100e-003 | | 0.1122 | 0.1122 | | 0.1082 | 0.1082 | 0.0000 | 168.8608 | 168.8608 | 0.0354 | 0.0000 | 169.6049 |
| Total | 0.2703 | 1.7485 | 1.3095 | 2.0100e-003 | | 0.1122 | 0.1122 | | 0.1082 | 0.1082 | 0.0000 | 168.8608 | 168.8608 | 0.0354 | 0.0000 | 169.6049 |

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 | 6.0000e-003 | 0.0610 | 0.0823 | 1.6000e-004 | 4.4900e-003 | 9.0000e-004 | 5.3900e-003 | 1.2800e-003 | 8.2000e-004 | 2.1100e-003 | 0.0000 | 14.3401 | 14.3401 | 1.1000e-004 | 0.0000 | 14.3423 |
| Worker | 7.5200e-003 | 0.0111 | 0.1154 | 2.7000e-004 | 0.0211 | 1.9000e-004 | 0.0213 | 5.5900e-003 | 1.8000e-004 | 5.7700e-003 | 0.0000 | 19.7762 | 19.7762 | 1.0800e-003 | 0.0000 | 19.7989 |
| Total | 0.0135 | 0.0721 | 0.1978 | 4.3000e-004 | 0.0256 | 1.0900e-003 | 0.0266 | 6.8700e-003 | 1.0000e-003 | 7.8800e-003 | 0.0000 | 34.1164 | 34.1164 | 1.1900e-003 | 0.0000 | 34.1412 |

3.2 Building Construction - 2017

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 | 0.0267 | 0.3392 | 1.1970 | 2.0100e-003 | | 2.7600e-003 | 2.7600e-003 | | 2.7600e-003 | 2.7600e-003 | 0.0000 | 168.8606 | 168.8606 | 0.0354 | 0.0000 | 169.6047 |
| Total | 0.0267 | 0.3392 | 1.1970 | 2.0100e-003 | | 2.7600e-003 | 2.7600e-003 | | 2.7600e-003 | 2.7600e-003 | 0.0000 | 168.8606 | 168.8606 | 0.0354 | 0.0000 | 169.6047 |

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 | 6.0000e-003 | 0.0610 | 0.0823 | 1.6000e-004 | 2.8600e-003 | 9.0000e-004 | 3.7600e-003 | 8.8000e-004 | 8.2000e-004 | 1.7000e-003 | 0.0000 | 14.3401 | 14.3401 | 1.1000e-004 | 0.0000 | 14.3423 |
| Worker | 7.5200e-003 | 0.0111 | 0.1154 | 2.7000e-004 | 0.0119 | 1.9000e-004 | 0.0121 | 3.3500e-003 | 1.8000e-004 | 3.5300e-003 | 0.0000 | 19.7762 | 19.7762 | 1.0800e-003 | 0.0000 | 19.7989 |
| Total | 0.0135 | 0.0721 | 0.1978 | 4.3000e-004 | 0.0148 | 1.0900e-003 | 0.0159 | 4.2300e-003 | 1.0000e-003 | 5.2300e-003 | 0.0000 | 34.1164 | 34.1164 | 1.1900e-003 | 0.0000 | 34.1412 |

3.2 Building Construction - 2018**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 | 0.1679 | 1.1256 | 0.8993 | 1.4300e-003 | | 0.0685 | 0.0685 | | 0.0661 | 0.0661 | 0.0000 | 119.1967 | 119.1967 | 0.0239 | 0.0000 | 119.6993 |
| Total | 0.1679 | 1.1256 | 0.8993 | 1.4300e-003 | | 0.0685 | 0.0685 | | 0.0661 | 0.0661 | 0.0000 | 119.1967 | 119.1967 | 0.0239 | 0.0000 | 119.6993 |

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 | 4.0000e-003 | 0.0398 | 0.0561 | 1.1000e-004 | 3.1900e-003 | 6.0000e-004 | 3.7900e-003 | 9.1000e-004 | 5.5000e-004 | 1.4600e-003 | 0.0000 | 10.0187 | 10.0187 | 7.0000e-005 | 0.0000 | 10.0202 |
| Worker | 4.7900e-003 | 7.1500e-003 | 0.0743 | 1.9000e-004 | 0.0150 | 1.3000e-004 | 0.0151 | 3.9700e-003 | 1.2000e-004 | 4.1000e-003 | 0.0000 | 13.5338 | 13.5338 | 7.1000e-004 | 0.0000 | 13.5488 |
| Total | 8.7900e-003 | 0.0470 | 0.1304 | 3.0000e-004 | 0.0182 | 7.3000e-004 | 0.0189 | 4.8800e-003 | 6.7000e-004 | 5.5600e-003 | 0.0000 | 23.5525 | 23.5525 | 7.8000e-004 | 0.0000 | 23.5690 |

3.2 Building Construction - 2018

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 | 0.0190 | 0.2410 | 0.8503 | 1.4300e-003 | | 1.9600e-003 | 1.9600e-003 | | 1.9600e-003 | 1.9600e-003 | 0.0000 | 119.1966 | 119.1966 | 0.0239 | 0.0000 | 119.6992 |
| Total | 0.0190 | 0.2410 | 0.8503 | 1.4300e-003 | | 1.9600e-003 | 1.9600e-003 | | 1.9600e-003 | 1.9600e-003 | 0.0000 | 119.1966 | 119.1966 | 0.0239 | 0.0000 | 119.6992 |

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 | 4.0000e-003 | 0.0398 | 0.0561 | 1.1000e-004 | 2.0300e-003 | 6.0000e-004 | 2.6300e-003 | 6.3000e-004 | 5.5000e-004 | 1.1800e-003 | 0.0000 | 10.0187 | 10.0187 | 7.0000e-005 | 0.0000 | 10.0202 |
| Worker | 4.7900e-003 | 7.1500e-003 | 0.0743 | 1.9000e-004 | 8.4800e-003 | 1.3000e-004 | 8.6100e-003 | 2.3800e-003 | 1.2000e-004 | 2.5100e-003 | 0.0000 | 13.5338 | 13.5338 | 7.1000e-004 | 0.0000 | 13.5488 |
| Total | 8.7900e-003 | 0.0470 | 0.1304 | 3.0000e-004 | 0.0105 | 7.3000e-004 | 0.0112 | 3.0100e-003 | 6.7000e-004 | 3.6900e-003 | 0.0000 | 23.5525 | 23.5525 | 7.8000e-004 | 0.0000 | 23.5690 |

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

4.2 Trip Summary Information

| Land Use | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|--------------------------------|-------------------------|----------|--------|-------------|------------|
| | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Enclosed Parking with Elevator | 0.00 | 0.00 | 0.00 | | |
| Total | 0.00 | 0.00 | 0.00 | | |

4.3 Trip Type Information

| Land Use | Miles | | | Trip % | | | Trip Purpose % | | |
|--------------------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
| | 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 |
| Enclosed Parking with Elevator | 16.60 | 8.40 | 6.90 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |

| LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 0.535275 | 0.058759 | 0.178478 | 0.127034 | 0.038632 | 0.006246 | 0.015618 | 0.028471 | 0.002426 | 0.003171 | 0.003696 | 0.000547 | 0.001645 |

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

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 | | | | | | |
| Enclosed Parking with Elevator | 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 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

5.3 Energy by Land Use - Electricity

Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|--------------------------------|-----------------|-----------------|--------------------|--------------------|-----------------|
| Land Use | kWh/yr | MT/yr | | | |
| Enclosed Parking with Elevator | 337000 | 187.6960 | 4.4300e-003 | 9.2000e-004 | 188.0735 |
| Total | | 187.6960 | 4.4300e-003 | 9.2000e-004 | 188.0735 |

5.3 Energy by Land Use - Electricity

Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|--------------------------------|-----------------|-----------------|--------------------|--------------------|-----------------|
| Land Use | kWh/yr | MT/yr | | | |
| Enclosed Parking with Elevator | 337000 | 187.6960 | 4.4300e-003 | 9.2000e-004 | 188.0735 |
| Total | | 187.6960 | 4.4300e-003 | 9.2000e-004 | 188.0735 |

6.0 Area Detail

6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 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 | 0.2387 | 1.0000e-005 | 6.7000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.2400e-003 | 1.2400e-003 | 0.0000 | 0.0000 | 1.3200e-003 |
| Unmitigated | 0.2387 | 1.0000e-005 | 6.7000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.2400e-003 | 1.2400e-003 | 0.0000 | 0.0000 | 1.3200e-003 |

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 | 0.0579 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.1807 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 7.0000e-005 | 1.0000e-005 | 6.7000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.2400e-003 | 1.2400e-003 | 0.0000 | 0.0000 | 1.3200e-003 |
| Total | 0.2387 | 1.0000e-005 | 6.7000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.2400e-003 | 1.2400e-003 | 0.0000 | 0.0000 | 1.3200e-003 |

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 | 0.0579 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.1807 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 7.0000e-005 | 1.0000e-005 | 6.7000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.2400e-003 | 1.2400e-003 | 0.0000 | 0.0000 | 1.3200e-003 |
| Total | 0.2387 | 1.0000e-005 | 6.7000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.2400e-003 | 1.2400e-003 | 0.0000 | 0.0000 | 1.3200e-003 |

7.0 Water Detail

7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|-------------|-----------|--------|--------|--------|
| Category | MT/yr | | | |
| Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

7.2 Water by Land Use

Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|--------------------------------|--------------------|---------------|---------------|---------------|---------------|
| Land Use | Mgal | MT/yr | | | |
| Enclosed Parking with Elevator | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

7.2 Water by Land Use

Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|--------------------------------|--------------------|---------------|---------------|---------------|---------------|
| Land Use | Mgal | MT/yr | | | |
| Enclosed Parking with Elevator | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|--------------------------------|----------------|---------------|---------------|---------------|---------------|
| Land Use | tons | MT/yr | | | |
| Enclosed Parking with Elevator | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|--------------------------------|----------------|---------------|---------------|---------------|---------------|
| Land Use | tons | MT/yr | | | |
| Enclosed Parking with Elevator | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

9.0 Operational Offroad

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

10.0 Vegetation
