

## **Appendix D-4**

### **Attachment C: Air Quality Calculations**

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## **Assumptions and Calculations for Short-Term Construction Related Emissions**

An air quality and greenhouse gas (GHG) analysis was prepared to evaluate the construction criteria pollutant and GHG emissions associated with compliance with the Proposed Amendments. The purpose of this analysis is to determine if construction activities associated with the Proposed Amendments would result in a significant impact on air quality and GHGs under the California Environmental Quality Act (CEQA).

The Proposed Amendments would require the installation of technologies at ports, harbors and marinas in California. The intent of the Proposed Amendments is to reduce diesel particulate matter (DPM), particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>), nitrogen oxide (NO<sub>x</sub>), reactive organic gas (ROG), and GHGs emitted by commercial harbor craft (CHC). Although the Proposed Amendments would reduce air pollution at ports, harbors and marinas, construction activities associated with the installation of shore-based power systems has the potential to temporarily elevate criteria pollutant and GHG emissions.

Construction criteria pollutant and GHG emissions were quantified using the California Emissions Estimator Model (CalEEMod) version 2020.4.0 developed by the California Air Pollution Officers Association (CAPCOA). Criteria pollutant and GHG emissions estimates for each scenario, as well as assumptions used, are summarized under Sections 1 through 2 below. All CalEEMod outputs can be found in Section 4.

The construction and methods used satisfy the requirements of the Proposed Amendments are site-specific and dependent on many factors such as geography, location, and type of activity. There is considerable uncertainty of the construction methods that would be used for the installation of technologies necessary to comply with the Proposed Amendments. As a result of the uncertainty for each site-specific project, construction criteria pollutant and GHG emissions were modeled under two reasonably foreseeable conservative scenarios:

1. Modification of an existing marina/harbor facility for shore power capability
2. New construction of 1–2-megawatt (MW) charging infrastructure for a zero-emission (ZE) short-run ferry

The modeled construction criteria pollutant and GHG emissions were compared to significance thresholds adopted by California Air Districts that contain marinas or harbors affected by the Proposed Amendments to determine if the construction activities associated with the Proposed Amendments would result in a significant impact on air quality and GHG emissions. As shown in Section 3, modeled criteria pollutant and GHGs emissions would not exceed any of the Air Districts' significance thresholds and are not expected to result in a significant impact under CEQA.

# 1. Modification of an Existing Marina/Harbor Facility for Shore Power Capability

## A. Description

For the analysis of construction criteria pollutant and GHG emissions associated with the modification of an existing marina or harbor installing shore power, a hypothetical project was created by California Air Resources Board (CARB) staff. The analysis is a representation of new construction of shore power infrastructure located on a typical California marina or harbor. Some marinas and harbors in California already provide shore power for vessels and construction at these facilities would be considered to be minimal in comparison to the construction of an entirely new charging infrastructure.

Shore power is required for all harbor craft when visiting a facility that receives over the visit threshold per year; CARB staff anticipates nearly all facilities with harbor craft visiting to be subject to shore power requirements. To comply with the Proposed Amendments, the construction of shore power infrastructure may be needed. Approximately 75% of the 276 affected CHC facilities already use shore power in at least some capacity. CARB staff anticipates that approximately half of the remaining 25% of facilities (ports, marinas and harbors) across California (35 facilities total) would install marina or harbor shore power infrastructure by January 1, 2024 in response to the Proposed Amendments. CARB staff further anticipates that the other approximately 241 facilities that are currently equipped for at least some level of shore power capacity would undertake some level of further shore power capacity expansions. CARB staff estimate that approximately three-quarters of harbor craft are already equipped with on-vessel shore power capabilities, and therefore, many marinas and harbor across California already have installed shore power systems. This scenario provides a conservative estimate of construction related criteria pollutant and GHG emissions by assuming the marina or harbor will need to install all new infrastructure.

Figure D-4a shows an undisclosed location in California used as a representation of a marina/harbor location where an installation may occur. Figure D-4a displays the closest California electrical substation according to the California Energy Commission (CEC).<sup>1</sup> The red line represents the assumed conduit line required for the construction project. Using Google Earth, the line's distance is measured to be approximately 3,573 feet (ft). The line direction follows existing roads and avoids private properties. It is reasonable to assume power from the substation will need to be stepped down (from high voltage [115 kV] to a lower voltage [250 V]) and new electrical conduit lines will be installed underground a location near the marina/harbor.

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<sup>1</sup> California Energy Commission, California Electric Infrastructure App, 2021, last accessed August 10, 2021, <https://cecgis-caenergy.opendata.arcgis.com/apps/california-electric-infrastructure-app/explore>.

Figure D-4a: Marina/Harbor Shore Power Scenario<sup>2</sup>



## B. Modeling Assumptions

By using completed projects and projects still under development as examples, and by consulting with industry experts, staff developed the construction schedule shown in Table D-4a.<sup>3,4</sup> As shown, it was assumed that construction would consist of three phases: site preparation, trenching, and system installations. To approximate worst-case construction on- and off-road emissions factors, it was assumed for this analysis that construction would begin the year 2021. Actual emissions from construction equipment are expected to become cleaner over time as more stringent emissions reductions will be required from existing and newly adopted Regulations.

| Phase                  | Start Date        | End Date          | Total Days | Work Days |
|------------------------|-------------------|-------------------|------------|-----------|
| Site Preparation       | January 4, 2021   | January 25, 2021  | 22         | 16        |
| Trenching <sup>5</sup> | January 26, 2021  | February 22, 2021 | 28         | 20        |
| System Installations   | February 23, 2021 | April 5, 2021     | 42         | 30        |

<sup>2</sup> Google Earth Pro, ZE Ferry Google Earth Image

<sup>3</sup> Pacific Tugboat Service, Shore Power Installation, 2012

<sup>4</sup> Chris Dolan, The Docks Expo, Planning for Power at a Marina – from Equipment to Layout to Costs, December 6, 2018, last accessed August 10, 2021, <https://docksexpo.com/wp-content/uploads/2018/12/The-Dock-Expo-Chris-Dolan-12-6-18.pdf>.

<sup>5</sup> Trenching assumed to be 3,573 at 200 ft per day.

The assumed quantity, hours of use, horsepower and load factors for each off-road equipment used during construction can be found in Tables D-4b through D-4d. The hours of use (i.e., hours per day), horsepower and load factors are based on defaults obtained from CalEEMod, and the number and type of off-road construction equipment are based on approximations by CARB staff.

The assumed daily one-way vendor and worker trips and total one-way haul trips per construction phase can be found in Table D-4e. The trip lengths are based on the U.S. Department of Transportation’s estimated average commuter trip length. Trip frequency approximations were derived by CARB staff based on the type of equipment and materials that would be needed to construct marina/harbor shore power infrastructure. Examples of infrastructure needed for shore power would include items such as, power cables, step-down transformer, wires, circuits, power pedestals, etc.<sup>6</sup>

**Table D-4b: Phase 1: Site Prep – Construction Equipment**

| Equipment                 | Unit Amount | Hours/Day | Horse Power (HP) |
|---------------------------|-------------|-----------|------------------|
| Graders                   | 1           | 6         | 187              |
| Tractors/Loaders/Backhoes | 1           | 6         | 97               |

**Table D-4c: Phase 2 - Trenching**

| Equipment                 | Unit Amount | Hours/Day | Horse Power (HP) |
|---------------------------|-------------|-----------|------------------|
| Trenchers                 | 2           | 6         | 78               |
| Tractors/Loaders/Backhoes | 1           | 8         | 97               |
| Plate Compactors          | 1           | 8         | 8                |
| Generator Sets            | 1           | 8         | 84               |
| Concrete/Industrial Saws  | 1           | 8         | 81               |
| Cement and Mortar Mixers  | 1           | 8         | 9                |
| Bore/Drill Rigs           | 1           | 8         | 221              |

**Table D-4d: Phase 3 - Installation**

| Equipment                 | Unit Amount | Hours/Day | Horse Power (HP) |
|---------------------------|-------------|-----------|------------------|
| Tractors/Loaders/Backhoes | 1           | 8         | 97               |
| Air Compressor            | 1           | 8         | 78               |
| Forklifts                 | 1           | 8         | 89               |
| Generator Sets            | 1           | 8         | 84               |

<sup>6</sup> Pacific Tugboat Service, Shore Power Installation, 2012

**Table D-4e: Construction Worker and Haul Trips:**

| Phase        | Daily One-Way Worker Trips | Daily One-Way Vendor Trips | Total One-Way Haul Trips | Worker Trip Length (miles) <sup>7</sup> | Vendor Trip Length (miles) | Hauling Trip Length (miles) |
|--------------|----------------------------|----------------------------|--------------------------|---|----------------------------|-----------------------------|
| Site Prep    | 10                         | 0                          | 5                        | 15                                      | 15                         | 15                          |
| Trenching    | 10                         | 0                          | 4                        | 15                                      | 15                         | 15                          |
| Installation | 10                         | 0                          | 10                       | 15                                      | 15                         | 15                          |

## 2. New Construction of 1–2-MW Charging Infrastructure for a ZE Short-Run Ferry

### A. Description

For the analysis of construction emissions associated with ZE short run ferries, a representative project was created by CARB staff. The analysis is a depiction of new construction of 1–2-MW charging infrastructure required for the operation of a ZE short-run ferry. To comply with the Proposed Amendments, the construction of rapid charging and shore power infrastructure may be needed. CARB staff has identified 16 short-run ferries operating seven locations in California that will need to transition to ZE operations by 2026. The Proposed Amendments would also establish requirements for new build excursion vessels to be capable of partial zero-emission operations, also would establish pathways for vessel owners/operators to introduce additional ZE vessel operations into their fleets by the end of 2034. This scenario provides a conservative estimate of construction related-emissions infrastructure to support the operation of ZE ferries and new ZE excursion vessels.

Figure D-4b shows an undisclosed location in California used as a representation of a remote ferry location where an installation may occur. This location was selected as the most conservative project example due to its isolated nature. In general, the majority of California’s ZE ferry and ZE excursion vessel operations will be located in developed areas and assumed construction emissions will be less than those for remote locations.

Figure D-4b displays the closest California electrical substation according to the CEC.<sup>8</sup> The red line represents the assumed conduit line required for the construction project. Using Google Earth, the line’s distance is measured to be approximately 6,034 ft. The line direction follows existing roads and avoids private properties. It is reasonable to

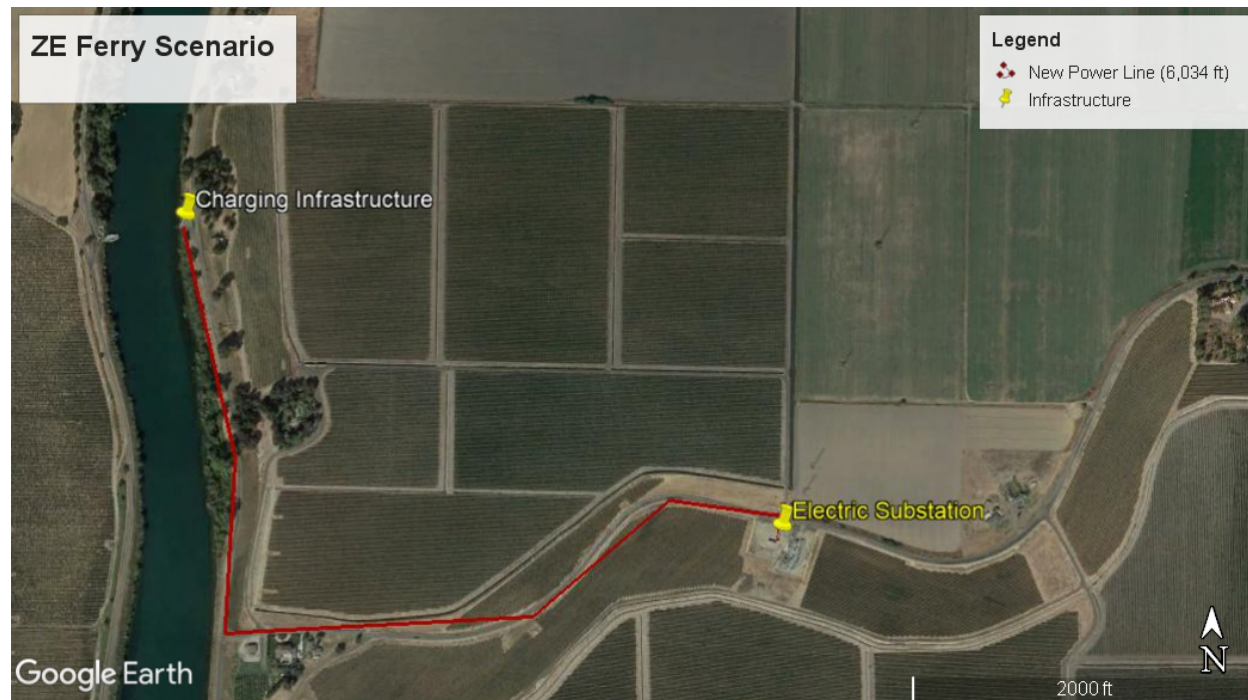
<sup>7</sup> U.S. Department of Transportation, Summary of Travel Trends: 2017 National Household Travel Survey, 2017, last accessed August 10, 2021, [https://www.fhwa.dot.gov/policyinformation/documents/2017\\_nhts\\_summary\\_travel\\_trends.pdf](https://www.fhwa.dot.gov/policyinformation/documents/2017_nhts_summary_travel_trends.pdf).

<sup>8</sup> California Energy Commission, California Electric Infrastructure App, 2021, last accessed August 10, 2021, <https://cecgis-caenergy.opendata.arcgis.com/apps/california-electric-infrastructure-app/explore>.



assume power from the substation will need to be stepped down (from high voltage [115 kV] to a lower voltage [6.6 kV]) and new electrical conduit lines will be installed underground to the location of the rapid charging and shore power infrastructure.

**Figure D-4b: New Construction of 1–2-MW Charging Infrastructure<sup>9</sup>**



## B. Modeling Assumptions

By using completed projects and projects still under development as examples, and by consulting with industry experts, staff developed the construction schedule shown in Table D-4f.<sup>10,11</sup> As shown, it was assumed that construction would consist of three phases: site preparation, trenching and system installation. To approximate worst-case construction on- and off-road emission factors, it was assumed for this analysis that construction would begin the year 2021. Actual emissions from construction equipment are expected to become cleaner over time as more stringent emissions reductions are required from existing and newly adopted regulations.

<sup>9</sup> Google Earth Pro, Marina Dock Google Earth Image

<sup>10</sup> Washington State Ferries, System Electrification Plan, December 2020, last accessed August 10, 2021, <https://wsdot.wa.gov/sites/default/files/2021/01/13/WSF-SystemElectrificationPlan-December2020.pdf>.

<sup>11</sup> Skagit County Public Works Mount Vernon, Washington, Guemes Island Ferry Replacement Preliminary Design Report, February 12, 2021, last accessed August 10, 2021, <https://www.skagitcounty.net/PublicWorksFerryReplacement/Documents/042120Update/01%20-%20Preliminary%20Design%20Report.pdf>.

**Table D-4f: Construction Schedule**

| Phase                   | Start Date       | End Date         | Total Days | Work Days |
|-------------------------|------------------|------------------|------------|-----------|
| Site Preparation        | January 4, 2021  | January 25, 2021 | 22         | 16        |
| Trenching <sup>12</sup> | January 26, 2021 | March 8, 2021    | 42         | 30        |
| System Installation     | March 9, 2021    | May 10, 2021     | 63         | 45        |

The assumed quantity, hours of use, horsepower and load factors for off-road equipment used during the construction can be found in Tables D-4g through D-4i. The hours of use (i.e., hours per day), horsepower and load factors are based on CalEEMod defaults, and the number and type of off-road construction equipment are based on approximations by CARB staff.

The assumed daily one-way vendor and worker trips and total one-way haul trips per construction phase can be found in Table B-10. The trip lengths are based on the U.S. Department of Transportation’s estimated average commuter trip length and doubled to represent a remote location. Trip frequency approximations were derived by CARB staff based on the type of equipment and materials that would be needed to construct 1-2 MW charging and shore power infrastructure. Examples of the infrastructure needed for ZE charging of a ferry would be items such as, power cables, step-down transformer, battery management system, shore power connection cables and shore power circuit protectors.<sup>13</sup>

**Table D-4g: Phase 1: Site Prep – Construction Equipment**

| Equipment                 | Unit Amount | Hours/Day | Horse Power (HP) |
|---------------------------|-------------|-----------|------------------|
| Graders                   | 1           | 6         | 187              |
| Tractors/Loaders/Backhoes | 1           | 6         | 97               |

**Table D-4h: Phase 2 - Trenching**

| Equipment                 | Unit Amount | Hours/Day | Horse Power (HP) |
|---------------------------|-------------|-----------|------------------|
| Trenchers                 | 2           | 6         | 78               |
| Tractors/Loaders/Backhoes | 1           | 8         | 97               |
| Plate Compactors          | 1           | 8         | 8                |
| Generator Sets            | 1           | 8         | 84               |
| Concrete/Industrial Saws  | 1           | 8         | 81               |
| Cement and Mortar Mixers  | 1           | 8         | 9                |
| Bore/Drill Rigs           | 1           | 8         | 221              |

<sup>12</sup> Trenching assumed to be 6,034 at 200 ft per day.

<sup>13</sup> Skagit County Public Works Mount Vernon, Washington, Guemes Island Ferry Replacement Preliminary Design Report, February 12, 2021, last accessed August 10, 2021, <https://www.skagitcounty.net/PublicWorksFerryReplacement/Documents/042120Update/01%20-%20Preliminary%20Design%20Report.pdf>.

**Table D-4i: Phase 3 - Installation**

| Equipment                 | Unit Amount | Hours/Day | Horse Power (HP) |
|---------------------------|-------------|-----------|------------------|
| Tractors/Loaders/Backhoes | 1           | 8         | 97               |
| Air Compressor            | 1           | 8         | 78               |
| Forklifts                 | 1           | 8         | 89               |
| Generator Sets            | 1           | 8         | 84               |

**Table D-4j: Construction Worker and Haul Trips**

| Phase        | Daily One-Way Worker Trips | Daily One-Way Vendor Trips | Total One-Way Haul Trips | Worker Trip Length <sup>14</sup> (miles) | Vendor Trip Length (miles) | Hauling Trip Length (miles) |
|--------------|----------------------------|----------------------------|--------------------------|--|----------------------------|-----------------------------|
| Site Prep    | 10                         | 0                          | 5                        | 30                                       | 30                         | 30                          |
| Trenching    | 20                         | 0                          | 4                        | 30                                       | 30                         | 30                          |
| Installation | 10                         | 0                          | 10                       | 30                                       | 30                         | 30                          |

### 3. Modeled Emissions Compared to Local Air District Significance Thresholds

Under CEQA, to determine the significance of environmental effects, each public agency is encouraged to develop and publish thresholds of significance as part of their environmental review process. A threshold of significance is an identifiable quantitative, qualitative, or performance level of a particular environmental effect. Compliance with the threshold of significance means the environmental effects resulting from the project, or here the Proposed Amendments, normally will be determined to be less than significant. Noncompliance with the threshold of significance, means the environmental effects will commonly be determined to be significant by the lead agency. In the following tables, CARB staff has compared published thresholds of significance for Air Districts where the Proposed Amendments may be in effect (i.e., locations of marinas and harbors).

Implementation of the Proposed Amendments would require the modification and construction of infrastructure throughout California. Areas projected to most impacted by the Proposed Amendments are Lake Tahoe, Northern Central Coast, North Coast, Sacramento Valley, San Diego County, San Francisco Bay, San Joaquin Valley, South Central Coast and South Coast. The air districts located within these areas and their

<sup>14</sup> U.S. Department of Transportation, Summary of Travel Trends: 2017 National Household Travel Survey, 2017, last accessed August 10, 2021, [https://www.fhwa.dot.gov/policyinformation/documents/2017\\_nhts\\_summary\\_travel\\_trends.pdf](https://www.fhwa.dot.gov/policyinformation/documents/2017_nhts_summary_travel_trends.pdf).

associate criteria pollutant and GHG CEQA significance thresholds are summarized in Table D-4k. See footnote in the table for defined acronyms for units

**Table D-4k: Criteria Pollutant and Greenhouse Gas Significance Thresholds**

| Air District                               | ROG     | NOx     | CO      | SO2     | PM10              | PM2.5             | CO2e      |
|--|---------|---------|---------|---------|-------------------|-------------------|-----------|
| Placer County APCD <sup>15</sup>           | 82 ppd  | 82 ppd  | None    | None    | 82 ppd            | None              | None      |
| El Dorado County AQMD <sup>16</sup>        | 82 ppd  | 82 ppd  | None    | None    | 82 ppd            | None              | None      |
| Mendocino County AQMD <sup>17</sup>        | 54 appd | 54 appd | None    | None    | 82 appd           | 54 appd           | none      |
| Sacramento Metropolitan AQMD <sup>18</sup> | None    | 85 ppd  | None    | None    | 80 ppd/<br>15 tpy | 82 ppd/<br>15 tpy | 1100 mtpy |
| San Diego APCD <sup>19</sup>               | None    | 250 ppd | 550 ppd | 250 ppd | 100 ppd           | 67 ppd            | none      |
| Bay Area AQMD <sup>20</sup>                | 54 appd | 54 appd | None    | None    | 82 appd           | 54 appd           | None      |
| San Joaquin Valley APCD <sup>21</sup>      | 10 tpy  | 10 tpy  | 100 tpy | 27 tpy  | 15 tpy            | 15 tpy            | None      |

<sup>15</sup> Placer County APCD, 2017 CEQA Handbook, Chapter 2 Thresholds of Significance, 2017, last accessed August 10, 2021, <https://www.placer.ca.gov/DocumentCenter/View/2047/Chapter-2-Thresholds-of-Significance-PDF>.

<sup>16</sup> El Dorado County APCD, CEQA Guide First Edition, Chapter 3 Thresholds of Significance, February 2002, last accessed August 10, 2021, [https://www.edcgov.us/Government/AirQualityManagement/documents/Chapter3\\_RF6.pdf](https://www.edcgov.us/Government/AirQualityManagement/documents/Chapter3_RF6.pdf).

<sup>17</sup> Mendocino County AQMD, Adopted Air Quality CEQA Thresholds of Significance, June 2, 2010, last accessed August 10, 2021, [http://www.co.mendocino.ca.us/aqmd/pdf\\_files/MCAQMDCEQARecomendations.pdf](http://www.co.mendocino.ca.us/aqmd/pdf_files/MCAQMDCEQARecomendations.pdf).

<sup>18</sup> Sacramento Metropolitan AQMD, SMAQMD Thresholds of Significance Table, April 2020, last accessed August 10, 2021, <http://www.airquality.org/LandUseTransportation/Documents/CH2ThresholdsTable4-2020.pdf>.

<sup>19</sup> San Diego AQMD, Rule 20.2 New Source Review Non-Major Stationary Sources, last accessed August 10, 2021, [https://www.sandiegocounty.gov/content/dam/sdc/apcd/PDF/Rules\\_and\\_Regulations/Permits/APCD\\_R\\_20.2.pdf](https://www.sandiegocounty.gov/content/dam/sdc/apcd/PDF/Rules_and_Regulations/Permits/APCD_R_20.2.pdf).

<sup>20</sup> Bay Area AQMD, CEQA Air Quality Guidelines, May 2017, last accessed August 10, 2021, [https://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa\\_guidelines\\_may2017-pdf.pdf?la=en&rev=0d2d971e661d41f28a56953f1776bdde](https://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en&rev=0d2d971e661d41f28a56953f1776bdde).

<sup>21</sup> San Joaquin Valley APCD, Air Quality Thresholds of Significance, March 19, 2015, last accessed August 10, 2021, <http://www.valleyair.org/transportation/0714-GAMAQI-Criteria-Pollutant-Thresholds-of-Significance.pdf>.

| Air District                              | ROG     | NOx     | CO      | SO2     | PM10    | PM2.5  | CO2e        |
|---|---------|---------|---------|---------|---------|--------|-------------|
| Monterey Bay Unified APCD <sup>22</sup>   | None    | 137 ppd | 550 ppd | 150 ppd | 82 ppd  | none   | None        |
| San Luis Obispo County APCD <sup>23</sup> | 137 ppd | 137 ppd | None    | None    | 7 ppd   | 7 ppd  | None        |
| Santa Barbara County APCD <sup>24</sup>   | 25 tpy  | 25 tpy  | 25 tpy  | 25 tpy  | 25 tpy  | 25 tpy | None        |
| Ventura County APCD <sup>25</sup>         | 25 ppd  | 25 ppd  | None    | None    | None    | None   | None        |
| South Coast AQMD <sup>26</sup>            | 75 ppd  | 100 ppd | 550 ppd | 150 ppd | 150 ppd | 55 ppd | 10,000 mtpy |

Notes:

appd = Average Pounds Per Day

ppd = Pounds Per Day

tpy = Tons Per Year

mtpy = Metric Tons Per Year

ROG = Reactive Organic Gases

NOx = Nitrogen Oxides

CO = Carbon Monoxide

SO2 = Sulfur Dioxide

PM10 = Particulate Matter 10 micrometers and smaller in diameter

PM2.5 = Particulate Matter 2.5 micrometers and smaller in diameter

The modeled criteria pollutant and GHG emissions associated with construction activities required under the Proposed Amendment were compared to the most stringent CEQA significance thresholds. As shown in Tables D-4l through D-4o, the new construction of infrastructure for a 1–2-MW charging system for a ZE short-run

<sup>22</sup> Monterey Bay Unified APCD, CEQA Air Quality Guidelines, 2008, last accessed August 10, 2021, [https://www.mbard.org/files/f665829d1/CEQA\\_full+%281%29.pdf](https://www.mbard.org/files/f665829d1/CEQA_full+%281%29.pdf).

<sup>23</sup> San Luis Obispo County APCD, CEQA Air Quality Handbook A Guide for Assessing the Air Quality Impacts for Projects Subject to CEQA Review, April 2012, last accessed August 11, 2021, [https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA\\_Handbook\\_2012\\_v2%20%28Updated%20MemoTable1-1\\_July2021%29\\_LinkedwithMemo.pdf](https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20MemoTable1-1_July2021%29_LinkedwithMemo.pdf).

<sup>24</sup> Santa Barbara County APCD, Scope and Content of Air Quality Sections in Environmental Documents, June 2017, last accessed August 11, 2021, <https://www.ourair.org/wp-content/uploads/ScopeContentJune2017-LimitedUpdate.pdf>.

<sup>25</sup> Ventura County APCD, Ventura County Air Quality Assessment Guidelines, October 2003, last accessed August 11, 2021, <http://www.vcapcd.org/pubs/Planning/VCAQGuidelines.pdf>.

<sup>26</sup> South Coast AQMD, South Coast AQMD Air Quality Significance Thresholds, April 2019, last accessed August 11, 2021, <http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2>.

ferry would not be expected to emit criteria pollutant and GHG emissions that would not exceed any of the significance thresholds adopted by Air Districts that contains a location where a short-run ferry or excursion vessel currently operates.

**Table D-4l: Construction Criteria Emission Rates for Marina/Harbor Shore Power Scenario**

| Category                              | ROG                         | NOx                         | CO                | SO2               | PM10            | PM2.5           |
|---------------------------------------|-----------------------------|-----------------------------|-------------------|-------------------|-----------------|-----------------|
| Average Daily (appd)                  | 1                           | 10                          | 10                | < 1               | < 1             | < 1             |
| Peak Daily (ppd)                      | 2                           | 17                          | 17                | < 1               | 1               | < 1             |
| Annual (tpy)                          | < 1                         | < 1                         | < 1               | < 1               | < 1             | < 1             |
| Most Stringent Significance Threshold | 54 appd<br>25 ppd<br>10 tpy | 54 appd<br>25 ppd<br>10 tpy | 550 ppd<br>25 tpy | 150 ppd<br>25 tpy | 7 ppd<br>15 tpy | 7 ppd<br>15 tpy |
| Exceed Threshold (Yes or No)?         | No                          | No                          | No                | No                | No              | No              |

Notes:

appd = Average Pounds Per Day

ppd = Pounds Per Day

tpy = Tons Per Year

ROG = Reactive Organic Gases

NOx = Nitrogen Oxides

CO = Carbon Monoxide

SO2 = Sulfur Dioxide

PM10 = Particulate Matter 10 micrometers and smaller in diameter

PM2.5 = Particulate Matter 2.5 micrometers and smaller in diameter

**Table D-4m: Construction Greenhouse Gas Emission Rates for Marina/Harbor Shore Power Scenario**

| Category                                     | CO2 | CH4 | N2O | CO2e  |
|--|-----|-----|-----|-------|
| Construction GHG (mtpy)                      | 56  | < 1 | < 1 | 56    |
| Amortized Emissions (mtpy)                   | 2   | < 1 | < 1 | 2     |
| Most Stringent Significance Threshold (mtpy) |     |     |     | 1,100 |
| Exceed Threshold (Yes or No)?                |     |     |     | No    |

Notes:

mtpy = Metric Tons Per Year

CO2 = Carbon Dioxide

CH4 = Methane

N2O = Nitrous Oxide

**Table D-4n: Construction Criteria Emission Rates for New Construction of 1–2-MW Charging Infrastructure Scenario**

| Category                              | ROG                         | NOx                         | CO                | SO2               | PM10            | PM2.5           |
|---------------------------------------|-----------------------------|-----------------------------|-------------------|-------------------|-----------------|-----------------|
| Average Daily (appd)                  | 1                           | 11                          | 12                | < 1               | < 1             | < 1             |
| Peak Daily (ppd)                      | 2                           | 17                          | 18                | < 1               | 1               | 1               |
| Annual (tpy)                          | < 1                         | < 1                         | < 1               | < 1               | < 1             | < 1             |
| Most Stringent Significance Threshold | 54 appd<br>25 ppd<br>10 tpy | 54 appd<br>25 ppd<br>10 tpy | 550 ppd<br>25 tpy | 150 ppd<br>25 tpy | 7 ppd<br>15 tpy | 7 ppd<br>15 tpy |
| Exceed Threshold (Yes or No)?         | No                          | No                          | No                | No                | No              | No              |

Notes:

appd = Average Pounds Per Day

ppd = Pounds Per Day

tpy = Tons Per Year

ROG = Reactive Organic Gases

NOx = Nitrogen Oxides

CO = Carbon Monoxide

SO2 = Sulfur Dioxide

PM10 = Particulate Matter 10 micrometers and smaller in diameter

PM2.5 = Particulate Matter 2.5 micrometers and smaller in diameter

**Table D-4o: Construction Greenhouse Gas Emission Rates for New Construction of 1-2 MW Charging Infrastructure Scenario**

| Category                                     | CO2 | CH4 | N2O | CO2e  |
|--|-----|-----|-----|-------|
| Construction GHG (mtpy)                      | 88  | < 1 | < 1 | 88    |
| Amortized Emissions (mtpy)                   | 3   | < 1 | < 1 | 3     |
| Most Stringent Significance Threshold (mtpy) |     |     |     | 1,100 |
| Exceed Threshold (Yes or No)?                |     |     |     | No    |

Notes:

mtpy = Metric Tons Per Year

CO2 = Carbon Dioxide

CH4 = Methane

N2O = Nitrous Oxide

## 4. CalEEMod Outputs and Assumptions

Please see attachment on following page.

Modification of Existing Marine/Harbor Facility - Statewide , Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**Modification of Existing Marine/Harbor Facility  
Statewide , Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

| Land Uses                  | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|----------------------------|------|--------|-------------|--------------------|------------|
| Other Non-Asphalt Surfaces | 5.00 | Acre   | 5.00        | 217,800.00         | 0          |

**1.2 Other Project Characteristics**

|                                |                         |                                |     |                                  |      |
|--------------------------------|-------------------------|--------------------------------|-----|----------------------------------|------|
| <b>Urbanization</b>            | Urban                   | <b>Wind Speed (m/s)</b>        | 2.2 | <b>Precipitation Freq (Days)</b> | 54   |
| <b>Climate Zone</b>            | 4                       |                                |     | <b>Operational Year</b>          | 2030 |
| <b>Utility Company</b>         | Alameda Municipal Power |                                |     |                                  |      |
| <b>CO2 Intensity (lb/MWhr)</b> | 0                       | <b>CH4 Intensity (lb/MWhr)</b> | 0   | <b>N2O Intensity (lb/MWhr)</b>   | 0    |

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

Project Characteristics - Construction emissions only.

Land Use -

Construction Phase - Assumed construction would occur from January 4, 2021 through April 5, 2021.

Off-road Equipment - Assumed construction unit amount and hours/day.

Off-road Equipment - Assumed construction unit amount and hours/day.

Off-road Equipment - Assumed construction unit amount and hours/day.

Trips and VMT - Assumed worker, vendor and hauling trips and trip lengths.

Grading - Assumed no grading.

| Table Name           | Column Name | Default Value | New Value |
|----------------------|-------------|---------------|-----------|
| tblConstructionPhase | NumDays     | 230.00        | 30.00     |
| tblConstructionPhase | NumDays     | 5.00          | 16.00     |



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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

|                     |                            |       |       |
|---------------------|----------------------------|-------|-------|
| tblGrading          | AcresOfGrading             | 6.00  | 0.00  |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00  | 1.00  |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00  | 1.00  |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 4.00  | 1.00  |
| tblOffRoadEquipment | UsageHours                 | 7.00  | 8.00  |
| tblOffRoadEquipment | UsageHours                 | 8.00  | 6.00  |
| tblTripsAndVMT      | HaulingTripLength          | 20.00 | 15.00 |
| tblTripsAndVMT      | HaulingTripLength          | 20.00 | 15.00 |
| tblTripsAndVMT      | HaulingTripLength          | 20.00 | 15.00 |
| tblTripsAndVMT      | HaulingTripNumber          | 0.00  | 5.00  |
| tblTripsAndVMT      | HaulingTripNumber          | 0.00  | 4.00  |
| tblTripsAndVMT      | HaulingTripNumber          | 0.00  | 10.00 |
| tblTripsAndVMT      | VendorTripLength           | 7.30  | 15.00 |
| tblTripsAndVMT      | VendorTripLength           | 7.30  | 15.00 |
| tblTripsAndVMT      | VendorTripLength           | 7.30  | 15.00 |
| tblTripsAndVMT      | VendorTripNumber           | 36.00 | 0.00  |
| tblTripsAndVMT      | WorkerTripLength           | 10.80 | 15.00 |
| tblTripsAndVMT      | WorkerTripLength           | 10.80 | 15.00 |
| tblTripsAndVMT      | WorkerTripLength           | 10.80 | 15.00 |
| tblTripsAndVMT      | WorkerTripNumber           | 5.00  | 10.00 |
| tblTripsAndVMT      | WorkerTripNumber           | 20.00 | 10.00 |
| tblTripsAndVMT      | WorkerTripNumber           | 91.00 | 10.00 |

**2.0 Emissions Summary**

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Modification of Existing Marine/Harbor Facility - Statewide , Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**2.1 Overall Construction**

**Unmitigated Construction**

|                | ROG           | NOx           | CO            | SO2                | Fugitive PM10      | Exhaust PM10  | PM10 Total    | Fugitive PM2.5     | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4           | N2O                | CO2e           |
|----------------|---------------|---------------|---------------|--------------------|--------------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|----------------|---------------|--------------------|----------------|
| Year           | tons/yr       |               |               |                    |                    |               |               |                    |               |               | MT/yr         |                |                |               |                    |                |
| 2021           | 0.0383        | 0.3436        | 0.3415        | 6.4000e-004        | 3.7600e-003        | 0.0187        | 0.0224        | 1.0000e-003        | 0.0178        | 0.0188        | 0.0000        | 55.5825        | 55.5825        | 0.0102        | 1.6000e-004        | 55.8852        |
| <b>Maximum</b> | <b>0.0383</b> | <b>0.3436</b> | <b>0.3415</b> | <b>6.4000e-004</b> | <b>3.7600e-003</b> | <b>0.0187</b> | <b>0.0224</b> | <b>1.0000e-003</b> | <b>0.0178</b> | <b>0.0188</b> | <b>0.0000</b> | <b>55.5825</b> | <b>55.5825</b> | <b>0.0102</b> | <b>1.6000e-004</b> | <b>55.8852</b> |

**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         |                |                |               |                    |                |
| 2021           | 0.0383        | 0.3436        | 0.3415        | 6.4000e-004        | 3.7600e-003        | 0.0187        | 0.0224        | 1.0000e-003        | 0.0178        | 0.0188        | 0.0000        | 55.5824        | 55.5824        | 0.0102        | 1.6000e-004        | 55.8852        |
| <b>Maximum</b> | <b>0.0383</b> | <b>0.3436</b> | <b>0.3415</b> | <b>6.4000e-004</b> | <b>3.7600e-003</b> | <b>0.0187</b> | <b>0.0224</b> | <b>1.0000e-003</b> | <b>0.0178</b> | <b>0.0188</b> | <b>0.0000</b> | <b>55.5824</b> | <b>55.5824</b> | <b>0.0102</b> | <b>1.6000e-004</b> | <b>55.8852</b> |

|                          | ROG         | NOx         | CO          | SO2         | Fugitive PM10 | Exhaust PM10 | PM10 Total  | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2    | NBio- CO2   | Total CO2   | CH4         | N2O         | CO2e        |
|--------------------------|-------------|-------------|-------------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Percent Reduction</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b>   | <b>0.00</b>  | <b>0.00</b> | <b>0.00</b>    | <b>0.00</b>   | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---------|------------|----------|--|--|
| 1       | 1-4-2021   | 4-3-2021 | 0.3744                                       | 0.3744                                     |
| 2       | 4-4-2021   | 7-3-2021 | 0.0067                                       | 0.0067                                     |
|         |            | Highest  | 0.3744                                       | 0.3744                                     |

**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         | 0.0217        | 0.0000        | 5.0000e-005        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 9.0000e-005        | 9.0000e-005        | 0.0000        | 0.0000        | 1.0000e-004        |
| 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             |
| <b>Total</b> | <b>0.0217</b> | <b>0.0000</b> | <b>5.0000e-005</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b>  | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>9.0000e-005</b> | <b>9.0000e-005</b> | <b>0.0000</b> | <b>0.0000</b> | <b>1.0000e-004</b> |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**2.2 Overall Operational**

**Mitigated Operational**

|              | ROG           | NOx           | CO                 | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2          | Total CO2          | CH4           | N2O           | CO2e               |
|--------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|--------------------|--------------------|---------------|---------------|--------------------|
| Category     | tons/yr       |               |                    |               |               |               |               |                |               |               | MT/yr         |                    |                    |               |               |                    |
| Area         | 0.0217        | 0.0000        | 5.0000e-005        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 9.0000e-005        | 9.0000e-005        | 0.0000        | 0.0000        | 1.0000e-004        |
| 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             |
| <b>Total</b> | <b>0.0217</b> | <b>0.0000</b> | <b>5.0000e-005</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b>  | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>9.0000e-005</b> | <b>9.0000e-005</b> | <b>0.0000</b> | <b>0.0000</b> | <b>1.0000e-004</b> |

|                          | ROG         | NOx         | CO          | SO2         | Fugitive PM10 | Exhaust PM10 | PM10 Total  | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2    | NBio- CO2   | Total CO2   | CH4         | N2O         | CO2e        |
|--------------------------|-------------|-------------|-------------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Percent Reduction</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b>   | <b>0.00</b>  | <b>0.00</b> | <b>0.00</b>    | <b>0.00</b>   | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> |

**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      | 1/4/2021   | 1/25/2021 | 5             | 16       |                   |
| 2            | Trenching           | Trenching             | 1/26/2021  | 2/22/2021 | 5             | 20       |                   |
| 3            | System Installation | Building Construction | 2/23/2021  | 4/5/2021  | 5             | 30       |                   |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 5**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name          | Offroad Equipment Type    | Amount | Usage Hours | Horse Power | Load Factor |
|---------------------|---------------------------|--------|-------------|-------------|-------------|
| Site Preparation    | Graders                   | 1      | 6.00        | 187         | 0.41        |
| Site Preparation    | Tractors/Loaders/Backhoes | 1      | 6.00        | 97          | 0.37        |
| Trenching           | Bore/Drill Rigs           | 1      | 8.00        | 221         | 0.50        |
| Trenching           | Cement and Mortar Mixers  | 1      | 8.00        | 9           | 0.56        |
| Trenching           | Concrete/Industrial Saws  | 1      | 8.00        | 81          | 0.73        |
| Trenching           | Generator Sets            | 1      | 8.00        | 84          | 0.74        |
| Trenching           | Plate Compactors          | 1      | 8.00        | 8           | 0.43        |
| Trenching           | Tractors/Loaders/Backhoes | 1      | 8.00        | 97          | 0.37        |
| Trenching           | Trenchers                 | 2      | 6.00        | 78          | 0.50        |
| System Installation | Air Compressors           | 1      | 8.00        | 78          | 0.48        |
| System Installation | Forklifts                 | 1      | 8.00        | 89          | 0.20        |
| System Installation | Generator Sets            | 1      | 8.00        | 84          | 0.74        |
| System Installation | Tractors/Loaders/Backhoes | 1      | 8.00        | 97          | 0.37        |

**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    | 2                       | 10.00              | 0.00               | 5.00                | 15.00              | 15.00              | 15.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Trenching           | 8                       | 10.00              | 0.00               | 4.00                | 15.00              | 15.00              | 15.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| System Installation | 4                       | 10.00              | 0.00               | 10.00               | 15.00              | 15.00              | 15.00               | LD_Mix               | HDT_Mix              | HHDT                  |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.1 Mitigation Measures Construction**

**3.2 Site Preparation - 2021**

**Unmitigated Construction On-Site**

|               | ROG                | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 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 |                    |               |               |                    | 0.0000        | 0.0000             | 0.0000             | 0.0000         | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Off-Road      | 3.8400e-003        | 0.0469        | 0.0242        | 6.0000e-005        |               | 1.8000e-003        | 1.8000e-003        |                | 1.6500e-003        | 1.6500e-003        | 0.0000        | 5.1306        | 5.1306        | 1.6600e-003        | 0.0000        | 5.1721        |
| <b>Total</b>  | <b>3.8400e-003</b> | <b>0.0469</b> | <b>0.0242</b> | <b>6.0000e-005</b> | <b>0.0000</b> | <b>1.8000e-003</b> | <b>1.8000e-003</b> | <b>0.0000</b>  | <b>1.6500e-003</b> | <b>1.6500e-003</b> | <b>0.0000</b> | <b>5.1306</b> | <b>5.1306</b> | <b>1.6600e-003</b> | <b>0.0000</b> | <b>5.1721</b> |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.2 Site Preparation - 2021**

**Unmitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 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      | 1.0000e-005        | 3.5000e-004        | 8.0000e-005        | 0.0000             | 3.0000e-005        | 0.0000             | 4.0000e-005        | 1.0000e-005        | 0.0000             | 1.0000e-005        | 0.0000        | 0.1167        | 0.1167        | 0.0000             | 2.0000e-005        | 0.1223        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000             | 0.0000        |
| Worker       | 3.2000e-004        | 2.6000e-004        | 3.0900e-003        | 1.0000e-005        | 8.8000e-004        | 1.0000e-005        | 8.9000e-004        | 2.3000e-004        | 1.0000e-005        | 2.4000e-004        | 0.0000        | 0.7424        | 0.7424        | 2.0000e-005        | 2.0000e-005        | 0.7495        |
| <b>Total</b> | <b>3.3000e-004</b> | <b>6.1000e-004</b> | <b>3.1700e-003</b> | <b>1.0000e-005</b> | <b>9.1000e-004</b> | <b>1.0000e-005</b> | <b>9.3000e-004</b> | <b>2.4000e-004</b> | <b>1.0000e-005</b> | <b>2.5000e-004</b> | <b>0.0000</b> | <b>0.8592</b> | <b>0.8592</b> | <b>2.0000e-005</b> | <b>4.0000e-005</b> | <b>0.8718</b> |

**Mitigated Construction On-Site**

|               | ROG                | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 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 |                    |               |               |                    | 0.0000        | 0.0000             | 0.0000             | 0.0000         | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Off-Road      | 3.8400e-003        | 0.0469        | 0.0242        | 6.0000e-005        |               | 1.8000e-003        | 1.8000e-003        |                | 1.6500e-003        | 1.6500e-003        | 0.0000        | 5.1306        | 5.1306        | 1.6600e-003        | 0.0000        | 5.1721        |
| <b>Total</b>  | <b>3.8400e-003</b> | <b>0.0469</b> | <b>0.0242</b> | <b>6.0000e-005</b> | <b>0.0000</b> | <b>1.8000e-003</b> | <b>1.8000e-003</b> | <b>0.0000</b>  | <b>1.6500e-003</b> | <b>1.6500e-003</b> | <b>0.0000</b> | <b>5.1306</b> | <b>5.1306</b> | <b>1.6600e-003</b> | <b>0.0000</b> | <b>5.1721</b> |

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**3.2 Site Preparation - 2021**

**Mitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 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      | 1.0000e-005        | 3.5000e-004        | 8.0000e-005        | 0.0000             | 3.0000e-005        | 0.0000             | 4.0000e-005        | 1.0000e-005        | 0.0000             | 1.0000e-005        | 0.0000        | 0.1167        | 0.1167        | 0.0000             | 2.0000e-005        | 0.1223        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000             | 0.0000        |
| Worker       | 3.2000e-004        | 2.6000e-004        | 3.0900e-003        | 1.0000e-005        | 8.8000e-004        | 1.0000e-005        | 8.9000e-004        | 2.3000e-004        | 1.0000e-005        | 2.4000e-004        | 0.0000        | 0.7424        | 0.7424        | 2.0000e-005        | 2.0000e-005        | 0.7495        |
| <b>Total</b> | <b>3.3000e-004</b> | <b>6.1000e-004</b> | <b>3.1700e-003</b> | <b>1.0000e-005</b> | <b>9.1000e-004</b> | <b>1.0000e-005</b> | <b>9.3000e-004</b> | <b>2.4000e-004</b> | <b>1.0000e-005</b> | <b>2.5000e-004</b> | <b>0.0000</b> | <b>0.8592</b> | <b>0.8592</b> | <b>2.0000e-005</b> | <b>4.0000e-005</b> | <b>0.8718</b> |

**3.3 Trenching - 2021**

**Unmitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 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     | 0.0186        | 0.1701        | 0.1612        | 3.2000e-004        |               | 9.5100e-003        | 9.5100e-003        |                | 9.0400e-003        | 9.0400e-003        | 0.0000        | 27.2522        | 27.2522        | 5.6800e-003        | 0.0000        | 27.3942        |
| <b>Total</b> | <b>0.0186</b> | <b>0.1701</b> | <b>0.1612</b> | <b>3.2000e-004</b> |               | <b>9.5100e-003</b> | <b>9.5100e-003</b> |                | <b>9.0400e-003</b> | <b>9.0400e-003</b> | <b>0.0000</b> | <b>27.2522</b> | <b>27.2522</b> | <b>5.6800e-003</b> | <b>0.0000</b> | <b>27.3942</b> |



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**3.3 Trenching - 2021**

**Unmitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 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      | 1.0000e-005        | 2.8000e-004        | 7.0000e-005        | 0.0000             | 3.0000e-005        | 0.0000             | 3.0000e-005        | 1.0000e-005        | 0.0000             | 1.0000e-005        | 0.0000        | 0.0934        | 0.0934        | 0.0000             | 1.0000e-005        | 0.0978        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000             | 0.0000        |
| Worker       | 4.0000e-004        | 3.3000e-004        | 3.8600e-003        | 1.0000e-005        | 1.1000e-003        | 1.0000e-005        | 1.1100e-003        | 2.9000e-004        | 1.0000e-005        | 3.0000e-004        | 0.0000        | 0.9281        | 0.9281        | 3.0000e-005        | 3.0000e-005        | 0.9369        |
| <b>Total</b> | <b>4.1000e-004</b> | <b>6.1000e-004</b> | <b>3.9300e-003</b> | <b>1.0000e-005</b> | <b>1.1300e-003</b> | <b>1.0000e-005</b> | <b>1.1400e-003</b> | <b>3.0000e-004</b> | <b>1.0000e-005</b> | <b>3.1000e-004</b> | <b>0.0000</b> | <b>1.0214</b> | <b>1.0214</b> | <b>3.0000e-005</b> | <b>4.0000e-005</b> | <b>1.0347</b> |

**Mitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 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     | 0.0186        | 0.1701        | 0.1612        | 3.2000e-004        |               | 9.5100e-003        | 9.5100e-003        |                | 9.0400e-003        | 9.0400e-003        | 0.0000        | 27.2522        | 27.2522        | 5.6800e-003        | 0.0000        | 27.3941        |
| <b>Total</b> | <b>0.0186</b> | <b>0.1701</b> | <b>0.1612</b> | <b>3.2000e-004</b> |               | <b>9.5100e-003</b> | <b>9.5100e-003</b> |                | <b>9.0400e-003</b> | <b>9.0400e-003</b> | <b>0.0000</b> | <b>27.2522</b> | <b>27.2522</b> | <b>5.6800e-003</b> | <b>0.0000</b> | <b>27.3941</b> |

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**3.3 Trenching - 2021**

**Mitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 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      | 1.0000e-005        | 2.8000e-004        | 7.0000e-005        | 0.0000             | 3.0000e-005        | 0.0000             | 3.0000e-005        | 1.0000e-005        | 0.0000             | 1.0000e-005        | 0.0000        | 0.0934        | 0.0934        | 0.0000             | 1.0000e-005        | 0.0978        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000             | 0.0000        |
| Worker       | 4.0000e-004        | 3.3000e-004        | 3.8600e-003        | 1.0000e-005        | 1.1000e-003        | 1.0000e-005        | 1.1100e-003        | 2.9000e-004        | 1.0000e-005        | 3.0000e-004        | 0.0000        | 0.9281        | 0.9281        | 3.0000e-005        | 3.0000e-005        | 0.9369        |
| <b>Total</b> | <b>4.1000e-004</b> | <b>6.1000e-004</b> | <b>3.9300e-003</b> | <b>1.0000e-005</b> | <b>1.1300e-003</b> | <b>1.0000e-005</b> | <b>1.1400e-003</b> | <b>3.0000e-004</b> | <b>1.0000e-005</b> | <b>3.1000e-004</b> | <b>0.0000</b> | <b>1.0214</b> | <b>1.0214</b> | <b>3.0000e-005</b> | <b>4.0000e-005</b> | <b>1.0347</b> |

**3.4 System Installation - 2021**

**Unmitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 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     | 0.0145        | 0.1242        | 0.1430        | 2.3000e-004        |               | 7.3300e-003        | 7.3300e-003        |                | 7.1000e-003        | 7.1000e-003        | 0.0000        | 19.6936        | 19.6936        | 2.7600e-003        | 0.0000        | 19.7625        |
| <b>Total</b> | <b>0.0145</b> | <b>0.1242</b> | <b>0.1430</b> | <b>2.3000e-004</b> |               | <b>7.3300e-003</b> | <b>7.3300e-003</b> |                | <b>7.1000e-003</b> | <b>7.1000e-003</b> | <b>0.0000</b> | <b>19.6936</b> | <b>19.6936</b> | <b>2.7600e-003</b> | <b>0.0000</b> | <b>19.7625</b> |

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**3.4 System Installation - 2021**

**Unmitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 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      | 2.0000e-005        | 7.1000e-004        | 1.6000e-004        | 0.0000             | 6.0000e-005        | 1.0000e-005        | 7.0000e-005        | 2.0000e-005        | 1.0000e-005        | 3.0000e-005        | 0.0000        | 0.2334        | 0.2334        | 1.0000e-005        | 4.0000e-005        | 0.2446        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000             | 0.0000        |
| Worker       | 6.0000e-004        | 5.0000e-004        | 5.7900e-003        | 2.0000e-005        | 1.6600e-003        | 1.0000e-005        | 1.6700e-003        | 4.4000e-004        | 1.0000e-005        | 4.5000e-004        | 0.0000        | 1.3921        | 1.3921        | 4.0000e-005        | 4.0000e-005        | 1.4053        |
| <b>Total</b> | <b>6.2000e-004</b> | <b>1.2100e-003</b> | <b>5.9500e-003</b> | <b>2.0000e-005</b> | <b>1.7200e-003</b> | <b>2.0000e-005</b> | <b>1.7400e-003</b> | <b>4.6000e-004</b> | <b>2.0000e-005</b> | <b>4.8000e-004</b> | <b>0.0000</b> | <b>1.6255</b> | <b>1.6255</b> | <b>5.0000e-005</b> | <b>8.0000e-005</b> | <b>1.6499</b> |

**Mitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 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     | 0.0145        | 0.1242        | 0.1430        | 2.3000e-004        |               | 7.3300e-003        | 7.3300e-003        |                | 7.1000e-003        | 7.1000e-003        | 0.0000        | 19.6935        | 19.6935        | 2.7600e-003        | 0.0000        | 19.7625        |
| <b>Total</b> | <b>0.0145</b> | <b>0.1242</b> | <b>0.1430</b> | <b>2.3000e-004</b> |               | <b>7.3300e-003</b> | <b>7.3300e-003</b> |                | <b>7.1000e-003</b> | <b>7.1000e-003</b> | <b>0.0000</b> | <b>19.6935</b> | <b>19.6935</b> | <b>2.7600e-003</b> | <b>0.0000</b> | <b>19.7625</b> |

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**3.4 System Installation - 2021**

**Mitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 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      | 2.0000e-005        | 7.1000e-004        | 1.6000e-004        | 0.0000             | 6.0000e-005        | 1.0000e-005        | 7.0000e-005        | 2.0000e-005        | 1.0000e-005        | 3.0000e-005        | 0.0000        | 0.2334        | 0.2334        | 1.0000e-005        | 4.0000e-005        | 0.2446        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000             | 0.0000        |
| Worker       | 6.0000e-004        | 5.0000e-004        | 5.7900e-003        | 2.0000e-005        | 1.6600e-003        | 1.0000e-005        | 1.6700e-003        | 4.4000e-004        | 1.0000e-005        | 4.5000e-004        | 0.0000        | 1.3921        | 1.3921        | 4.0000e-005        | 4.0000e-005        | 1.4053        |
| <b>Total</b> | <b>6.2000e-004</b> | <b>1.2100e-003</b> | <b>5.9500e-003</b> | <b>2.0000e-005</b> | <b>1.7200e-003</b> | <b>2.0000e-005</b> | <b>1.7400e-003</b> | <b>4.6000e-004</b> | <b>2.0000e-005</b> | <b>4.8000e-004</b> | <b>0.0000</b> | <b>1.6255</b> | <b>1.6255</b> | <b>5.0000e-005</b> | <b>8.0000e-005</b> | <b>1.6499</b> |

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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 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 Non-Asphalt Surfaces | 9.50       | 7.30       | 7.30        | 0.00       | 0.00       | 0.00        | 0              | 0        | 0       |

4.4 Fleet Mix

| Land Use                   | LDA      | LDT1     | LDT2     | MDV      | LHD1     | LHD2     | MHD      | HHD      | OBUS     | UBUS     | MCY      | SBUS     | MH       |
|----------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Other Non-Asphalt Surfaces | 0.543438 | 0.060776 | 0.184542 | 0.125993 | 0.024133 | 0.006619 | 0.012016 | 0.011244 | 0.000789 | 0.000455 | 0.025773 | 0.000920 | 0.003302 |

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**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

|                         | ROG     | NOx    | CO     | SO2    | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4    | N2O    | CO2e   |
|-------------------------|---------|--------|--------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|--------|--------|--------|
| Category                | tons/yr |        |        |        |               |              |            |                |               |             | MT/yr    |           |           |        |        |        |
| Electricity Mitigated   |         |        |        |        |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      | 0.0000   | 0.0000    | 0.0000    | 0.0000 | 0.0000 | 0.0000 |
| Electricity Unmitigated |         |        |        |        |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      | 0.0000   | 0.0000    | 0.0000    | 0.0000 | 0.0000 | 0.0000 |
| NaturalGas 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 |
| NaturalGas 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 |

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**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         |               |               |               |               |               |
| Other Non-Asphalt Surfaces | 0              | 0.0000        | 0.0000        | 0.0000        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        |
| <b>Total</b>               |                | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |

**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         |               |               |               |               |               |
| Other Non-Asphalt Surfaces | 0              | 0.0000        | 0.0000        | 0.0000        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        |
| <b>Total</b>               |                | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |

Modification of Existing Marine/Harbor Facility - Statewide , Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.3 Energy by Land Use - Electricity**

Unmitigated

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

Mitigated

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

**6.0 Area Detail**

**6.1 Mitigation Measures Area**



Modification of Existing Marine/Harbor Facility - Statewide , Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

|             | ROG     | NOx    | CO          | SO2    | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2   | Total CO2   | CH4    | N2O    | CO2e        |
|-------------|---------|--------|-------------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|-------------|-------------|--------|--------|-------------|
| Category    | tons/yr |        |             |        |               |              |            |                |               |             | MT/yr    |             |             |        |        |             |
| Mitigated   | 0.0217  | 0.0000 | 5.0000e-005 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      | 0.0000   | 9.0000e-005 | 9.0000e-005 | 0.0000 | 0.0000 | 1.0000e-004 |
| Unmitigated | 0.0217  | 0.0000 | 5.0000e-005 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      | 0.0000   | 9.0000e-005 | 9.0000e-005 | 0.0000 | 0.0000 | 1.0000e-004 |

**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 | 7.5700e-003   |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000             |
| Consumer Products     | 0.0141        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000             |
| Landscaping           | 0.0000        | 0.0000        | 5.0000e-005        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 9.0000e-005        | 9.0000e-005        | 0.0000        | 0.0000        | 1.0000e-004        |
| <b>Total</b>          | <b>0.0217</b> | <b>0.0000</b> | <b>5.0000e-005</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>9.0000e-005</b> | <b>9.0000e-005</b> | <b>0.0000</b> | <b>0.0000</b> | <b>1.0000e-004</b> |

Modification of Existing Marine/Harbor Facility - Statewide , Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**6.2 Area by SubCategory**

Mitigated

|                       | ROG           | NOx           | CO                 | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2          | Total CO2          | CH4           | N2O           | CO2e               |
|-----------------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|--------------------|--------------------|---------------|---------------|--------------------|
| SubCategory           | tons/yr       |               |                    |               |               |               |               |                |               |               | MT/yr         |                    |                    |               |               |                    |
| Architectural Coating | 7.5700e-003   |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000             |
| Consumer Products     | 0.0141        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000             |
| Landscaping           | 0.0000        | 0.0000        | 5.0000e-005        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 9.0000e-005        | 9.0000e-005        | 0.0000        | 0.0000        | 1.0000e-004        |
| <b>Total</b>          | <b>0.0217</b> | <b>0.0000</b> | <b>5.0000e-005</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>9.0000e-005</b> | <b>9.0000e-005</b> | <b>0.0000</b> | <b>0.0000</b> | <b>1.0000e-004</b> |

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

Modification of Existing Marine/Harbor Facility - Statewide , Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

|             | 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 Non-Asphalt Surfaces | 0 / 0              | 0.0000        | 0.0000        | 0.0000        | 0.0000        |
| <b>Total</b>               |                    | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |

Modification of Existing Marine/Harbor Facility - Statewide , Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**7.2 Water by Land Use**

Mitigated

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

**8.0 Waste Detail**

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**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 |

Modification of Existing Marine/Harbor Facility - Statewide , Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**8.2 Waste by Land Use**

Unmitigated

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

Mitigated

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

**9.0 Operational Offroad**

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

Modification of Existing Marine/Harbor Facility - Statewide , Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**10.0 Stationary Equipment**

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**Fire Pumps and Emergency Generators**

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

**Boilers**

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

**User Defined Equipment**

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

**11.0 Vegetation**

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Modification of Existing Marine/Harbor Facility - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**Modification of Existing Marine/Harbor Facility**

**Statewide , Summer**

**1.0 Project Characteristics**

**1.1 Land Usage**

| Land Uses                  | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|----------------------------|------|--------|-------------|--------------------|------------|
| Other Non-Asphalt Surfaces | 5.00 | Acre   | 5.00        | 217,800.00         | 0          |

**1.2 Other Project Characteristics**

|                                 |                         |                                 |     |                                  |      |
|---------------------------------|-------------------------|---------------------------------|-----|----------------------------------|------|
| <b>Urbanization</b>             | Urban                   | <b>Wind Speed (m/s)</b>         | 2.2 | <b>Precipitation Freq (Days)</b> | 54   |
| <b>Climate Zone</b>             | 4                       |                                 |     | <b>Operational Year</b>          | 2030 |
| <b>Utility Company</b>          | Alameda Municipal Power |                                 |     |                                  |      |
| <b>CO2 Intensity (lb/MW hr)</b> | 0                       | <b>CH4 Intensity (lb/MW hr)</b> | 0   | <b>N2O Intensity (lb/MW hr)</b>  | 0    |

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

Project Characteristics - Construction emissions only.

Land Use -

Construction Phase - Assumed construction would occur from January 4, 2021 through April 5, 2021.

Off-road Equipment - Assumed construction unit amount and hours/day.

Off-road Equipment - Assumed construction unit amount and hours/day.

Off-road Equipment - Assumed construction unit amount and hours/day.

Trips and VMT - Assumed worker, vendor and hauling trips and trip lengths.

Grading - Assumed no grading.

| Table Name           | Column Name | Default Value | New Value |
|----------------------|-------------|---------------|-----------|
| tblConstructionPhase | NumDays     | 230.00        | 30.00     |
| tblConstructionPhase | NumDays     | 5.00          | 16.00     |

Modification of Existing Marine/Harbor Facility - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

|                     |                            |       |       |
|---------------------|----------------------------|-------|-------|
| tblGrading          | AcresOfGrading             | 6.00  | 0.00  |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00  | 1.00  |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00  | 1.00  |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 4.00  | 1.00  |
| tblOffRoadEquipment | UsageHours                 | 7.00  | 8.00  |
| tblOffRoadEquipment | UsageHours                 | 8.00  | 6.00  |
| tblTripsAndVMT      | HaulingTripLength          | 20.00 | 15.00 |
| tblTripsAndVMT      | HaulingTripLength          | 20.00 | 15.00 |
| tblTripsAndVMT      | HaulingTripLength          | 20.00 | 15.00 |
| tblTripsAndVMT      | HaulingTripNumber          | 0.00  | 5.00  |
| tblTripsAndVMT      | HaulingTripNumber          | 0.00  | 4.00  |
| tblTripsAndVMT      | HaulingTripNumber          | 0.00  | 10.00 |
| tblTripsAndVMT      | VendorTripLength           | 7.30  | 15.00 |
| tblTripsAndVMT      | VendorTripLength           | 7.30  | 15.00 |
| tblTripsAndVMT      | VendorTripLength           | 7.30  | 15.00 |
| tblTripsAndVMT      | VendorTripNumber           | 36.00 | 0.00  |
| tblTripsAndVMT      | WorkerTripLength           | 10.80 | 15.00 |
| tblTripsAndVMT      | WorkerTripLength           | 10.80 | 15.00 |
| tblTripsAndVMT      | WorkerTripLength           | 10.80 | 15.00 |
| tblTripsAndVMT      | WorkerTripNumber           | 5.00  | 10.00 |
| tblTripsAndVMT      | WorkerTripNumber           | 20.00 | 10.00 |
| tblTripsAndVMT      | WorkerTripNumber           | 91.00 | 10.00 |

**2.0 Emissions Summary**

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Modification of Existing Marine/Harbor Facility - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**2.1 Overall Construction (Maximum Daily Emission)**

**Unmitigated Construction**

|                | ROG           | NOx            | CO             | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O                | CO2e              |
|----------------|---------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|--------------------|-------------------|
| Year           | lb/day        |                |                |               |               |               |               |                |               |               | lb/day        |                   |                   |               |                    |                   |
| 2021           | 1.9035        | 17.0670        | 16.5542        | 0.0328        | 0.1184        | 0.9519        | 1.0686        | 0.0315         | 0.9050        | 0.9359        | 0.0000        | 3,122.7616        | 3,122.7616        | 0.6293        | 5.5100e-003        | 3,139.8123        |
| <b>Maximum</b> | <b>1.9035</b> | <b>17.0670</b> | <b>16.5542</b> | <b>0.0328</b> | <b>0.1184</b> | <b>0.9519</b> | <b>1.0686</b> | <b>0.0315</b>  | <b>0.9050</b> | <b>0.9359</b> | <b>0.0000</b> | <b>3,122.7616</b> | <b>3,122.7616</b> | <b>0.6293</b> | <b>5.5100e-003</b> | <b>3,139.8123</b> |

**Mitigated Construction**

|                | ROG           | NOx            | CO             | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O                | CO2e              |
|----------------|---------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|--------------------|-------------------|
| Year           | lb/day        |                |                |               |               |               |               |                |               |               | lb/day        |                   |                   |               |                    |                   |
| 2021           | 1.9035        | 17.0670        | 16.5542        | 0.0328        | 0.1184        | 0.9519        | 1.0686        | 0.0315         | 0.9050        | 0.9359        | 0.0000        | 3,122.7616        | 3,122.7616        | 0.6293        | 5.5100e-003        | 3,139.8123        |
| <b>Maximum</b> | <b>1.9035</b> | <b>17.0670</b> | <b>16.5542</b> | <b>0.0328</b> | <b>0.1184</b> | <b>0.9519</b> | <b>1.0686</b> | <b>0.0315</b>  | <b>0.9050</b> | <b>0.9359</b> | <b>0.0000</b> | <b>3,122.7616</b> | <b>3,122.7616</b> | <b>0.6293</b> | <b>5.5100e-003</b> | <b>3,139.8123</b> |

|                          | ROG         | NOx         | CO          | SO2         | Fugitive PM10 | Exhaust PM10 | PM10 Total  | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2    | NBio- CO2   | Total CO2   | CH4         | N2O         | CO2e        |
|--------------------------|-------------|-------------|-------------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Percent Reduction</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b>   | <b>0.00</b>  | <b>0.00</b> | <b>0.00</b>    | <b>0.00</b>   | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> |

Modification of Existing Marine/Harbor Facility - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**2.2 Overall Operational**

**Unmitigated Operational**

|              | ROG           | NOx           | CO                 | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2          | Total CO2          | CH4           | N2O           | CO2e               |
|--------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|--------------------|--------------------|---------------|---------------|--------------------|
| Category     | lb/day        |               |                    |               |               |               |               |                |               |               | lb/day   |                    |                    |               |               |                    |
| Area         | 0.1187        | 0.0000        | 5.1000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 1.0900e-003        | 1.0900e-003        | 0.0000        |               | 1.1600e-003        |
| 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             |
| 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             |
| <b>Total</b> | <b>0.1187</b> | <b>0.0000</b> | <b>5.1000e-004</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b>  | <b>0.0000</b> | <b>0.0000</b> |          | <b>1.0900e-003</b> | <b>1.0900e-003</b> | <b>0.0000</b> | <b>0.0000</b> | <b>1.1600e-003</b> |

**Mitigated Operational**

|              | ROG           | NOx           | CO                 | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2          | Total CO2          | CH4           | N2O           | CO2e               |
|--------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|--------------------|--------------------|---------------|---------------|--------------------|
| Category     | lb/day        |               |                    |               |               |               |               |                |               |               | lb/day   |                    |                    |               |               |                    |
| Area         | 0.1187        | 0.0000        | 5.1000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 1.0900e-003        | 1.0900e-003        | 0.0000        |               | 1.1600e-003        |
| 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             |
| 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             |
| <b>Total</b> | <b>0.1187</b> | <b>0.0000</b> | <b>5.1000e-004</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b>  | <b>0.0000</b> | <b>0.0000</b> |          | <b>1.0900e-003</b> | <b>1.0900e-003</b> | <b>0.0000</b> | <b>0.0000</b> | <b>1.1600e-003</b> |

Modification of Existing Marine/Harbor Facility - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

|                   | ROG  | NOx  | CO   | SO2  | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4  | N2O  | CO2e |
|-------------------|------|------|------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| 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      | 1/4/2021   | 1/25/2021 | 5             | 16       |                   |
| 2            | Trenching           | Trenching             | 1/26/2021  | 2/22/2021 | 5             | 20       |                   |
| 3            | System Installation | Building Construction | 2/23/2021  | 4/5/2021  | 5             | 30       |                   |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 5**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name       | Offroad Equipment Type    | Amount | Usage Hours | Horse Power | Load Factor |
|------------------|---------------------------|--------|-------------|-------------|-------------|
| Site Preparation | Graders                   | 1      | 6.00        | 187         | 0.41        |
| Site Preparation | Tractors/Loaders/Backhoes | 1      | 6.00        | 97          | 0.37        |
| Trenching        | Bore/Drill Rigs           | 1      | 8.00        | 221         | 0.50        |
| Trenching        | Cement and Mortar Mixers  | 1      | 8.00        | 9           | 0.56        |
| Trenching        | Concrete/Industrial Saws  | 1      | 8.00        | 81          | 0.73        |
| Trenching        | Generator Sets            | 1      | 8.00        | 84          | 0.74        |
| Trenching        | Plate Compactors          | 1      | 8.00        | 8           | 0.43        |
| Trenching        | Tractors/Loaders/Backhoes | 1      | 8.00        | 97          | 0.37        |

Modification of Existing Marine/Harbor Facility - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

|                     |                           |   |      |    |      |
|---------------------|---------------------------|---|------|----|------|
| Trenching           | Trenchers                 | 2 | 6.00 | 78 | 0.50 |
| System Installation | Air Compressors           | 1 | 8.00 | 78 | 0.48 |
| System Installation | Forklifts                 | 1 | 8.00 | 89 | 0.20 |
| System Installation | Generator Sets            | 1 | 8.00 | 84 | 0.74 |
| System Installation | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |

**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    | 2                       | 10.00              | 0.00               | 5.00                | 15.00              | 15.00              | 15.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Trenching           | 8                       | 10.00              | 0.00               | 4.00                | 15.00              | 15.00              | 15.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| System Installation | 4                       | 10.00              | 0.00               | 10.00               | 15.00              | 15.00              | 15.00               | LD_Mix               | HDT_Mix              | HHDT                  |

**3.1 Mitigation Measures Construction**

**3.2 Site Preparation - 2021**

**Unmitigated Construction On-Site**

|               | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4           | N2O | CO2e            |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|-----------------|-----------------|---------------|-----|-----------------|
| Category      | lb/day        |               |               |                    |               |               |               |                |               |               | lb/day   |                 |                 |               |     |                 |
| Fugitive Dust |               |               |               |                    | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        |          |                 | 0.0000          |               |     | 0.0000          |
| Off-Road      | 0.4802        | 5.8653        | 3.0206        | 7.3000e-003        |               | 0.2246        | 0.2246        |                | 0.2066        | 0.2066        |          | 706.9381        | 706.9381        | 0.2286        |     | 712.6541        |
| <b>Total</b>  | <b>0.4802</b> | <b>5.8653</b> | <b>3.0206</b> | <b>7.3000e-003</b> | <b>0.0000</b> | <b>0.2246</b> | <b>0.2246</b> | <b>0.0000</b>  | <b>0.2066</b> | <b>0.2066</b> |          | <b>706.9381</b> | <b>706.9381</b> | <b>0.2286</b> |     | <b>712.6541</b> |

Modification of Existing Marine/Harbor Facility - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.2 Site Preparation - 2021**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4                | N2O                | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|-----------------|-----------------|--------------------|--------------------|-----------------|
| Category     | lb/day        |               |               |                    |               |                    |               |                |                    |               | lb/day   |                 |                 |                    |                    |                 |
| Hauling      | 1.5000e-003   | 0.0423        | 0.0102        | 1.5000e-004        | 4.1000e-003   | 5.9000e-004        | 4.6900e-003   | 1.1300e-003    | 5.6000e-004        | 1.6900e-003   |          | 16.0798         | 16.0798         | 4.4000e-004        | 2.5400e-003        | 16.8474         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        |          | 0.0000          | 0.0000          | 0.0000             | 0.0000             | 0.0000          |
| Worker       | 0.0423        | 0.0297        | 0.4264        | 1.0700e-003        | 0.1141        | 6.8000e-004        | 0.1147        | 0.0303         | 6.3000e-004        | 0.0309        |          | 108.4294        | 108.4294        | 3.0400e-003        | 2.8000e-003        | 109.3405        |
| <b>Total</b> | <b>0.0438</b> | <b>0.0720</b> | <b>0.4366</b> | <b>1.2200e-003</b> | <b>0.1182</b> | <b>1.2700e-003</b> | <b>0.1194</b> | <b>0.0314</b>  | <b>1.1900e-003</b> | <b>0.0326</b> |          | <b>124.5092</b> | <b>124.5092</b> | <b>3.4800e-003</b> | <b>5.3400e-003</b> | <b>126.1879</b> |

**Mitigated Construction On-Site**

|               | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O | CO2e            |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|-----|-----------------|
| Category      | lb/day        |               |               |                    |               |               |               |                |               |               | lb/day        |                 |                 |               |     |                 |
| Fugitive Dust |               |               |               |                    | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        |               |                 | 0.0000          |               |     | 0.0000          |
| Off-Road      | 0.4802        | 5.8653        | 3.0206        | 7.3000e-003        |               | 0.2246        | 0.2246        |                | 0.2066        | 0.2066        | 0.0000        | 706.9381        | 706.9381        | 0.2286        |     | 712.6541        |
| <b>Total</b>  | <b>0.4802</b> | <b>5.8653</b> | <b>3.0206</b> | <b>7.3000e-003</b> | <b>0.0000</b> | <b>0.2246</b> | <b>0.2246</b> | <b>0.0000</b>  | <b>0.2066</b> | <b>0.2066</b> | <b>0.0000</b> | <b>706.9381</b> | <b>706.9381</b> | <b>0.2286</b> |     | <b>712.6541</b> |

Modification of Existing Marine/Harbor Facility - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.2 Site Preparation - 2021**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4                | N2O                | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|-----------------|-----------------|--------------------|--------------------|-----------------|
| Category     | lb/day        |               |               |                    |               |                    |               |                |                    |               | lb/day   |                 |                 |                    |                    |                 |
| Hauling      | 1.5000e-003   | 0.0423        | 0.0102        | 1.5000e-004        | 4.1000e-003   | 5.9000e-004        | 4.6900e-003   | 1.1300e-003    | 5.6000e-004        | 1.6900e-003   |          | 16.0798         | 16.0798         | 4.4000e-004        | 2.5400e-003        | 16.8474         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        |          | 0.0000          | 0.0000          | 0.0000             | 0.0000             | 0.0000          |
| Worker       | 0.0423        | 0.0297        | 0.4264        | 1.0700e-003        | 0.1141        | 6.8000e-004        | 0.1147        | 0.0303         | 6.3000e-004        | 0.0309        |          | 108.4294        | 108.4294        | 3.0400e-003        | 2.8000e-003        | 109.3405        |
| <b>Total</b> | <b>0.0438</b> | <b>0.0720</b> | <b>0.4366</b> | <b>1.2200e-003</b> | <b>0.1182</b> | <b>1.2700e-003</b> | <b>0.1194</b> | <b>0.0314</b>  | <b>1.1900e-003</b> | <b>0.0326</b> |          | <b>124.5092</b> | <b>124.5092</b> | <b>3.4800e-003</b> | <b>5.3400e-003</b> | <b>126.1879</b> |

**3.3 Trenching - 2021**

**Unmitigated Construction On-Site**

|              | ROG           | NOx            | CO             | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2         | Total CO2         | CH4           | N2O | CO2e              |
|--------------|---------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|-------------------|-------------------|---------------|-----|-------------------|
| Category     | lb/day        |                |                |               |               |               |               |                |               |               | lb/day   |                   |                   |               |     |                   |
| Off-Road     | 1.8602        | 17.0102        | 16.1213        | 0.0316        |               | 0.9509        | 0.9509        |                | 0.9040        | 0.9040        |          | 3,004.0412        | 3,004.0412        | 0.6259        |     | 3,019.6894        |
| <b>Total</b> | <b>1.8602</b> | <b>17.0102</b> | <b>16.1213</b> | <b>0.0316</b> |               | <b>0.9509</b> | <b>0.9509</b> |                | <b>0.9040</b> | <b>0.9040</b> |          | <b>3,004.0412</b> | <b>3,004.0412</b> | <b>0.6259</b> |     | <b>3,019.6894</b> |

Modification of Existing Marine/Harbor Facility - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.3 Trenching - 2021**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4                | N2O                | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|-----------------|-----------------|--------------------|--------------------|-----------------|
| Category     | lb/day        |               |               |                    |               |                    |               |                |                    |               | lb/day   |                 |                 |                    |                    |                 |
| Hauling      | 9.6000e-004   | 0.0271        | 6.5100e-003   | 1.0000e-004        | 2.6300e-003   | 3.8000e-004        | 3.0000e-003   | 7.2000e-004    | 3.6000e-004        | 1.0800e-003   |          | 10.2910         | 10.2910         | 2.8000e-004        | 1.6300e-003        | 10.7823         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        |          | 0.0000          | 0.0000          | 0.0000             | 0.0000             | 0.0000          |
| Worker       | 0.0423        | 0.0297        | 0.4264        | 1.0700e-003        | 0.1141        | 6.8000e-004        | 0.1147        | 0.0303         | 6.3000e-004        | 0.0309        |          | 108.4294        | 108.4294        | 3.0400e-003        | 2.8000e-003        | 109.3405        |
| <b>Total</b> | <b>0.0433</b> | <b>0.0568</b> | <b>0.4329</b> | <b>1.1700e-003</b> | <b>0.1167</b> | <b>1.0600e-003</b> | <b>0.1177</b> | <b>0.0310</b>  | <b>9.9000e-004</b> | <b>0.0320</b> |          | <b>118.7205</b> | <b>118.7205</b> | <b>3.3200e-003</b> | <b>4.4300e-003</b> | <b>120.1229</b> |

**Mitigated Construction On-Site**

|              | ROG           | NOx            | CO             | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O | CO2e              |
|--------------|---------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|-----|-------------------|
| Category     | lb/day        |                |                |               |               |               |               |                |               |               | lb/day        |                   |                   |               |     |                   |
| Off-Road     | 1.8602        | 17.0102        | 16.1213        | 0.0316        |               | 0.9509        | 0.9509        |                | 0.9040        | 0.9040        | 0.0000        | 3,004.0412        | 3,004.0412        | 0.6259        |     | 3,019.6894        |
| <b>Total</b> | <b>1.8602</b> | <b>17.0102</b> | <b>16.1213</b> | <b>0.0316</b> |               | <b>0.9509</b> | <b>0.9509</b> |                | <b>0.9040</b> | <b>0.9040</b> | <b>0.0000</b> | <b>3,004.0412</b> | <b>3,004.0412</b> | <b>0.6259</b> |     | <b>3,019.6894</b> |

Modification of Existing Marine/Harbor Facility - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.3 Trenching - 2021**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4                | N2O                | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|-----------------|-----------------|--------------------|--------------------|-----------------|
| Category     | lb/day        |               |               |                    |               |                    |               |                |                    |               | lb/day   |                 |                 |                    |                    |                 |
| Hauling      | 9.6000e-004   | 0.0271        | 6.5100e-003   | 1.0000e-004        | 2.6300e-003   | 3.8000e-004        | 3.0000e-003   | 7.2000e-004    | 3.6000e-004        | 1.0800e-003   |          | 10.2910         | 10.2910         | 2.8000e-004        | 1.6300e-003        | 10.7823         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        |          | 0.0000          | 0.0000          | 0.0000             | 0.0000             | 0.0000          |
| Worker       | 0.0423        | 0.0297        | 0.4264        | 1.0700e-003        | 0.1141        | 6.8000e-004        | 0.1147        | 0.0303         | 6.3000e-004        | 0.0309        |          | 108.4294        | 108.4294        | 3.0400e-003        | 2.8000e-003        | 109.3405        |
| <b>Total</b> | <b>0.0433</b> | <b>0.0568</b> | <b>0.4329</b> | <b>1.1700e-003</b> | <b>0.1167</b> | <b>1.0600e-003</b> | <b>0.1177</b> | <b>0.0310</b>  | <b>9.9000e-004</b> | <b>0.0320</b> |          | <b>118.7205</b> | <b>118.7205</b> | <b>3.3200e-003</b> | <b>4.4300e-003</b> | <b>120.1229</b> |

**3.4 System Installation - 2021**

**Unmitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2         | Total CO2         | CH4           | N2O | CO2e              |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|-------------------|-------------------|---------------|-----|-------------------|
| Category     | lb/day        |               |               |               |               |               |               |                |               |               | lb/day   |                   |                   |               |     |                   |
| Off-Road     | 0.9659        | 8.2769        | 9.5362        | 0.0152        |               | 0.4887        | 0.4887        |                | 0.4730        | 0.4730        |          | 1,447.2295        | 1,447.2295        | 0.2027        |     | 1,452.2980        |
| <b>Total</b> | <b>0.9659</b> | <b>8.2769</b> | <b>9.5362</b> | <b>0.0152</b> |               | <b>0.4887</b> | <b>0.4887</b> |                | <b>0.4730</b> | <b>0.4730</b> |          | <b>1,447.2295</b> | <b>1,447.2295</b> | <b>0.2027</b> |     | <b>1,452.2980</b> |



Modification of Existing Marine/Harbor Facility - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 System Installation - 2021**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4                | N2O                | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|-----------------|-----------------|--------------------|--------------------|-----------------|
| Category     | lb/day        |               |               |                    |               |                    |               |                |                    |               | lb/day   |                 |                 |                    |                    |                 |
| Hauling      | 1.6000e-003   | 0.0452        | 0.0109        | 1.6000e-004        | 4.3800e-003   | 6.3000e-004        | 5.0000e-003   | 1.2000e-003    | 6.0000e-004        | 1.8000e-003   |          | 17.1517         | 17.1517         | 4.7000e-004        | 2.7100e-003        | 17.9706         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        |          | 0.0000          | 0.0000          | 0.0000             | 0.0000             | 0.0000          |
| Worker       | 0.0423        | 0.0297        | 0.4264        | 1.0700e-003        | 0.1141        | 6.8000e-004        | 0.1147        | 0.0303         | 6.3000e-004        | 0.0309        |          | 108.4294        | 108.4294        | 3.0400e-003        | 2.8000e-003        | 109.3405        |
| <b>Total</b> | <b>0.0439</b> | <b>0.0748</b> | <b>0.4372</b> | <b>1.2300e-003</b> | <b>0.1184</b> | <b>1.3100e-003</b> | <b>0.1197</b> | <b>0.0315</b>  | <b>1.2300e-003</b> | <b>0.0327</b> |          | <b>125.5812</b> | <b>125.5812</b> | <b>3.5100e-003</b> | <b>5.5100e-003</b> | <b>127.3111</b> |

**Mitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O | CO2e              |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|-----|-------------------|
| Category     | lb/day        |               |               |               |               |               |               |                |               |               | lb/day        |                   |                   |               |     |                   |
| Off-Road     | 0.9659        | 8.2769        | 9.5362        | 0.0152        |               | 0.4887        | 0.4887        |                | 0.4730        | 0.4730        | 0.0000        | 1,447.2295        | 1,447.2295        | 0.2027        |     | 1,452.2980        |
| <b>Total</b> | <b>0.9659</b> | <b>8.2769</b> | <b>9.5362</b> | <b>0.0152</b> |               | <b>0.4887</b> | <b>0.4887</b> |                | <b>0.4730</b> | <b>0.4730</b> | <b>0.0000</b> | <b>1,447.2295</b> | <b>1,447.2295</b> | <b>0.2027</b> |     | <b>1,452.2980</b> |

Modification of Existing Marine/Harbor Facility - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 System Installation - 2021**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4                | N2O                | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|-----------------|-----------------|--------------------|--------------------|-----------------|
| Category     | lb/day        |               |               |                    |               |                    |               |                |                    |               | lb/day   |                 |                 |                    |                    |                 |
| Hauling      | 1.6000e-003   | 0.0452        | 0.0109        | 1.6000e-004        | 4.3800e-003   | 6.3000e-004        | 5.0000e-003   | 1.2000e-003    | 6.0000e-004        | 1.8000e-003   |          | 17.1517         | 17.1517         | 4.7000e-004        | 2.7100e-003        | 17.9706         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        |          | 0.0000          | 0.0000          | 0.0000             | 0.0000             | 0.0000          |
| Worker       | 0.0423        | 0.0297        | 0.4264        | 1.0700e-003        | 0.1141        | 6.8000e-004        | 0.1147        | 0.0303         | 6.3000e-004        | 0.0309        |          | 108.4294        | 108.4294        | 3.0400e-003        | 2.8000e-003        | 109.3405        |
| <b>Total</b> | <b>0.0439</b> | <b>0.0748</b> | <b>0.4372</b> | <b>1.2300e-003</b> | <b>0.1184</b> | <b>1.3100e-003</b> | <b>0.1197</b> | <b>0.0315</b>  | <b>1.2300e-003</b> | <b>0.0327</b> |          | <b>125.5812</b> | <b>125.5812</b> | <b>3.5100e-003</b> | <b>5.5100e-003</b> | <b>127.3111</b> |

Modification of Existing Marine/Harbor Facility - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**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    | lb/day |        |        |        |               |              |            |                |               |             | lb/day   |           |           |        |        |        |
| 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 |
| 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 |

**4.2 Trip Summary Information**

| Land Use                   | Average Daily Trip Rate |          |        | Unmitigated | Mitigated  |
|----------------------------|-------------------------|----------|--------|-------------|------------|
|                            | Weekday                 | Saturday | Sunday | Annual VMT  | Annual VMT |
| 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 Non-Asphalt Surfaces | 9.50       | 7.30       | 7.30        | 0.00       | 0.00       | 0.00        | 0              | 0        | 0       |

**4.4 Fleet Mix**

| Land Use                   | LDA      | LDT1     | LDT2     | MDV      | LHD1     | LHD2     | MHD      | HHD      | OBUS     | UBUS     | MCY      | SBUS     | MH       |
|----------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Other Non-Asphalt Surfaces | 0.543438 | 0.060776 | 0.184542 | 0.125993 | 0.024133 | 0.006619 | 0.012016 | 0.011244 | 0.000789 | 0.000455 | 0.025773 | 0.000920 | 0.003302 |

Modification of Existing Marine/Harbor Facility - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

|                        | ROG    | NOx    | CO     | SO2    | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4    | N2O    | CO2e   |
|------------------------|--------|--------|--------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|--------|--------|--------|
| Category               | lb/day |        |        |        |               |              |            |                |               |             | lb/day   |           |           |        |        |        |
| NaturalGas Mitigated   | 0.0000 | 0.0000 | 0.0000 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      |          | 0.0000    | 0.0000    | 0.0000 | 0.0000 | 0.0000 |
| NaturalGas 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 |

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

|                            | NaturalGas Use | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2     | Total CO2     | CH4           | N2O           | CO2e          |
|----------------------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|---------------|---------------|---------------|---------------|---------------|
| Land Use                   | kBTU/yr        | lb/day        |               |               |               |               |               |               |                |               |               | lb/day   |               |               |               |               |               |
| Other Non-Asphalt Surfaces | 0              | 0.0000        | 0.0000        | 0.0000        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        |
| <b>Total</b>               |                | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |

Modification of Existing Marine/Harbor Facility - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.2 Energy by Land Use - Natural Gas**

Mitigated

|                            | Natural Gas Use | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2     | Total CO2     | CH4           | N2O           | CO2e          |
|----------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|---------------|---------------|---------------|---------------|---------------|
| Land Use                   | kBTU/yr         | lb/day        |               |               |               |               |               |               |                |               |               | lb/day   |               |               |               |               |               |
| Other Non-Asphalt Surfaces | 0               | 0.0000        | 0.0000        | 0.0000        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        |
| <b>Total</b>               |                 | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |

**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    | lb/day |        |             |        |               |              |            |                |               |             | lb/day   |             |             |        |     |             |
| Mitigated   | 0.1187 | 0.0000 | 5.1000e-004 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      |          | 1.0900e-003 | 1.0900e-003 | 0.0000 |     | 1.1600e-003 |
| Unmitigated | 0.1187 | 0.0000 | 5.1000e-004 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      |          | 1.0900e-003 | 1.0900e-003 | 0.0000 |     | 1.1600e-003 |

Modification of Existing Marine/Harbor Facility - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**6.2 Area by SubCategory**

**Unmitigated**

|                       | ROG           | NOx           | CO                 | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2          | Total CO2          | CH4           | N2O | CO2e               |
|-----------------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|--------------------|--------------------|---------------|-----|--------------------|
| SubCategory           | lb/day        |               |                    |               |               |               |               |                |               |               | lb/day   |                    |                    |               |     |                    |
| Architectural Coating | 0.0415        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Consumer Products     | 0.0771        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Landscaping           | 5.0000e-005   | 0.0000        | 5.1000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 1.0900e-003        | 1.0900e-003        | 0.0000        |     | 1.1600e-003        |
| <b>Total</b>          | <b>0.1187</b> | <b>0.0000</b> | <b>5.1000e-004</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>1.0900e-003</b> | <b>1.0900e-003</b> | <b>0.0000</b> |     | <b>1.1600e-003</b> |

Modification of Existing Marine/Harbor Facility - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**6.2 Area by SubCategory**

Mitigated

|                       | ROG           | NOx           | CO                 | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2          | Total CO2          | CH4           | N2O | CO2e               |
|-----------------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|--------------------|--------------------|---------------|-----|--------------------|
| SubCategory           | lb/day        |               |                    |               |               |               |               |                |               |               | lb/day   |                    |                    |               |     |                    |
| Architectural Coating | 0.0415        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Consumer Products     | 0.0771        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Landscaping           | 5.0000e-005   | 0.0000        | 5.1000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 1.0900e-003        | 1.0900e-003        | 0.0000        |     | 1.1600e-003        |
| <b>Total</b>          | <b>0.1187</b> | <b>0.0000</b> | <b>5.1000e-004</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>1.0900e-003</b> | <b>1.0900e-003</b> | <b>0.0000</b> |     | <b>1.1600e-003</b> |

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

Modification of Existing Marine/Harbor Facility - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

**9.0 Operational Offroad**

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

**10.0 Stationary Equipment**

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**Fire Pumps and Emergency Generators**

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

**Boilers**

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

**User Defined Equipment**

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

**11.0 Vegetation**

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Modification of Existing Marine/Harbor Facility - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**Modification of Existing Marine/Harbor Facility  
Statewide , Winter**

**1.0 Project Characteristics**

**1.1 Land Usage**

| Land Uses                  | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|----------------------------|------|--------|-------------|--------------------|------------|
| Other Non-Asphalt Surfaces | 5.00 | Acre   | 5.00        | 217,800.00         | 0          |

**1.2 Other Project Characteristics**

|                                |                         |                                |     |                                  |      |
|--------------------------------|-------------------------|--------------------------------|-----|----------------------------------|------|
| <b>Urbanization</b>            | Urban                   | <b>Wind Speed (m/s)</b>        | 2.2 | <b>Precipitation Freq (Days)</b> | 54   |
| <b>Climate Zone</b>            | 4                       |                                |     | <b>Operational Year</b>          | 2030 |
| <b>Utility Company</b>         | Alameda Municipal Power |                                |     |                                  |      |
| <b>CO2 Intensity (lb/MWhr)</b> | 0                       | <b>CH4 Intensity (lb/MWhr)</b> | 0   | <b>N2O Intensity (lb/MWhr)</b>   | 0    |

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

Project Characteristics - Construction emissions only.

Land Use -

Construction Phase - Assumed construction would occur from January 4, 2021 through April 5, 2021.

Off-road Equipment - Assumed construction unit amount and hours/day.

Off-road Equipment - Assumed construction unit amount and hours/day.

Off-road Equipment - Assumed construction unit amount and hours/day.

Trips and VMT - Assumed worker, vendor and hauling trips and trip lengths.

Grading - Assumed no grading.

| Table Name           | Column Name | Default Value | New Value |
|----------------------|-------------|---------------|-----------|
| tblConstructionPhase | NumDays     | 230.00        | 30.00     |
| tblConstructionPhase | NumDays     | 5.00          | 16.00     |

Modification of Existing Marine/Harbor Facility - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

|                     |                            |       |       |
|---------------------|----------------------------|-------|-------|
| tblGrading          | AcresOfGrading             | 6.00  | 0.00  |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00  | 1.00  |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00  | 1.00  |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 4.00  | 1.00  |
| tblOffRoadEquipment | UsageHours                 | 7.00  | 8.00  |
| tblOffRoadEquipment | UsageHours                 | 8.00  | 6.00  |
| tblTripsAndVMT      | HaulingTripLength          | 20.00 | 15.00 |
| tblTripsAndVMT      | HaulingTripLength          | 20.00 | 15.00 |
| tblTripsAndVMT      | HaulingTripLength          | 20.00 | 15.00 |
| tblTripsAndVMT      | HaulingTripNumber          | 0.00  | 5.00  |
| tblTripsAndVMT      | HaulingTripNumber          | 0.00  | 4.00  |
| tblTripsAndVMT      | HaulingTripNumber          | 0.00  | 10.00 |
| tblTripsAndVMT      | VendorTripLength           | 7.30  | 15.00 |
| tblTripsAndVMT      | VendorTripLength           | 7.30  | 15.00 |
| tblTripsAndVMT      | VendorTripLength           | 7.30  | 15.00 |
| tblTripsAndVMT      | VendorTripNumber           | 36.00 | 0.00  |
| tblTripsAndVMT      | WorkerTripLength           | 10.80 | 15.00 |
| tblTripsAndVMT      | WorkerTripLength           | 10.80 | 15.00 |
| tblTripsAndVMT      | WorkerTripLength           | 10.80 | 15.00 |
| tblTripsAndVMT      | WorkerTripNumber           | 5.00  | 10.00 |
| tblTripsAndVMT      | WorkerTripNumber           | 20.00 | 10.00 |
| tblTripsAndVMT      | WorkerTripNumber           | 91.00 | 10.00 |

**2.0 Emissions Summary**

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Modification of Existing Marine/Harbor Facility - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**2.1 Overall Construction (Maximum Daily Emission)**

**Unmitigated Construction**

|                | ROG           | NOx            | CO             | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2              | Total CO2              | CH4           | N2O                     | CO2e                   |
|----------------|---------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|------------------------|------------------------|---------------|-------------------------|------------------------|
| Year           | lb/day        |                |                |               |               |               |               |                |               |               | lb/day        |                        |                        |               |                         |                        |
| 2021           | 1.9044        | 17.0730        | 16.5084        | 0.0327        | 0.1184        | 0.9519        | 1.0686        | 0.0315         | 0.9050        | 0.9359        | 0.0000        | 3,114.981<br>1         | 3,114.981<br>1         | 0.6294        | 5.7800e-<br>003         | 3,132.115<br>7         |
| <b>Maximum</b> | <b>1.9044</b> | <b>17.0730</b> | <b>16.5084</b> | <b>0.0327</b> | <b>0.1184</b> | <b>0.9519</b> | <b>1.0686</b> | <b>0.0315</b>  | <b>0.9050</b> | <b>0.9359</b> | <b>0.0000</b> | <b>3,114.981<br/>1</b> | <b>3,114.981<br/>1</b> | <b>0.6294</b> | <b>5.7800e-<br/>003</b> | <b>3,132.115<br/>7</b> |

**Mitigated Construction**

|                | ROG           | NOx            | CO             | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2              | Total CO2              | CH4           | N2O                     | CO2e                   |
|----------------|---------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|------------------------|------------------------|---------------|-------------------------|------------------------|
| Year           | lb/day        |                |                |               |               |               |               |                |               |               | lb/day        |                        |                        |               |                         |                        |
| 2021           | 1.9044        | 17.0730        | 16.5084        | 0.0327        | 0.1184        | 0.9519        | 1.0686        | 0.0315         | 0.9050        | 0.9359        | 0.0000        | 3,114.981<br>1         | 3,114.981<br>1         | 0.6294        | 5.7800e-<br>003         | 3,132.115<br>7         |
| <b>Maximum</b> | <b>1.9044</b> | <b>17.0730</b> | <b>16.5084</b> | <b>0.0327</b> | <b>0.1184</b> | <b>0.9519</b> | <b>1.0686</b> | <b>0.0315</b>  | <b>0.9050</b> | <b>0.9359</b> | <b>0.0000</b> | <b>3,114.981<br/>1</b> | <b>3,114.981<br/>1</b> | <b>0.6294</b> | <b>5.7800e-<br/>003</b> | <b>3,132.115<br/>7</b> |

|                          | ROG         | NOx         | CO          | SO2         | Fugitive PM10 | Exhaust PM10 | PM10 Total  | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2    | NBio- CO2   | Total CO2   | CH4         | N2O         | CO2e        |
|--------------------------|-------------|-------------|-------------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Percent Reduction</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b>   | <b>0.00</b>  | <b>0.00</b> | <b>0.00</b>    | <b>0.00</b>   | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> |

Modification of Existing Marine/Harbor Facility - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**2.2 Overall Operational**

**Unmitigated Operational**

|              | ROG           | NOx           | CO                 | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2          | Total CO2          | CH4           | N2O           | CO2e               |
|--------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|--------------------|--------------------|---------------|---------------|--------------------|
| Category     | lb/day        |               |                    |               |               |               |               |                |               |               | lb/day   |                    |                    |               |               |                    |
| Area         | 0.1187        | 0.0000        | 5.1000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 1.0900e-003        | 1.0900e-003        | 0.0000        |               | 1.1600e-003        |
| 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             |
| 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             |
| <b>Total</b> | <b>0.1187</b> | <b>0.0000</b> | <b>5.1000e-004</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b>  | <b>0.0000</b> | <b>0.0000</b> |          | <b>1.0900e-003</b> | <b>1.0900e-003</b> | <b>0.0000</b> | <b>0.0000</b> | <b>1.1600e-003</b> |

**Mitigated Operational**

|              | ROG           | NOx           | CO                 | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2          | Total CO2          | CH4           | N2O           | CO2e               |
|--------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|--------------------|--------------------|---------------|---------------|--------------------|
| Category     | lb/day        |               |                    |               |               |               |               |                |               |               | lb/day   |                    |                    |               |               |                    |
| Area         | 0.1187        | 0.0000        | 5.1000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 1.0900e-003        | 1.0900e-003        | 0.0000        |               | 1.1600e-003        |
| 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             |
| 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             |
| <b>Total</b> | <b>0.1187</b> | <b>0.0000</b> | <b>5.1000e-004</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b>  | <b>0.0000</b> | <b>0.0000</b> |          | <b>1.0900e-003</b> | <b>1.0900e-003</b> | <b>0.0000</b> | <b>0.0000</b> | <b>1.1600e-003</b> |

Modification of Existing Marine/Harbor Facility - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

|                   | ROG  | NOx  | CO   | SO2  | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4  | N2O  | CO2e |
|-------------------|------|------|------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| 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      | 1/4/2021   | 1/25/2021 | 5             | 16       |                   |
| 2            | Trenching           | Trenching             | 1/26/2021  | 2/22/2021 | 5             | 20       |                   |
| 3            | System Installation | Building Construction | 2/23/2021  | 4/5/2021  | 5             | 30       |                   |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 5**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name       | Offroad Equipment Type    | Amount | Usage Hours | Horse Power | Load Factor |
|------------------|---------------------------|--------|-------------|-------------|-------------|
| Site Preparation | Graders                   | 1      | 6.00        | 187         | 0.41        |
| Site Preparation | Tractors/Loaders/Backhoes | 1      | 6.00        | 97          | 0.37        |
| Trenching        | Bore/Drill Rigs           | 1      | 8.00        | 221         | 0.50        |
| Trenching        | Cement and Mortar Mixers  | 1      | 8.00        | 9           | 0.56        |
| Trenching        | Concrete/Industrial Saws  | 1      | 8.00        | 81          | 0.73        |
| Trenching        | Generator Sets            | 1      | 8.00        | 84          | 0.74        |
| Trenching        | Plate Compactors          | 1      | 8.00        | 8           | 0.43        |
| Trenching        | Tractors/Loaders/Backhoes | 1      | 8.00        | 97          | 0.37        |

Modification of Existing Marine/Harbor Facility - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

|                     |                           |   |      |    |      |
|---------------------|---------------------------|---|------|----|------|
| Trenching           | Trenchers                 | 2 | 6.00 | 78 | 0.50 |
| System Installation | Air Compressors           | 1 | 8.00 | 78 | 0.48 |
| System Installation | Forklifts                 | 1 | 8.00 | 89 | 0.20 |
| System Installation | Generator Sets            | 1 | 8.00 | 84 | 0.74 |
| System Installation | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |

**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    | 2                       | 10.00              | 0.00               | 5.00                | 15.00              | 15.00              | 15.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Trenching           | 8                       | 10.00              | 0.00               | 4.00                | 15.00              | 15.00              | 15.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| System Installation | 4                       | 10.00              | 0.00               | 10.00               | 15.00              | 15.00              | 15.00               | LD_Mix               | HDT_Mix              | HHDT                  |

**3.1 Mitigation Measures Construction**

**3.2 Site Preparation - 2021**

**Unmitigated Construction On-Site**

|               | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4           | N2O | CO2e            |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|-----------------|-----------------|---------------|-----|-----------------|
| Category      | lb/day        |               |               |                    |               |               |               |                |               |               | lb/day   |                 |                 |               |     |                 |
| Fugitive Dust |               |               |               |                    | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        |          |                 | 0.0000          |               |     | 0.0000          |
| Off-Road      | 0.4802        | 5.8653        | 3.0206        | 7.3000e-003        |               | 0.2246        | 0.2246        |                | 0.2066        | 0.2066        |          | 706.9381        | 706.9381        | 0.2286        |     | 712.6541        |
| <b>Total</b>  | <b>0.4802</b> | <b>5.8653</b> | <b>3.0206</b> | <b>7.3000e-003</b> | <b>0.0000</b> | <b>0.2246</b> | <b>0.2246</b> | <b>0.0000</b>  | <b>0.2066</b> | <b>0.2066</b> |          | <b>706.9381</b> | <b>706.9381</b> | <b>0.2286</b> |     | <b>712.6541</b> |

Modification of Existing Marine/Harbor Facility - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.2 Site Preparation - 2021**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4                | N2O                | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|-----------------|-----------------|--------------------|--------------------|-----------------|
| Category     | lb/day        |               |               |                    |               |                    |               |                |                    |               | lb/day   |                 |                 |                    |                    |                 |
| Hauling      | 1.4600e-003   | 0.0447        | 0.0104        | 1.5000e-004        | 4.1000e-003   | 5.9000e-004        | 4.6900e-003   | 1.1300e-003    | 5.6000e-004        | 1.6900e-003   |          | 16.0876         | 16.0876         | 4.3000e-004        | 2.5400e-003        | 16.8556         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        |          | 0.0000          | 0.0000          | 0.0000             | 0.0000             | 0.0000          |
| Worker       | 0.0433        | 0.0341        | 0.3805        | 1.0000e-003        | 0.1141        | 6.8000e-004        | 0.1147        | 0.0303         | 6.3000e-004        | 0.0309        |          | 100.6439        | 100.6439        | 3.1600e-003        | 3.0700e-003        | 101.6387        |
| <b>Total</b> | <b>0.0447</b> | <b>0.0788</b> | <b>0.3909</b> | <b>1.1500e-003</b> | <b>0.1182</b> | <b>1.2700e-003</b> | <b>0.1194</b> | <b>0.0314</b>  | <b>1.1900e-003</b> | <b>0.0326</b> |          | <b>116.7315</b> | <b>116.7315</b> | <b>3.5900e-003</b> | <b>5.6100e-003</b> | <b>118.4943</b> |

**Mitigated Construction On-Site**

|               | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O | CO2e            |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|-----|-----------------|
| Category      | lb/day        |               |               |                    |               |               |               |                |               |               | lb/day        |                 |                 |               |     |                 |
| Fugitive Dust |               |               |               |                    | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        |               |                 | 0.0000          |               |     | 0.0000          |
| Off-Road      | 0.4802        | 5.8653        | 3.0206        | 7.3000e-003        |               | 0.2246        | 0.2246        |                | 0.2066        | 0.2066        | 0.0000        | 706.9381        | 706.9381        | 0.2286        |     | 712.6541        |
| <b>Total</b>  | <b>0.4802</b> | <b>5.8653</b> | <b>3.0206</b> | <b>7.3000e-003</b> | <b>0.0000</b> | <b>0.2246</b> | <b>0.2246</b> | <b>0.0000</b>  | <b>0.2066</b> | <b>0.2066</b> | <b>0.0000</b> | <b>706.9381</b> | <b>706.9381</b> | <b>0.2286</b> |     | <b>712.6541</b> |

Modification of Existing Marine/Harbor Facility - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.2 Site Preparation - 2021**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4                | N2O                | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|-----------------|-----------------|--------------------|--------------------|-----------------|
| Category     | lb/day        |               |               |                    |               |                    |               |                |                    |               | lb/day   |                 |                 |                    |                    |                 |
| Hauling      | 1.4600e-003   | 0.0447        | 0.0104        | 1.5000e-004        | 4.1000e-003   | 5.9000e-004        | 4.6900e-003   | 1.1300e-003    | 5.6000e-004        | 1.6900e-003   |          | 16.0876         | 16.0876         | 4.3000e-004        | 2.5400e-003        | 16.8556         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        |          | 0.0000          | 0.0000          | 0.0000             | 0.0000             | 0.0000          |
| Worker       | 0.0433        | 0.0341        | 0.3805        | 1.0000e-003        | 0.1141        | 6.8000e-004        | 0.1147        | 0.0303         | 6.3000e-004        | 0.0309        |          | 100.6439        | 100.6439        | 3.1600e-003        | 3.0700e-003        | 101.6387        |
| <b>Total</b> | <b>0.0447</b> | <b>0.0788</b> | <b>0.3909</b> | <b>1.1500e-003</b> | <b>0.1182</b> | <b>1.2700e-003</b> | <b>0.1194</b> | <b>0.0314</b>  | <b>1.1900e-003</b> | <b>0.0326</b> |          | <b>116.7315</b> | <b>116.7315</b> | <b>3.5900e-003</b> | <b>5.6100e-003</b> | <b>118.4943</b> |

**3.3 Trenching - 2021**

**Unmitigated Construction On-Site**

|              | ROG           | NOx            | CO             | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2         | Total CO2         | CH4           | N2O | CO2e              |
|--------------|---------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|-------------------|-------------------|---------------|-----|-------------------|
| Category     | lb/day        |                |                |               |               |               |               |                |               |               | lb/day   |                   |                   |               |     |                   |
| Off-Road     | 1.8602        | 17.0102        | 16.1213        | 0.0316        |               | 0.9509        | 0.9509        |                | 0.9040        | 0.9040        |          | 3,004.0412        | 3,004.0412        | 0.6259        |     | 3,019.6894        |
| <b>Total</b> | <b>1.8602</b> | <b>17.0102</b> | <b>16.1213</b> | <b>0.0316</b> |               | <b>0.9509</b> | <b>0.9509</b> |                | <b>0.9040</b> | <b>0.9040</b> |          | <b>3,004.0412</b> | <b>3,004.0412</b> | <b>0.6259</b> |     | <b>3,019.6894</b> |



Modification of Existing Marine/Harbor Facility - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.3 Trenching - 2021**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4                | N2O                | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|-----------------|-----------------|--------------------|--------------------|-----------------|
| Category     | lb/day        |               |               |                    |               |                    |               |                |                    |               | lb/day   |                 |                 |                    |                    |                 |
| Hauling      | 9.4000e-004   | 0.0286        | 6.6600e-003   | 1.0000e-004        | 2.6300e-003   | 3.8000e-004        | 3.0000e-003   | 7.2000e-004    | 3.6000e-004        | 1.0800e-003   |          | 10.2961         | 10.2961         | 2.8000e-004        | 1.6300e-003        | 10.7876         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        |          | 0.0000          | 0.0000          | 0.0000             | 0.0000             | 0.0000          |
| Worker       | 0.0433        | 0.0341        | 0.3805        | 1.0000e-003        | 0.1141        | 6.8000e-004        | 0.1147        | 0.0303         | 6.3000e-004        | 0.0309        |          | 100.6439        | 100.6439        | 3.1600e-003        | 3.0700e-003        | 101.6387        |
| <b>Total</b> | <b>0.0442</b> | <b>0.0627</b> | <b>0.3871</b> | <b>1.1000e-003</b> | <b>0.1167</b> | <b>1.0600e-003</b> | <b>0.1177</b> | <b>0.0310</b>  | <b>9.9000e-004</b> | <b>0.0320</b> |          | <b>110.9400</b> | <b>110.9400</b> | <b>3.4400e-003</b> | <b>4.7000e-003</b> | <b>112.4263</b> |

**Mitigated Construction On-Site**

|              | ROG           | NOx            | CO             | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O | CO2e              |
|--------------|---------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|-----|-------------------|
| Category     | lb/day        |                |                |               |               |               |               |                |               |               | lb/day        |                   |                   |               |     |                   |
| Off-Road     | 1.8602        | 17.0102        | 16.1213        | 0.0316        |               | 0.9509        | 0.9509        |                | 0.9040        | 0.9040        | 0.0000        | 3,004.0412        | 3,004.0412        | 0.6259        |     | 3,019.6894        |
| <b>Total</b> | <b>1.8602</b> | <b>17.0102</b> | <b>16.1213</b> | <b>0.0316</b> |               | <b>0.9509</b> | <b>0.9509</b> |                | <b>0.9040</b> | <b>0.9040</b> | <b>0.0000</b> | <b>3,004.0412</b> | <b>3,004.0412</b> | <b>0.6259</b> |     | <b>3,019.6894</b> |

Modification of Existing Marine/Harbor Facility - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.3 Trenching - 2021**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4                | N2O                | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|-----------------|-----------------|--------------------|--------------------|-----------------|
| Category     | lb/day        |               |               |                    |               |                    |               |                |                    |               | lb/day   |                 |                 |                    |                    |                 |
| Hauling      | 9.4000e-004   | 0.0286        | 6.6600e-003   | 1.0000e-004        | 2.6300e-003   | 3.8000e-004        | 3.0000e-003   | 7.2000e-004    | 3.6000e-004        | 1.0800e-003   |          | 10.2961         | 10.2961         | 2.8000e-004        | 1.6300e-003        | 10.7876         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        |          | 0.0000          | 0.0000          | 0.0000             | 0.0000             | 0.0000          |
| Worker       | 0.0433        | 0.0341        | 0.3805        | 1.0000e-003        | 0.1141        | 6.8000e-004        | 0.1147        | 0.0303         | 6.3000e-004        | 0.0309        |          | 100.6439        | 100.6439        | 3.1600e-003        | 3.0700e-003        | 101.6387        |
| <b>Total</b> | <b>0.0442</b> | <b>0.0627</b> | <b>0.3871</b> | <b>1.1000e-003</b> | <b>0.1167</b> | <b>1.0600e-003</b> | <b>0.1177</b> | <b>0.0310</b>  | <b>9.9000e-004</b> | <b>0.0320</b> |          | <b>110.9400</b> | <b>110.9400</b> | <b>3.4400e-003</b> | <b>4.7000e-003</b> | <b>112.4263</b> |

**3.4 System Installation - 2021**

**Unmitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2         | Total CO2         | CH4           | N2O | CO2e              |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|-------------------|-------------------|---------------|-----|-------------------|
| Category     | lb/day        |               |               |               |               |               |               |                |               |               | lb/day   |                   |                   |               |     |                   |
| Off-Road     | 0.9659        | 8.2769        | 9.5362        | 0.0152        |               | 0.4887        | 0.4887        |                | 0.4730        | 0.4730        |          | 1,447.2295        | 1,447.2295        | 0.2027        |     | 1,452.2980        |
| <b>Total</b> | <b>0.9659</b> | <b>8.2769</b> | <b>9.5362</b> | <b>0.0152</b> |               | <b>0.4887</b> | <b>0.4887</b> |                | <b>0.4730</b> | <b>0.4730</b> |          | <b>1,447.2295</b> | <b>1,447.2295</b> | <b>0.2027</b> |     | <b>1,452.2980</b> |

Modification of Existing Marine/Harbor Facility - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 System Installation - 2021**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4                | N2O                | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|-----------------|-----------------|--------------------|--------------------|-----------------|
| Category     | lb/day        |               |               |                    |               |                    |               |                |                    |               | lb/day   |                 |                 |                    |                    |                 |
| Hauling      | 1.5600e-003   | 0.0477        | 0.0111        | 1.6000e-004        | 4.3800e-003   | 6.3000e-004        | 5.0000e-003   | 1.2000e-003    | 6.0000e-004        | 1.8000e-003   |          | 17.1602         | 17.1602         | 4.6000e-004        | 2.7100e-003        | 17.9793         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        |          | 0.0000          | 0.0000          | 0.0000             | 0.0000             | 0.0000          |
| Worker       | 0.0433        | 0.0341        | 0.3805        | 1.0000e-003        | 0.1141        | 6.8000e-004        | 0.1147        | 0.0303         | 6.3000e-004        | 0.0309        |          | 100.6439        | 100.6439        | 3.1600e-003        | 3.0700e-003        | 101.6387        |
| <b>Total</b> | <b>0.0448</b> | <b>0.0818</b> | <b>0.3916</b> | <b>1.1600e-003</b> | <b>0.1184</b> | <b>1.3100e-003</b> | <b>0.1197</b> | <b>0.0315</b>  | <b>1.2300e-003</b> | <b>0.0327</b> |          | <b>117.8040</b> | <b>117.8040</b> | <b>3.6200e-003</b> | <b>5.7800e-003</b> | <b>119.6180</b> |

**Mitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O | CO2e              |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|-----|-------------------|
| Category     | lb/day        |               |               |               |               |               |               |                |               |               | lb/day        |                   |                   |               |     |                   |
| Off-Road     | 0.9659        | 8.2769        | 9.5362        | 0.0152        |               | 0.4887        | 0.4887        |                | 0.4730        | 0.4730        | 0.0000        | 1,447.2295        | 1,447.2295        | 0.2027        |     | 1,452.2980        |
| <b>Total</b> | <b>0.9659</b> | <b>8.2769</b> | <b>9.5362</b> | <b>0.0152</b> |               | <b>0.4887</b> | <b>0.4887</b> |                | <b>0.4730</b> | <b>0.4730</b> | <b>0.0000</b> | <b>1,447.2295</b> | <b>1,447.2295</b> | <b>0.2027</b> |     | <b>1,452.2980</b> |

Modification of Existing Marine/Harbor Facility - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 System Installation - 2021**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4                | N2O                | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|-----------------|-----------------|--------------------|--------------------|-----------------|
| Category     | lb/day        |               |               |                    |               |                    |               |                |                    |               | lb/day   |                 |                 |                    |                    |                 |
| Hauling      | 1.5600e-003   | 0.0477        | 0.0111        | 1.6000e-004        | 4.3800e-003   | 6.3000e-004        | 5.0000e-003   | 1.2000e-003    | 6.0000e-004        | 1.8000e-003   |          | 17.1602         | 17.1602         | 4.6000e-004        | 2.7100e-003        | 17.9793         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        |          | 0.0000          | 0.0000          | 0.0000             | 0.0000             | 0.0000          |
| Worker       | 0.0433        | 0.0341        | 0.3805        | 1.0000e-003        | 0.1141        | 6.8000e-004        | 0.1147        | 0.0303         | 6.3000e-004        | 0.0309        |          | 100.6439        | 100.6439        | 3.1600e-003        | 3.0700e-003        | 101.6387        |
| <b>Total</b> | <b>0.0448</b> | <b>0.0818</b> | <b>0.3916</b> | <b>1.1600e-003</b> | <b>0.1184</b> | <b>1.3100e-003</b> | <b>0.1197</b> | <b>0.0315</b>  | <b>1.2300e-003</b> | <b>0.0327</b> |          | <b>117.8040</b> | <b>117.8040</b> | <b>3.6200e-003</b> | <b>5.7800e-003</b> | <b>119.6180</b> |

Modification of Existing Marine/Harbor Facility - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**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    | lb/day |        |        |        |               |              |            |                |               |             | lb/day   |           |           |        |        |        |
| 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 |
| 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 |

**4.2 Trip Summary Information**

| Land Use                   | Average Daily Trip Rate |          |        | Unmitigated | Mitigated  |
|----------------------------|-------------------------|----------|--------|-------------|------------|
|                            | Weekday                 | Saturday | Sunday | Annual VMT  | Annual VMT |
| 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 Non-Asphalt Surfaces | 9.50       | 7.30       | 7.30        | 0.00       | 0.00       | 0.00        | 0              | 0        | 0       |

**4.4 Fleet Mix**

| Land Use                   | LDA      | LDT1     | LDT2     | MDV      | LHD1     | LHD2     | MHD      | HHD      | OBUS     | UBUS     | MCY      | SBUS     | MH       |
|----------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Other Non-Asphalt Surfaces | 0.543438 | 0.060776 | 0.184542 | 0.125993 | 0.024133 | 0.006619 | 0.012016 | 0.011244 | 0.000789 | 0.000455 | 0.025773 | 0.000920 | 0.003302 |

Modification of Existing Marine/Harbor Facility - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

|                        | ROG    | NOx    | CO     | SO2    | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4    | N2O    | CO2e   |
|------------------------|--------|--------|--------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|--------|--------|--------|
| Category               | lb/day |        |        |        |               |              |            |                |               |             | lb/day   |           |           |        |        |        |
| NaturalGas Mitigated   | 0.0000 | 0.0000 | 0.0000 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      |          | 0.0000    | 0.0000    | 0.0000 | 0.0000 | 0.0000 |
| NaturalGas 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 |

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

|                            | NaturalGas Use | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2     | Total CO2     | CH4           | N2O           | CO2e          |
|----------------------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|---------------|---------------|---------------|---------------|---------------|
| Land Use                   | kBTU/yr        | lb/day        |               |               |               |               |               |               |                |               |               | lb/day   |               |               |               |               |               |
| Other Non-Asphalt Surfaces | 0              | 0.0000        | 0.0000        | 0.0000        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        |
| <b>Total</b>               |                | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |

Modification of Existing Marine/Harbor Facility - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.2 Energy by Land Use - NaturalGas**

Mitigated

|                            | NaturalGas Use | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2     | Total CO2     | CH4           | N2O           | CO2e          |
|----------------------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|---------------|---------------|---------------|---------------|---------------|
| Land Use                   | kBTU/yr        | lb/day        |               |               |               |               |               |               |                |               |               | lb/day   |               |               |               |               |               |
| Other Non-Asphalt Surfaces | 0              | 0.0000        | 0.0000        | 0.0000        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        |
| <b>Total</b>               |                | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |

**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    | lb/day |        |             |        |               |              |            |                |               |             | lb/day   |             |             |        |     |             |
| Mitigated   | 0.1187 | 0.0000 | 5.1000e-004 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      |          | 1.0900e-003 | 1.0900e-003 | 0.0000 |     | 1.1600e-003 |
| Unmitigated | 0.1187 | 0.0000 | 5.1000e-004 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      |          | 1.0900e-003 | 1.0900e-003 | 0.0000 |     | 1.1600e-003 |

Modification of Existing Marine/Harbor Facility - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**6.2 Area by SubCategory**

**Unmitigated**

|                       | ROG           | NOx           | CO                 | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2          | Total CO2          | CH4           | N2O | CO2e               |
|-----------------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|--------------------|--------------------|---------------|-----|--------------------|
| SubCategory           | lb/day        |               |                    |               |               |               |               |                |               |               | lb/day   |                    |                    |               |     |                    |
| Architectural Coating | 0.0415        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Consumer Products     | 0.0771        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Landscaping           | 5.0000e-005   | 0.0000        | 5.1000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 1.0900e-003        | 1.0900e-003        | 0.0000        |     | 1.1600e-003        |
| <b>Total</b>          | <b>0.1187</b> | <b>0.0000</b> | <b>5.1000e-004</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>1.0900e-003</b> | <b>1.0900e-003</b> | <b>0.0000</b> |     | <b>1.1600e-003</b> |



Modification of Existing Marine/Harbor Facility - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**6.2 Area by SubCategory**

Mitigated

|                       | ROG           | NOx           | CO                 | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2          | Total CO2          | CH4           | N2O | CO2e               |
|-----------------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|--------------------|--------------------|---------------|-----|--------------------|
| SubCategory           | lb/day        |               |                    |               |               |               |               |                |               |               | lb/day   |                    |                    |               |     |                    |
| Architectural Coating | 0.0415        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Consumer Products     | 0.0771        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Landscaping           | 5.0000e-005   | 0.0000        | 5.1000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 1.0900e-003        | 1.0900e-003        | 0.0000        |     | 1.1600e-003        |
| <b>Total</b>          | <b>0.1187</b> | <b>0.0000</b> | <b>5.1000e-004</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>1.0900e-003</b> | <b>1.0900e-003</b> | <b>0.0000</b> |     | <b>1.1600e-003</b> |

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

Modification of Existing Marine/Harbor Facility - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

**9.0 Operational Offroad**

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

**10.0 Stationary Equipment**

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**Fire Pumps and Emergency Generators**

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

**Boilers**

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

**User Defined Equipment**

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

**11.0 Vegetation**

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New Construction of 1-2 MW Charging Infrastructure - Statewide , Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**New Construction of 1-2 MW Charging Infrastructure  
Statewide , Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

| Land Uses                  | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|----------------------------|------|--------|-------------|--------------------|------------|
| Other Non-Asphalt Surfaces | 5.00 | Acre   | 5.00        | 217,800.00         | 0          |

**1.2 Other Project Characteristics**

|                                |                         |                                |     |                                  |      |
|--------------------------------|-------------------------|--------------------------------|-----|----------------------------------|------|
| <b>Urbanization</b>            | Urban                   | <b>Wind Speed (m/s)</b>        | 2.2 | <b>Precipitation Freq (Days)</b> | 54   |
| <b>Climate Zone</b>            | 4                       |                                |     | <b>Operational Year</b>          | 2030 |
| <b>Utility Company</b>         | Alameda Municipal Power |                                |     |                                  |      |
| <b>CO2 Intensity (lb/MWhr)</b> | 0                       | <b>CH4 Intensity (lb/MWhr)</b> | 0   | <b>N2O Intensity (lb/MWhr)</b>   | 0    |

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

Project Characteristics - Construction emissions only.

Land Use -

Construction Phase - Assumed construction would occur from January 4, 2021 through May 5, 2021.

Off-road Equipment - Assumed construction unit amount and hours/day.

Off-road Equipment - Assumed construction unit amount and hours/day.

Off-road Equipment - Assumed construction unit amount and hours/day.

Grading - Assumed no grading.

Trips and VMT - Assumed worker, vendor and hauling trips and trip lengths.

| Table Name           | Column Name | Default Value | New Value |
|----------------------|-------------|---------------|-----------|
| tblConstructionPhase | NumDays     | 5.00          | 16.00     |
| tblConstructionPhase | NumDays     | 230.00        | 45.00     |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

|                     |                            |       |                           |
|---------------------|----------------------------|-------|---------------------------|
| tblGrading          | AcresOfGrading             | 6.00  | 0.00                      |
| tblOffRoadEquipment | LoadFactor                 | 0.37  | 0.37                      |
| tblOffRoadEquipment | LoadFactor                 | 0.20  | 0.20                      |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Graders                   |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Tractors/Loaders/Backhoes |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Trenchers                 |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Tractors/Loaders/Backhoes |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Plate Compactors          |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Generator Sets            |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Concrete/Industrial Saws  |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Cement and Mortar Mixers  |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Bore/Drill Rigs           |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Tractors/Loaders/Backhoes |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Air Compressors           |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Forklifts                 |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Generator Sets            |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 4.00  | 1.00                      |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00  | 1.00                      |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00  | 1.00                      |
| tblOffRoadEquipment | UsageHours                 | 8.00  | 6.00                      |
| tblOffRoadEquipment | UsageHours                 | 7.00  | 8.00                      |
| tblTripsAndVMT      | HaulingTripLength          | 20.00 | 30.00                     |
| tblTripsAndVMT      | HaulingTripLength          | 20.00 | 30.00                     |
| tblTripsAndVMT      | HaulingTripLength          | 20.00 | 30.00                     |
| tblTripsAndVMT      | HaulingTripNumber          | 0.00  | 5.00                      |
| tblTripsAndVMT      | HaulingTripNumber          | 0.00  | 10.00                     |
| tblTripsAndVMT      | HaulingTripNumber          | 0.00  | 4.00                      |
| tblTripsAndVMT      | VendorTripLength           | 7.30  | 30.00                     |
| tblTripsAndVMT      | VendorTripLength           | 7.30  | 30.00                     |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

|                |                  |       |       |
|----------------|------------------|-------|-------|
| tbITripsAndVMT | VendorTripLength | 7.30  | 30.00 |
| tbITripsAndVMT | VendorTripNumber | 36.00 | 0.00  |
| tbITripsAndVMT | WorkerTripLength | 10.80 | 30.00 |
| tbITripsAndVMT | WorkerTripLength | 10.80 | 30.00 |
| tbITripsAndVMT | WorkerTripLength | 10.80 | 30.00 |
| tbITripsAndVMT | WorkerTripNumber | 5.00  | 10.00 |
| tbITripsAndVMT | WorkerTripNumber | 91.00 | 10.00 |

**2.0 Emissions Summary**

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New Construction of 1-2 MW Charging Infrastructure - Statewide , Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**2.1 Overall Construction**

**Unmitigated Construction**

|                | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5     | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4           | N2O                | CO2e           |
|----------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|----------------|---------------|--------------------|----------------|
| Year           | tons/yr       |               |               |                    |               |               |               |                    |               |               | MT/yr         |                |                |               |                    |                |
| 2021           | 0.0575        | 0.4944        | 0.5242        | 1.0000e-003        | 0.0136        | 0.0272        | 0.0408        | 3.6200e-003        | 0.0260        | 0.0296        | 0.0000        | 87.5165        | 87.5165        | 0.0146        | 4.3000e-004        | 88.0091        |
| <b>Maximum</b> | <b>0.0575</b> | <b>0.4944</b> | <b>0.5242</b> | <b>1.0000e-003</b> | <b>0.0136</b> | <b>0.0272</b> | <b>0.0408</b> | <b>3.6200e-003</b> | <b>0.0260</b> | <b>0.0296</b> | <b>0.0000</b> | <b>87.5165</b> | <b>87.5165</b> | <b>0.0146</b> | <b>4.3000e-004</b> | <b>88.0091</b> |

**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         |                |                |               |                    |                |
| 2021           | 0.0575        | 0.4944        | 0.5242        | 1.0000e-003        | 0.0136        | 0.0272        | 0.0408        | 3.6200e-003        | 0.0260        | 0.0296        | 0.0000        | 87.5164        | 87.5164        | 0.0146        | 4.3000e-004        | 88.0090        |
| <b>Maximum</b> | <b>0.0575</b> | <b>0.4944</b> | <b>0.5242</b> | <b>1.0000e-003</b> | <b>0.0136</b> | <b>0.0272</b> | <b>0.0408</b> | <b>3.6200e-003</b> | <b>0.0260</b> | <b>0.0296</b> | <b>0.0000</b> | <b>87.5164</b> | <b>87.5164</b> | <b>0.0146</b> | <b>4.3000e-004</b> | <b>88.0090</b> |

|                          | ROG         | NOx         | CO          | SO2         | Fugitive PM10 | Exhaust PM10 | PM10 Total  | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2    | NBio- CO2   | Total CO2   | CH4         | N2O         | CO2e        |
|--------------------------|-------------|-------------|-------------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Percent Reduction</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b>   | <b>0.00</b>  | <b>0.00</b> | <b>0.00</b>    | <b>0.00</b>   | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---------|------------|----------|--|--|
| 1       | 1-4-2021   | 4-3-2021 | 0.4268                                       | 0.4268                                     |
| 2       | 4-4-2021   | 7-3-2021 | 0.1245                                       | 0.1245                                     |
|         |            | Highest  | 0.4268                                       | 0.4268                                     |

**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         | 0.0217        | 0.0000        | 5.0000e-005        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 9.0000e-005        | 9.0000e-005        | 0.0000        | 0.0000        | 1.0000e-004        |
| 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             |
| <b>Total</b> | <b>0.0217</b> | <b>0.0000</b> | <b>5.0000e-005</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b>  | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>9.0000e-005</b> | <b>9.0000e-005</b> | <b>0.0000</b> | <b>0.0000</b> | <b>1.0000e-004</b> |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**2.2 Overall Operational**

**Mitigated Operational**

|              | ROG           | NOx           | CO                 | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2          | Total CO2          | CH4           | N2O           | CO2e               |
|--------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|--------------------|--------------------|---------------|---------------|--------------------|
| Category     | tons/yr       |               |                    |               |               |               |               |                |               |               | MT/yr         |                    |                    |               |               |                    |
| Area         | 0.0217        | 0.0000        | 5.0000e-005        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 9.0000e-005        | 9.0000e-005        | 0.0000        | 0.0000        | 1.0000e-004        |
| 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             |
| <b>Total</b> | <b>0.0217</b> | <b>0.0000</b> | <b>5.0000e-005</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b>  | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>9.0000e-005</b> | <b>9.0000e-005</b> | <b>0.0000</b> | <b>0.0000</b> | <b>1.0000e-004</b> |

|                          | ROG         | NOx         | CO          | SO2         | Fugitive PM10 | Exhaust PM10 | PM10 Total  | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2    | NBio- CO2   | Total CO2   | CH4         | N2O         | CO2e        |
|--------------------------|-------------|-------------|-------------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Percent Reduction</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b>   | <b>0.00</b>  | <b>0.00</b> | <b>0.00</b>    | <b>0.00</b>   | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> |

**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      | 1/4/2021   | 1/25/2021 | 5             | 16       |                   |
| 2            | Trenching           | Trenching             | 1/26/2021  | 3/8/2021  | 5             | 30       |                   |
| 3            | System Installation | Building Construction | 3/9/2021   | 5/10/2021 | 5             | 45       |                   |



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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 5**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name          | Offroad Equipment Type    | Amount | Usage Hours | Horse Power | Load Factor |
|---------------------|---------------------------|--------|-------------|-------------|-------------|
| Site Preparation    | Graders                   | 1      | 6.00        | 187         | 0.41        |
| Site Preparation    | Tractors/Loaders/Backhoes | 1      | 6.00        | 97          | 0.37        |
| Trenching           | Trenchers                 | 2      | 6.00        | 78          | 0.50        |
| Trenching           | Tractors/Loaders/Backhoes | 1      | 8.00        | 97          | 0.37        |
| Trenching           | Plate Compactors          | 1      | 8.00        | 8           | 0.43        |
| Trenching           | Generator Sets            | 1      | 8.00        | 84          | 0.74        |
| Trenching           | Concrete/Industrial Saws  | 1      | 8.00        | 81          | 0.73        |
| Trenching           | Cement and Mortar Mixers  | 1      | 8.00        | 9           | 0.56        |
| Trenching           | Bore/Drill Rigs           | 1      | 8.00        | 221         | 0.50        |
| System Installation | Tractors/Loaders/Backhoes | 1      | 8.00        | 97          | 0.37        |
| System Installation | Air Compressors           | 1      | 8.00        | 78          | 0.48        |
| System Installation | Forklifts                 | 1      | 8.00        | 89          | 0.20        |
| System Installation | Generator Sets            | 1      | 8.00        | 84          | 0.74        |

**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 |
|---------------------|-------------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|----------------------|----------------------|-----------------------|
| Trenching           | 8                       | 20.00              | 0.00               | 4.00                | 30.00              | 30.00              | 30.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| System Installation | 4                       | 10.00              | 0.00               | 10.00               | 30.00              | 30.00              | 30.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Site Preparation    | 2                       | 10.00              | 0.00               | 5.00                | 30.00              | 30.00              | 30.00               | LD_Mix               | HDT_Mix              | HHDT                  |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.1 Mitigation Measures Construction**

**3.2 Site Preparation - 2021**

**Unmitigated Construction On-Site**

|               | ROG                | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 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 |                    |               |               |                    | 0.0000        | 0.0000             | 0.0000             | 0.0000         | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Off-Road      | 3.8400e-003        | 0.0469        | 0.0242        | 6.0000e-005        |               | 1.8000e-003        | 1.8000e-003        |                | 1.6500e-003        | 1.6500e-003        | 0.0000        | 5.1306        | 5.1306        | 1.6600e-003        | 0.0000        | 5.1721        |
| <b>Total</b>  | <b>3.8400e-003</b> | <b>0.0469</b> | <b>0.0242</b> | <b>6.0000e-005</b> | <b>0.0000</b> | <b>1.8000e-003</b> | <b>1.8000e-003</b> | <b>0.0000</b>  | <b>1.6500e-003</b> | <b>1.6500e-003</b> | <b>0.0000</b> | <b>5.1306</b> | <b>5.1306</b> | <b>1.6600e-003</b> | <b>0.0000</b> | <b>5.1721</b> |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.2 Site Preparation - 2021**

**Unmitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 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      | 2.0000e-005        | 6.6000e-004        | 1.3000e-004        | 0.0000             | 6.0000e-005        | 1.0000e-005        | 7.0000e-005        | 2.0000e-005        | 1.0000e-005        | 3.0000e-005        | 0.0000        | 0.2263        | 0.2263        | 1.0000e-005        | 4.0000e-005        | 0.2371        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 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        | 4.8000e-004        | 5.7200e-003        | 2.0000e-005        | 1.7700e-003        | 1.0000e-005        | 1.7800e-003        | 4.7000e-004        | 1.0000e-005        | 4.8000e-004        | 0.0000        | 1.4700        | 1.4700        | 3.0000e-005        | 4.0000e-005        | 1.4824        |
| <b>Total</b> | <b>5.5000e-004</b> | <b>1.1400e-003</b> | <b>5.8500e-003</b> | <b>2.0000e-005</b> | <b>1.8300e-003</b> | <b>2.0000e-005</b> | <b>1.8500e-003</b> | <b>4.9000e-004</b> | <b>2.0000e-005</b> | <b>5.1000e-004</b> | <b>0.0000</b> | <b>1.6963</b> | <b>1.6963</b> | <b>4.0000e-005</b> | <b>8.0000e-005</b> | <b>1.7195</b> |

**Mitigated Construction On-Site**

|               | ROG                | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 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 |                    |               |               |                    | 0.0000        | 0.0000             | 0.0000             | 0.0000         | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Off-Road      | 3.8400e-003        | 0.0469        | 0.0242        | 6.0000e-005        |               | 1.8000e-003        | 1.8000e-003        |                | 1.6500e-003        | 1.6500e-003        | 0.0000        | 5.1306        | 5.1306        | 1.6600e-003        | 0.0000        | 5.1721        |
| <b>Total</b>  | <b>3.8400e-003</b> | <b>0.0469</b> | <b>0.0242</b> | <b>6.0000e-005</b> | <b>0.0000</b> | <b>1.8000e-003</b> | <b>1.8000e-003</b> | <b>0.0000</b>  | <b>1.6500e-003</b> | <b>1.6500e-003</b> | <b>0.0000</b> | <b>5.1306</b> | <b>5.1306</b> | <b>1.6600e-003</b> | <b>0.0000</b> | <b>5.1721</b> |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.2 Site Preparation - 2021**

**Mitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 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      | 2.0000e-005        | 6.6000e-004        | 1.3000e-004        | 0.0000             | 6.0000e-005        | 1.0000e-005        | 7.0000e-005        | 2.0000e-005        | 1.0000e-005        | 3.0000e-005        | 0.0000        | 0.2263        | 0.2263        | 1.0000e-005        | 4.0000e-005        | 0.2371        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 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        | 4.8000e-004        | 5.7200e-003        | 2.0000e-005        | 1.7700e-003        | 1.0000e-005        | 1.7800e-003        | 4.7000e-004        | 1.0000e-005        | 4.8000e-004        | 0.0000        | 1.4700        | 1.4700        | 3.0000e-005        | 4.0000e-005        | 1.4824        |
| <b>Total</b> | <b>5.5000e-004</b> | <b>1.1400e-003</b> | <b>5.8500e-003</b> | <b>2.0000e-005</b> | <b>1.8300e-003</b> | <b>2.0000e-005</b> | <b>1.8500e-003</b> | <b>4.9000e-004</b> | <b>2.0000e-005</b> | <b>5.1000e-004</b> | <b>0.0000</b> | <b>1.6963</b> | <b>1.6963</b> | <b>4.0000e-005</b> | <b>8.0000e-005</b> | <b>1.7195</b> |

**3.3 Trenching - 2021**

**Unmitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 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     | 0.0279        | 0.2552        | 0.2418        | 4.7000e-004        |               | 0.0143        | 0.0143        |                | 0.0136        | 0.0136        | 0.0000        | 40.8783        | 40.8783        | 8.5200e-003        | 0.0000        | 41.0912        |
| <b>Total</b> | <b>0.0279</b> | <b>0.2552</b> | <b>0.2418</b> | <b>4.7000e-004</b> |               | <b>0.0143</b> | <b>0.0143</b> |                | <b>0.0136</b> | <b>0.0136</b> | <b>0.0000</b> | <b>40.8783</b> | <b>40.8783</b> | <b>8.5200e-003</b> | <b>0.0000</b> | <b>41.0912</b> |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.3 Trenching - 2021**

**Unmitigated Construction Off-Site**

|              | ROG                | NOx                | CO            | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 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      | 2.0000e-005        | 5.3000e-004        | 1.0000e-004   | 0.0000             | 5.0000e-005        | 1.0000e-005        | 6.0000e-005        | 1.0000e-005        | 1.0000e-005        | 2.0000e-005        | 0.0000        | 0.1811        | 0.1811        | 0.0000             | 3.0000e-005        | 0.1897        |
| Vendor       | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000             | 0.0000        |
| Worker       | 1.9700e-003        | 1.8000e-003        | 0.0215        | 6.0000e-005        | 6.6200e-003        | 4.0000e-005        | 6.6600e-003        | 1.7600e-003        | 4.0000e-005        | 1.8000e-003        | 0.0000        | 5.5126        | 5.5126        | 1.3000e-004        | 1.5000e-004        | 5.5591        |
| <b>Total</b> | <b>1.9900e-003</b> | <b>2.3300e-003</b> | <b>0.0216</b> | <b>6.0000e-005</b> | <b>6.6700e-003</b> | <b>5.0000e-005</b> | <b>6.7200e-003</b> | <b>1.7700e-003</b> | <b>5.0000e-005</b> | <b>1.8200e-003</b> | <b>0.0000</b> | <b>5.6936</b> | <b>5.6936</b> | <b>1.3000e-004</b> | <b>1.8000e-004</b> | <b>5.7488</b> |

**Mitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 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     | 0.0279        | 0.2552        | 0.2418        | 4.7000e-004        |               | 0.0143        | 0.0143        |                | 0.0136        | 0.0136        | 0.0000        | 40.8783        | 40.8783        | 8.5200e-003        | 0.0000        | 41.0912        |
| <b>Total</b> | <b>0.0279</b> | <b>0.2552</b> | <b>0.2418</b> | <b>4.7000e-004</b> |               | <b>0.0143</b> | <b>0.0143</b> |                | <b>0.0136</b> | <b>0.0136</b> | <b>0.0000</b> | <b>40.8783</b> | <b>40.8783</b> | <b>8.5200e-003</b> | <b>0.0000</b> | <b>41.0912</b> |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.3 Trenching - 2021**

**Mitigated Construction Off-Site**

|              | ROG                | NOx                | CO            | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 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      | 2.0000e-005        | 5.3000e-004        | 1.0000e-004   | 0.0000             | 5.0000e-005        | 1.0000e-005        | 6.0000e-005        | 1.0000e-005        | 1.0000e-005        | 2.0000e-005        | 0.0000        | 0.1811        | 0.1811        | 0.0000             | 3.0000e-005        | 0.1897        |
| Vendor       | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000             | 0.0000        |
| Worker       | 1.9700e-003        | 1.8000e-003        | 0.0215        | 6.0000e-005        | 6.6200e-003        | 4.0000e-005        | 6.6600e-003        | 1.7600e-003        | 4.0000e-005        | 1.8000e-003        | 0.0000        | 5.5126        | 5.5126        | 1.3000e-004        | 1.5000e-004        | 5.5591        |
| <b>Total</b> | <b>1.9900e-003</b> | <b>2.3300e-003</b> | <b>0.0216</b> | <b>6.0000e-005</b> | <b>6.6700e-003</b> | <b>5.0000e-005</b> | <b>6.7200e-003</b> | <b>1.7700e-003</b> | <b>5.0000e-005</b> | <b>1.8200e-003</b> | <b>0.0000</b> | <b>5.6936</b> | <b>5.6936</b> | <b>1.3000e-004</b> | <b>1.8000e-004</b> | <b>5.7488</b> |

**3.4 System Installation - 2021**

**Unmitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 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     | 0.0217        | 0.1862        | 0.2145        | 3.4000e-004        |               | 0.0110        | 0.0110        |                | 0.0106        | 0.0106        | 0.0000        | 29.5306        | 29.5306        | 4.1400e-003        | 0.0000        | 29.6339        |
| <b>Total</b> | <b>0.0217</b> | <b>0.1862</b> | <b>0.2145</b> | <b>3.4000e-004</b> |               | <b>0.0110</b> | <b>0.0110</b> |                | <b>0.0106</b> | <b>0.0106</b> | <b>0.0000</b> | <b>29.5306</b> | <b>29.5306</b> | <b>4.1400e-003</b> | <b>0.0000</b> | <b>29.6339</b> |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 System Installation - 2021**

**Unmitigated Construction Off-Site**

|              | ROG                | NOx                | CO            | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 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      | 4.0000e-005        | 1.3200e-003        | 2.5000e-004   | 0.0000             | 1.3000e-004        | 2.0000e-005        | 1.5000e-004        | 4.0000e-005        | 2.0000e-005        | 5.0000e-005        | 0.0000        | 0.4526        | 0.4526        | 1.0000e-005        | 7.0000e-005        | 0.4742        |
| Vendor       | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000             | 0.0000        |
| Worker       | 1.4800e-003        | 1.3500e-003        | 0.0161        | 5.0000e-005        | 4.9700e-003        | 3.0000e-005        | 4.9900e-003        | 1.3200e-003        | 3.0000e-005        | 1.3500e-003        | 0.0000        | 4.1344        | 4.1344        | 9.0000e-005        | 1.1000e-004        | 4.1693        |
| <b>Total</b> | <b>1.5200e-003</b> | <b>2.6700e-003</b> | <b>0.0164</b> | <b>5.0000e-005</b> | <b>5.1000e-003</b> | <b>5.0000e-005</b> | <b>5.1400e-003</b> | <b>1.3600e-003</b> | <b>5.0000e-005</b> | <b>1.4000e-003</b> | <b>0.0000</b> | <b>4.5871</b> | <b>4.5871</b> | <b>1.0000e-004</b> | <b>1.8000e-004</b> | <b>4.6436</b> |

**Mitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 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     | 0.0217        | 0.1862        | 0.2145        | 3.4000e-004        |               | 0.0110        | 0.0110        |                | 0.0106        | 0.0106        | 0.0000        | 29.5305        | 29.5305        | 4.1400e-003        | 0.0000        | 29.6339        |
| <b>Total</b> | <b>0.0217</b> | <b>0.1862</b> | <b>0.2145</b> | <b>3.4000e-004</b> |               | <b>0.0110</b> | <b>0.0110</b> |                | <b>0.0106</b> | <b>0.0106</b> | <b>0.0000</b> | <b>29.5305</b> | <b>29.5305</b> | <b>4.1400e-003</b> | <b>0.0000</b> | <b>29.6339</b> |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 System Installation - 2021**

**Mitigated Construction Off-Site**

|              | ROG                | NOx                | CO            | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 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      | 4.0000e-005        | 1.3200e-003        | 2.5000e-004   | 0.0000             | 1.3000e-004        | 2.0000e-005        | 1.5000e-004        | 4.0000e-005        | 2.0000e-005        | 5.0000e-005        | 0.0000        | 0.4526        | 0.4526        | 1.0000e-005        | 7.0000e-005        | 0.4742        |
| Vendor       | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000             | 0.0000        |
| Worker       | 1.4800e-003        | 1.3500e-003        | 0.0161        | 5.0000e-005        | 4.9700e-003        | 3.0000e-005        | 4.9900e-003        | 1.3200e-003        | 3.0000e-005        | 1.3500e-003        | 0.0000        | 4.1344        | 4.1344        | 9.0000e-005        | 1.1000e-004        | 4.1693        |
| <b>Total</b> | <b>1.5200e-003</b> | <b>2.6700e-003</b> | <b>0.0164</b> | <b>5.0000e-005</b> | <b>5.1000e-003</b> | <b>5.0000e-005</b> | <b>5.1400e-003</b> | <b>1.3600e-003</b> | <b>5.0000e-005</b> | <b>1.4000e-003</b> | <b>0.0000</b> | <b>4.5871</b> | <b>4.5871</b> | <b>1.0000e-004</b> | <b>1.8000e-004</b> | <b>4.6436</b> |



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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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 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 Non-Asphalt Surfaces | 9.50       | 7.30       | 7.30        | 0.00       | 0.00       | 0.00        | 0              | 0        | 0       |

4.4 Fleet Mix

| Land Use                   | LDA      | LDT1     | LDT2     | MDV      | LHD1     | LHD2     | MHD      | HHD      | OBUS     | UBUS     | MCY      | SBUS     | MH       |
|----------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Other Non-Asphalt Surfaces | 0.543438 | 0.060776 | 0.184542 | 0.125993 | 0.024133 | 0.006619 | 0.012016 | 0.011244 | 0.000789 | 0.000455 | 0.025773 | 0.000920 | 0.003302 |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

|                         | ROG     | NOx    | CO     | SO2    | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4    | N2O    | CO2e   |
|-------------------------|---------|--------|--------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|--------|--------|--------|
| Category                | tons/yr |        |        |        |               |              |            |                |               |             | MT/yr    |           |           |        |        |        |
| Electricity Mitigated   |         |        |        |        |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      | 0.0000   | 0.0000    | 0.0000    | 0.0000 | 0.0000 | 0.0000 |
| Electricity Unmitigated |         |        |        |        |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      | 0.0000   | 0.0000    | 0.0000    | 0.0000 | 0.0000 | 0.0000 |
| NaturalGas 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 |
| NaturalGas 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 |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

|                            | NaturalGas Use | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2     | Total CO2     | CH4           | N2O           | CO2e          |
|----------------------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Land Use                   | kBTU/yr        | tons/yr       |               |               |               |               |               |               |                |               |               | MT/yr         |               |               |               |               |               |
| Other Non-Asphalt Surfaces | 0              | 0.0000        | 0.0000        | 0.0000        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        |
| <b>Total</b>               |                | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |

**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         |               |               |               |               |               |
| Other Non-Asphalt Surfaces | 0              | 0.0000        | 0.0000        | 0.0000        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        |
| <b>Total</b>               |                | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.3 Energy by Land Use - Electricity**

**Unmitigated**

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

**Mitigated**

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

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

|             | ROG     | NOx    | CO          | SO2    | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2   | Total CO2   | CH4    | N2O    | CO2e        |
|-------------|---------|--------|-------------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|-------------|-------------|--------|--------|-------------|
| Category    | tons/yr |        |             |        |               |              |            |                |               |             | MT/yr    |             |             |        |        |             |
| Mitigated   | 0.0217  | 0.0000 | 5.0000e-005 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      | 0.0000   | 9.0000e-005 | 9.0000e-005 | 0.0000 | 0.0000 | 1.0000e-004 |
| Unmitigated | 0.0217  | 0.0000 | 5.0000e-005 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      | 0.0000   | 9.0000e-005 | 9.0000e-005 | 0.0000 | 0.0000 | 1.0000e-004 |

**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 | 7.5700e-003   |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000             |
| Consumer Products     | 0.0141        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000             |
| Landscaping           | 0.0000        | 0.0000        | 5.0000e-005        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 9.0000e-005        | 9.0000e-005        | 0.0000        | 0.0000        | 1.0000e-004        |
| <b>Total</b>          | <b>0.0217</b> | <b>0.0000</b> | <b>5.0000e-005</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>9.0000e-005</b> | <b>9.0000e-005</b> | <b>0.0000</b> | <b>0.0000</b> | <b>1.0000e-004</b> |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**6.2 Area by SubCategory**

Mitigated

|                       | ROG           | NOx           | CO                 | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2          | Total CO2          | CH4           | N2O           | CO2e               |
|-----------------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|--------------------|--------------------|---------------|---------------|--------------------|
| SubCategory           | tons/yr       |               |                    |               |               |               |               |                |               |               | MT/yr         |                    |                    |               |               |                    |
| Architectural Coating | 7.5700e-003   |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000             |
| Consumer Products     | 0.0141        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000             |
| Landscaping           | 0.0000        | 0.0000        | 5.0000e-005        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 9.0000e-005        | 9.0000e-005        | 0.0000        | 0.0000        | 1.0000e-004        |
| <b>Total</b>          | <b>0.0217</b> | <b>0.0000</b> | <b>5.0000e-005</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>9.0000e-005</b> | <b>9.0000e-005</b> | <b>0.0000</b> | <b>0.0000</b> | <b>1.0000e-004</b> |

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

|             | 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 Non-Asphalt Surfaces | 0 / 0              | 0.0000        | 0.0000        | 0.0000        | 0.0000        |
| <b>Total</b>               |                    | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**7.2 Water by Land Use**

Mitigated

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

**8.0 Waste Detail**

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**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 |



New Construction of 1-2 MW Charging Infrastructure - Statewide , Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**8.2 Waste by Land Use**

**Unmitigated**

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

**Mitigated**

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

**9.0 Operational Offroad**

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

New Construction of 1-2 MW Charging Infrastructure - Statewide , Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**10.0 Stationary Equipment**

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**Fire Pumps and Emergency Generators**

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

**Boilers**

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

**User Defined Equipment**

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

**11.0 Vegetation**

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New Construction of 1-2 MW Charging Infrastructure - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**New Construction of 1-2 MW Charging Infrastructure**

**Statewide , Summer**

**1.0 Project Characteristics**

**1.1 Land Usage**

| Land Uses                  | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|----------------------------|------|--------|-------------|--------------------|------------|
| Other Non-Asphalt Surfaces | 5.00 | Acre   | 5.00        | 217,800.00         | 0          |

**1.2 Other Project Characteristics**

|                                |                         |                                |     |                                  |      |
|--------------------------------|-------------------------|--------------------------------|-----|----------------------------------|------|
| <b>Urbanization</b>            | Urban                   | <b>Wind Speed (m/s)</b>        | 2.2 | <b>Precipitation Freq (Days)</b> | 54   |
| <b>Climate Zone</b>            | 4                       |                                |     | <b>Operational Year</b>          | 2030 |
| <b>Utility Company</b>         | Alameda Municipal Power |                                |     |                                  |      |
| <b>CO2 Intensity (lb/MWhr)</b> | 0                       | <b>CH4 Intensity (lb/MWhr)</b> | 0   | <b>N2O Intensity (lb/MWhr)</b>   | 0    |

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

Project Characteristics - Construction emissions only.

Land Use -

Construction Phase - Assumed construction would occur from January 4, 2021 through May 5, 2021.

Off-road Equipment - Assumed construction unit amount and hours/day.

Off-road Equipment - Assumed construction unit amount and hours/day.

Off-road Equipment - Assumed construction unit amount and hours/day.

Grading - Assumed no grading.

Trips and VMT - Assumed worker, vendor and hauling trips and trip lengths.

| Table Name           | Column Name | Default Value | New Value |
|----------------------|-------------|---------------|-----------|
| tblConstructionPhase | NumDays     | 5.00          | 16.00     |
| tblConstructionPhase | NumDays     | 230.00        | 45.00     |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

|                     |                            |       |                           |
|---------------------|----------------------------|-------|---------------------------|
| tblGrading          | AcresOfGrading             | 6.00  | 0.00                      |
| tblOffRoadEquipment | LoadFactor                 | 0.37  | 0.37                      |
| tblOffRoadEquipment | LoadFactor                 | 0.20  | 0.20                      |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Graders                   |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Tractors/Loaders/Backhoes |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Trenchers                 |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Tractors/Loaders/Backhoes |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Plate Compactors          |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Generator Sets            |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Concrete/Industrial Saws  |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Cement and Mortar Mixers  |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Bore/Drill Rigs           |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Tractors/Loaders/Backhoes |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Air Compressors           |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Forklifts                 |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Generator Sets            |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 4.00  | 1.00                      |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00  | 1.00                      |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00  | 1.00                      |
| tblOffRoadEquipment | UsageHours                 | 8.00  | 6.00                      |
| tblOffRoadEquipment | UsageHours                 | 7.00  | 8.00                      |
| tblTripsAndVMT      | HaulingTripLength          | 20.00 | 30.00                     |
| tblTripsAndVMT      | HaulingTripLength          | 20.00 | 30.00                     |
| tblTripsAndVMT      | HaulingTripLength          | 20.00 | 30.00                     |
| tblTripsAndVMT      | HaulingTripNumber          | 0.00  | 5.00                      |
| tblTripsAndVMT      | HaulingTripNumber          | 0.00  | 10.00                     |
| tblTripsAndVMT      | HaulingTripNumber          | 0.00  | 4.00                      |
| tblTripsAndVMT      | VendorTripLength           | 7.30  | 30.00                     |
| tblTripsAndVMT      | VendorTripLength           | 7.30  | 30.00                     |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

|                |                  |       |       |
|----------------|------------------|-------|-------|
| tbITripsAndVMT | VendorTripLength | 7.30  | 30.00 |
| tbITripsAndVMT | VendorTripNumber | 36.00 | 0.00  |
| tbITripsAndVMT | WorkerTripLength | 10.80 | 30.00 |
| tbITripsAndVMT | WorkerTripLength | 10.80 | 30.00 |
| tbITripsAndVMT | WorkerTripLength | 10.80 | 30.00 |
| tbITripsAndVMT | WorkerTripNumber | 5.00  | 10.00 |
| tbITripsAndVMT | WorkerTripNumber | 91.00 | 10.00 |

**2.0 Emissions Summary**

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New Construction of 1-2 MW Charging Infrastructure - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**2.1 Overall Construction (Maximum Daily Emission)**

**Unmitigated Construction**

|                | ROG           | NOx            | CO             | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|----------------|---------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Year           | lb/day        |                |                |               |               |               |               |                |               |               | lb/day        |                   |                   |               |               |                   |
| 2021           | 1.9961        | 17.1515        | 17.7377        | 0.0360        | 0.4595        | 0.9540        | 1.4135        | 0.1219         | 0.9069        | 1.0288        | 0.0000        | 3,446.9248        | 3,446.9248        | 0.6358        | 0.0120        | 3,466.4049        |
| <b>Maximum</b> | <b>1.9961</b> | <b>17.1515</b> | <b>17.7377</b> | <b>0.0360</b> | <b>0.4595</b> | <b>0.9540</b> | <b>1.4135</b> | <b>0.1219</b>  | <b>0.9069</b> | <b>1.0288</b> | <b>0.0000</b> | <b>3,446.9248</b> | <b>3,446.9248</b> | <b>0.6358</b> | <b>0.0120</b> | <b>3,466.4049</b> |

**Mitigated Construction**

|                | ROG           | NOx            | CO             | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|----------------|---------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Year           | lb/day        |                |                |               |               |               |               |                |               |               | lb/day        |                   |                   |               |               |                   |
| 2021           | 1.9961        | 17.1515        | 17.7377        | 0.0360        | 0.4595        | 0.9540        | 1.4135        | 0.1219         | 0.9069        | 1.0288        | 0.0000        | 3,446.9248        | 3,446.9248        | 0.6358        | 0.0120        | 3,466.4049        |
| <b>Maximum</b> | <b>1.9961</b> | <b>17.1515</b> | <b>17.7377</b> | <b>0.0360</b> | <b>0.4595</b> | <b>0.9540</b> | <b>1.4135</b> | <b>0.1219</b>  | <b>0.9069</b> | <b>1.0288</b> | <b>0.0000</b> | <b>3,446.9248</b> | <b>3,446.9248</b> | <b>0.6358</b> | <b>0.0120</b> | <b>3,466.4049</b> |

|                          | ROG         | NOx         | CO          | SO2         | Fugitive PM10 | Exhaust PM10 | PM10 Total  | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2    | NBio- CO2   | Total CO2   | CH4         | N2O         | CO2e        |
|--------------------------|-------------|-------------|-------------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Percent Reduction</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b>   | <b>0.00</b>  | <b>0.00</b> | <b>0.00</b>    | <b>0.00</b>   | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**2.2 Overall Operational**

**Unmitigated Operational**

|              | ROG           | NOx           | CO                 | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2          | Total CO2          | CH4           | N2O           | CO2e               |
|--------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|--------------------|--------------------|---------------|---------------|--------------------|
| Category     | lb/day        |               |                    |               |               |               |               |                |               |               | lb/day   |                    |                    |               |               |                    |
| Area         | 0.1187        | 0.0000        | 5.1000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 1.0900e-003        | 1.0900e-003        | 0.0000        |               | 1.1600e-003        |
| 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             |
| 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             |
| <b>Total</b> | <b>0.1187</b> | <b>0.0000</b> | <b>5.1000e-004</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b>  | <b>0.0000</b> | <b>0.0000</b> |          | <b>1.0900e-003</b> | <b>1.0900e-003</b> | <b>0.0000</b> | <b>0.0000</b> | <b>1.1600e-003</b> |

**Mitigated Operational**

|              | ROG           | NOx           | CO                 | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2          | Total CO2          | CH4           | N2O           | CO2e               |
|--------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|--------------------|--------------------|---------------|---------------|--------------------|
| Category     | lb/day        |               |                    |               |               |               |               |                |               |               | lb/day   |                    |                    |               |               |                    |
| Area         | 0.1187        | 0.0000        | 5.1000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 1.0900e-003        | 1.0900e-003        | 0.0000        |               | 1.1600e-003        |
| 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             |
| 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             |
| <b>Total</b> | <b>0.1187</b> | <b>0.0000</b> | <b>5.1000e-004</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b>  | <b>0.0000</b> | <b>0.0000</b> |          | <b>1.0900e-003</b> | <b>1.0900e-003</b> | <b>0.0000</b> | <b>0.0000</b> | <b>1.1600e-003</b> |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

|                   | ROG  | NOx  | CO   | SO2  | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4  | N2O  | CO2e |
|-------------------|------|------|------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| 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      | 1/4/2021   | 1/25/2021 | 5             | 16       |                   |
| 2            | Trenching           | Trenching             | 1/26/2021  | 3/8/2021  | 5             | 30       |                   |
| 3            | System Installation | Building Construction | 3/9/2021   | 5/10/2021 | 5             | 45       |                   |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 5**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name       | Offroad Equipment Type    | Amount | Usage Hours | Horse Power | Load Factor |
|------------------|---------------------------|--------|-------------|-------------|-------------|
| Site Preparation | Graders                   | 1      | 6.00        | 187         | 0.41        |
| Site Preparation | Tractors/Loaders/Backhoes | 1      | 6.00        | 97          | 0.37        |
| Trenching        | Trenchers                 | 2      | 6.00        | 78          | 0.50        |
| Trenching        | Tractors/Loaders/Backhoes | 1      | 8.00        | 97          | 0.37        |
| Trenching        | Plate Compactors          | 1      | 8.00        | 8           | 0.43        |
| Trenching        | Generator Sets            | 1      | 8.00        | 84          | 0.74        |
| Trenching        | Concrete/Industrial Saws  | 1      | 8.00        | 81          | 0.73        |
| Trenching        | Cement and Mortar Mixers  | 1      | 8.00        | 9           | 0.56        |



New Construction of 1-2 MW Charging Infrastructure - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

|                     |                           |   |      |     |      |
|---------------------|---------------------------|---|------|-----|------|
| Trenching           | Bore/Drill Rigs           | 1 | 8.00 | 221 | 0.50 |
| System Installation | Tractors/Loaders/Backhoes | 1 | 8.00 | 97  | 0.37 |
| System Installation | Air Compressors           | 1 | 8.00 | 78  | 0.48 |
| System Installation | Forklifts                 | 1 | 8.00 | 89  | 0.20 |
| System Installation | Generator Sets            | 1 | 8.00 | 84  | 0.74 |

**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 |
|---------------------|-------------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|----------------------|----------------------|-----------------------|
| Trenching           | 8                       | 20.00              | 0.00               | 4.00                | 30.00              | 30.00              | 30.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| System Installation | 4                       | 10.00              | 0.00               | 10.00               | 30.00              | 30.00              | 30.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Site Preparation    | 2                       | 10.00              | 0.00               | 5.00                | 30.00              | 30.00              | 30.00               | LD_Mix               | HDT_Mix              | HHDT                  |

**3.1 Mitigation Measures Construction**

**3.2 Site Preparation - 2021**

**Unmitigated Construction On-Site**

|               | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4           | N2O | CO2e            |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|-----------------|-----------------|---------------|-----|-----------------|
| Category      | lb/day        |               |               |                    |               |               |               |                |               |               | lb/day   |                 |                 |               |     |                 |
| Fugitive Dust |               |               |               |                    | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        |          |                 | 0.0000          |               |     | 0.0000          |
| Off-Road      | 0.4802        | 5.8653        | 3.0206        | 7.3000e-003        |               | 0.2246        | 0.2246        |                | 0.2066        | 0.2066        |          | 706.9381        | 706.9381        | 0.2286        |     | 712.6541        |
| <b>Total</b>  | <b>0.4802</b> | <b>5.8653</b> | <b>3.0206</b> | <b>7.3000e-003</b> | <b>0.0000</b> | <b>0.2246</b> | <b>0.2246</b> | <b>0.0000</b>  | <b>0.2066</b> | <b>0.2066</b> |          | <b>706.9381</b> | <b>706.9381</b> | <b>0.2286</b> |     | <b>712.6541</b> |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.2 Site Preparation - 2021**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4                | N2O                | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|-----------------|-----------------|--------------------|--------------------|-----------------|
| Category     | lb/day        |               |               |                    |               |                    |               |                |                    |               | lb/day   |                 |                 |                    |                    |                 |
| Hauling      | 2.6100e-003   | 0.0786        | 0.0157        | 2.9000e-004        | 8.2000e-003   | 1.1600e-003        | 9.3700e-003   | 2.2500e-003    | 1.1100e-003        | 3.3600e-003   |          | 31.1794         | 31.1794         | 8.5000e-004        | 4.9200e-003        | 32.6681         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        |          | 0.0000          | 0.0000          | 0.0000             | 0.0000             | 0.0000          |
| Worker       | 0.0674        | 0.0539        | 0.8049        | 2.1300e-003        | 0.2280        | 1.3200e-003        | 0.2293        | 0.0605         | 1.2100e-003        | 0.0617        |          | 214.7902        | 214.7902        | 4.7600e-003        | 4.9600e-003        | 216.3886        |
| <b>Total</b> | <b>0.0700</b> | <b>0.1324</b> | <b>0.8206</b> | <b>2.4200e-003</b> | <b>0.2362</b> | <b>2.4800e-003</b> | <b>0.2387</b> | <b>0.0627</b>  | <b>2.3200e-003</b> | <b>0.0650</b> |          | <b>245.9696</b> | <b>245.9696</b> | <b>5.6100e-003</b> | <b>9.8800e-003</b> | <b>249.0566</b> |

**Mitigated Construction On-Site**

|               | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O | CO2e            |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|-----|-----------------|
| Category      | lb/day        |               |               |                    |               |               |               |                |               |               | lb/day        |                 |                 |               |     |                 |
| Fugitive Dust |               |               |               |                    | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        |               |                 | 0.0000          |               |     | 0.0000          |
| Off-Road      | 0.4802        | 5.8653        | 3.0206        | 7.3000e-003        |               | 0.2246        | 0.2246        |                | 0.2066        | 0.2066        | 0.0000        | 706.9381        | 706.9381        | 0.2286        |     | 712.6541        |
| <b>Total</b>  | <b>0.4802</b> | <b>5.8653</b> | <b>3.0206</b> | <b>7.3000e-003</b> | <b>0.0000</b> | <b>0.2246</b> | <b>0.2246</b> | <b>0.0000</b>  | <b>0.2066</b> | <b>0.2066</b> | <b>0.0000</b> | <b>706.9381</b> | <b>706.9381</b> | <b>0.2286</b> |     | <b>712.6541</b> |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.2 Site Preparation - 2021**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4                | N2O                | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|-----------------|-----------------|--------------------|--------------------|-----------------|
| Category     | lb/day        |               |               |                    |               |                    |               |                |                    |               | lb/day   |                 |                 |                    |                    |                 |
| Hauling      | 2.6100e-003   | 0.0786        | 0.0157        | 2.9000e-004        | 8.2000e-003   | 1.1600e-003        | 9.3700e-003   | 2.2500e-003    | 1.1100e-003        | 3.3600e-003   |          | 31.1794         | 31.1794         | 8.5000e-004        | 4.9200e-003        | 32.6681         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        |          | 0.0000          | 0.0000          | 0.0000             | 0.0000             | 0.0000          |
| Worker       | 0.0674        | 0.0539        | 0.8049        | 2.1300e-003        | 0.2280        | 1.3200e-003        | 0.2293        | 0.0605         | 1.2100e-003        | 0.0617        |          | 214.7902        | 214.7902        | 4.7600e-003        | 4.9600e-003        | 216.3886        |
| <b>Total</b> | <b>0.0700</b> | <b>0.1324</b> | <b>0.8206</b> | <b>2.4200e-003</b> | <b>0.2362</b> | <b>2.4800e-003</b> | <b>0.2387</b> | <b>0.0627</b>  | <b>2.3200e-003</b> | <b>0.0650</b> |          | <b>245.9696</b> | <b>245.9696</b> | <b>5.6100e-003</b> | <b>9.8800e-003</b> | <b>249.0566</b> |

**3.3 Trenching - 2021**

**Unmitigated Construction On-Site**

|              | ROG           | NOx            | CO             | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2         | Total CO2         | CH4           | N2O | CO2e              |
|--------------|---------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|-------------------|-------------------|---------------|-----|-------------------|
| Category     | lb/day        |                |                |               |               |               |               |                |               |               | lb/day   |                   |                   |               |     |                   |
| Off-Road     | 1.8602        | 17.0102        | 16.1213        | 0.0316        |               | 0.9509        | 0.9509        |                | 0.9040        | 0.9040        |          | 3,004.0412        | 3,004.0412        | 0.6259        |     | 3,019.6894        |
| <b>Total</b> | <b>1.8602</b> | <b>17.0102</b> | <b>16.1213</b> | <b>0.0316</b> |               | <b>0.9509</b> | <b>0.9509</b> |                | <b>0.9040</b> | <b>0.9040</b> |          | <b>3,004.0412</b> | <b>3,004.0412</b> | <b>0.6259</b> |     | <b>3,019.6894</b> |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.3 Trenching - 2021**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4                | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|-----------------|-----------------|--------------------|---------------|-----------------|
| Category     | lb/day        |               |               |                    |               |                    |               |                |                    |               | lb/day   |                 |                 |                    |               |                 |
| Hauling      | 1.1200e-003   | 0.0335        | 6.7100e-003   | 1.2000e-004        | 3.5000e-003   | 5.0000e-004        | 4.0000e-003   | 9.6000e-004    | 4.7000e-004        | 1.4300e-003   |          | 13.3032         | 13.3032         | 3.6000e-004        | 2.1000e-003   | 13.9384         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        |          | 0.0000          | 0.0000          | 0.0000             | 0.0000        | 0.0000          |
| Worker       | 0.1348        | 0.1078        | 1.6098        | 4.2500e-003        | 0.4560        | 2.6300e-003        | 0.4587        | 0.1209         | 2.4200e-003        | 0.1233        |          | 429.5804        | 429.5804        | 9.5100e-003        | 9.9300e-003   | 432.7771        |
| <b>Total</b> | <b>0.1359</b> | <b>0.1413</b> | <b>1.6165</b> | <b>4.3700e-003</b> | <b>0.4595</b> | <b>3.1300e-003</b> | <b>0.4627</b> | <b>0.1219</b>  | <b>2.8900e-003</b> | <b>0.1248</b> |          | <b>442.8836</b> | <b>442.8836</b> | <b>9.8700e-003</b> | <b>0.0120</b> | <b>446.7155</b> |

**Mitigated Construction On-Site**

|              | ROG           | NOx            | CO             | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O | CO2e              |
|--------------|---------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|-----|-------------------|
| Category     | lb/day        |                |                |               |               |               |               |                |               |               | lb/day        |                   |                   |               |     |                   |
| Off-Road     | 1.8602        | 17.0102        | 16.1213        | 0.0316        |               | 0.9509        | 0.9509        |                | 0.9040        | 0.9040        | 0.0000        | 3,004.0412        | 3,004.0412        | 0.6259        |     | 3,019.6894        |
| <b>Total</b> | <b>1.8602</b> | <b>17.0102</b> | <b>16.1213</b> | <b>0.0316</b> |               | <b>0.9509</b> | <b>0.9509</b> |                | <b>0.9040</b> | <b>0.9040</b> | <b>0.0000</b> | <b>3,004.0412</b> | <b>3,004.0412</b> | <b>0.6259</b> |     | <b>3,019.6894</b> |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.3 Trenching - 2021**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4                | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|-----------------|-----------------|--------------------|---------------|-----------------|
| Category     | lb/day        |               |               |                    |               |                    |               |                |                    |               | lb/day   |                 |                 |                    |               |                 |
| Hauling      | 1.1200e-003   | 0.0335        | 6.7100e-003   | 1.2000e-004        | 3.5000e-003   | 5.0000e-004        | 4.0000e-003   | 9.6000e-004    | 4.7000e-004        | 1.4300e-003   |          | 13.3032         | 13.3032         | 3.6000e-004        | 2.1000e-003   | 13.9384         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        |          | 0.0000          | 0.0000          | 0.0000             | 0.0000        | 0.0000          |
| Worker       | 0.1348        | 0.1078        | 1.6098        | 4.2500e-003        | 0.4560        | 2.6300e-003        | 0.4587        | 0.1209         | 2.4200e-003        | 0.1233        |          | 429.5804        | 429.5804        | 9.5100e-003        | 9.9300e-003   | 432.7771        |
| <b>Total</b> | <b>0.1359</b> | <b>0.1413</b> | <b>1.6165</b> | <b>4.3700e-003</b> | <b>0.4595</b> | <b>3.1300e-003</b> | <b>0.4627</b> | <b>0.1219</b>  | <b>2.8900e-003</b> | <b>0.1248</b> |          | <b>442.8836</b> | <b>442.8836</b> | <b>9.8700e-003</b> | <b>0.0120</b> | <b>446.7155</b> |

**3.4 System Installation - 2021**

**Unmitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2         | Total CO2         | CH4           | N2O | CO2e              |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|-------------------|-------------------|---------------|-----|-------------------|
| Category     | lb/day        |               |               |               |               |               |               |                |               |               | lb/day   |                   |                   |               |     |                   |
| Off-Road     | 0.9658        | 8.2751        | 9.5329        | 0.0152        |               | 0.4886        | 0.4886        |                | 0.4730        | 0.4730        |          | 1,446.7498        | 1,446.7498        | 0.2026        |     | 1,451.8144        |
| <b>Total</b> | <b>0.9658</b> | <b>8.2751</b> | <b>9.5329</b> | <b>0.0152</b> |               | <b>0.4886</b> | <b>0.4886</b> |                | <b>0.4730</b> | <b>0.4730</b> |          | <b>1,446.7498</b> | <b>1,446.7498</b> | <b>0.2026</b> |     | <b>1,451.8144</b> |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 System Installation - 2021**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4                | N2O                | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|-----------------|-----------------|--------------------|--------------------|-----------------|
| Category     | lb/day        |               |               |                    |               |                    |               |                |                    |               | lb/day   |                 |                 |                    |                    |                 |
| Hauling      | 1.8600e-003   | 0.0559        | 0.0112        | 2.1000e-004        | 5.8300e-003   | 8.3000e-004        | 6.6600e-003   | 1.6000e-003    | 7.9000e-004        | 2.3900e-003   |          | 22.1720         | 22.1720         | 6.1000e-004        | 3.5000e-003        | 23.2306         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        |          | 0.0000          | 0.0000          | 0.0000             | 0.0000             | 0.0000          |
| Worker       | 0.0674        | 0.0539        | 0.8049        | 2.1300e-003        | 0.2280        | 1.3200e-003        | 0.2293        | 0.0605         | 1.2100e-003        | 0.0617        |          | 214.7902        | 214.7902        | 4.7600e-003        | 4.9600e-003        | 216.3886        |
| <b>Total</b> | <b>0.0693</b> | <b>0.1097</b> | <b>0.8161</b> | <b>2.3400e-003</b> | <b>0.2338</b> | <b>2.1500e-003</b> | <b>0.2360</b> | <b>0.0621</b>  | <b>2.0000e-003</b> | <b>0.0641</b> |          | <b>236.9622</b> | <b>236.9622</b> | <b>5.3700e-003</b> | <b>8.4600e-003</b> | <b>239.6192</b> |

**Mitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O | CO2e              |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|-----|-------------------|
| Category     | lb/day        |               |               |               |               |               |               |                |               |               | lb/day        |                   |                   |               |     |                   |
| Off-Road     | 0.9658        | 8.2751        | 9.5329        | 0.0152        |               | 0.4886        | 0.4886        |                | 0.4730        | 0.4730        | 0.0000        | 1,446.7498        | 1,446.7498        | 0.2026        |     | 1,451.8144        |
| <b>Total</b> | <b>0.9658</b> | <b>8.2751</b> | <b>9.5329</b> | <b>0.0152</b> |               | <b>0.4886</b> | <b>0.4886</b> |                | <b>0.4730</b> | <b>0.4730</b> | <b>0.0000</b> | <b>1,446.7498</b> | <b>1,446.7498</b> | <b>0.2026</b> |     | <b>1,451.8144</b> |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 System Installation - 2021**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4                | N2O                | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|-----------------|-----------------|--------------------|--------------------|-----------------|
| Category     | lb/day        |               |               |                    |               |                    |               |                |                    |               | lb/day   |                 |                 |                    |                    |                 |
| Hauling      | 1.8600e-003   | 0.0559        | 0.0112        | 2.1000e-004        | 5.8300e-003   | 8.3000e-004        | 6.6600e-003   | 1.6000e-003    | 7.9000e-004        | 2.3900e-003   |          | 22.1720         | 22.1720         | 6.1000e-004        | 3.5000e-003        | 23.2306         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        |          | 0.0000          | 0.0000          | 0.0000             | 0.0000             | 0.0000          |
| Worker       | 0.0674        | 0.0539        | 0.8049        | 2.1300e-003        | 0.2280        | 1.3200e-003        | 0.2293        | 0.0605         | 1.2100e-003        | 0.0617        |          | 214.7902        | 214.7902        | 4.7600e-003        | 4.9600e-003        | 216.3886        |
| <b>Total</b> | <b>0.0693</b> | <b>0.1097</b> | <b>0.8161</b> | <b>2.3400e-003</b> | <b>0.2338</b> | <b>2.1500e-003</b> | <b>0.2360</b> | <b>0.0621</b>  | <b>2.0000e-003</b> | <b>0.0641</b> |          | <b>236.9622</b> | <b>236.9622</b> | <b>5.3700e-003</b> | <b>8.4600e-003</b> | <b>239.6192</b> |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**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    | lb/day |        |        |        |               |              |            |                |               |             | lb/day   |           |           |        |        |        |
| 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 |
| 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 |

**4.2 Trip Summary Information**

| Land Use                   | Average Daily Trip Rate |          |        | Unmitigated | Mitigated  |
|----------------------------|-------------------------|----------|--------|-------------|------------|
|                            | Weekday                 | Saturday | Sunday | Annual VMT  | Annual VMT |
| 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 Non-Asphalt Surfaces | 9.50       | 7.30       | 7.30        | 0.00       | 0.00       | 0.00        | 0              | 0        | 0       |

**4.4 Fleet Mix**

| Land Use                   | LDA      | LDT1     | LDT2     | MDV      | LHD1     | LHD2     | MHD      | HHD      | OBUS     | UBUS     | MCY      | SBUS     | MH       |
|----------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Other Non-Asphalt Surfaces | 0.543438 | 0.060776 | 0.184542 | 0.125993 | 0.024133 | 0.006619 | 0.012016 | 0.011244 | 0.000789 | 0.000455 | 0.025773 | 0.000920 | 0.003302 |



New Construction of 1-2 MW Charging Infrastructure - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

|                        | ROG    | NOx    | CO     | SO2    | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4    | N2O    | CO2e   |
|------------------------|--------|--------|--------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|--------|--------|--------|
| Category               | lb/day |        |        |        |               |              |            |                |               |             | lb/day   |           |           |        |        |        |
| NaturalGas Mitigated   | 0.0000 | 0.0000 | 0.0000 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      |          | 0.0000    | 0.0000    | 0.0000 | 0.0000 | 0.0000 |
| NaturalGas 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 |

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

|                            | NaturalGas Use | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2     | Total CO2     | CH4           | N2O           | CO2e          |
|----------------------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|---------------|---------------|---------------|---------------|---------------|
| Land Use                   | kBTU/yr        | lb/day        |               |               |               |               |               |               |                |               |               | lb/day   |               |               |               |               |               |
| Other Non-Asphalt Surfaces | 0              | 0.0000        | 0.0000        | 0.0000        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        |
| <b>Total</b>               |                | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.2 Energy by Land Use - NaturalGas**

Mitigated

|                            | NaturalGas Use | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2     | Total CO2     | CH4           | N2O           | CO2e          |
|----------------------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|---------------|---------------|---------------|---------------|---------------|
| Land Use                   | kBTU/yr        | lb/day        |               |               |               |               |               |               |                |               |               | lb/day   |               |               |               |               |               |
| Other Non-Asphalt Surfaces | 0              | 0.0000        | 0.0000        | 0.0000        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        |
| <b>Total</b>               |                | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |

**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    | lb/day |        |             |        |               |              |            |                |               |             | lb/day   |             |             |        |     |             |
| Mitigated   | 0.1187 | 0.0000 | 5.1000e-004 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      |          | 1.0900e-003 | 1.0900e-003 | 0.0000 |     | 1.1600e-003 |
| Unmitigated | 0.1187 | 0.0000 | 5.1000e-004 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      |          | 1.0900e-003 | 1.0900e-003 | 0.0000 |     | 1.1600e-003 |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**6.2 Area by SubCategory**

**Unmitigated**

|                       | ROG           | NOx           | CO                 | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2          | Total CO2          | CH4           | N2O | CO2e               |
|-----------------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|--------------------|--------------------|---------------|-----|--------------------|
| SubCategory           | lb/day        |               |                    |               |               |               |               |                |               |               | lb/day   |                    |                    |               |     |                    |
| Architectural Coating | 0.0415        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Consumer Products     | 0.0771        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Landscaping           | 5.0000e-005   | 0.0000        | 5.1000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 1.0900e-003        | 1.0900e-003        | 0.0000        |     | 1.1600e-003        |
| <b>Total</b>          | <b>0.1187</b> | <b>0.0000</b> | <b>5.1000e-004</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>1.0900e-003</b> | <b>1.0900e-003</b> | <b>0.0000</b> |     | <b>1.1600e-003</b> |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**6.2 Area by SubCategory**

Mitigated

|                       | ROG           | NOx           | CO                 | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2          | Total CO2          | CH4           | N2O | CO2e               |
|-----------------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|--------------------|--------------------|---------------|-----|--------------------|
| SubCategory           | lb/day        |               |                    |               |               |               |               |                |               |               | lb/day   |                    |                    |               |     |                    |
| Architectural Coating | 0.0415        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Consumer Products     | 0.0771        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Landscaping           | 5.0000e-005   | 0.0000        | 5.1000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 1.0900e-003        | 1.0900e-003        | 0.0000        |     | 1.1600e-003        |
| <b>Total</b>          | <b>0.1187</b> | <b>0.0000</b> | <b>5.1000e-004</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>1.0900e-003</b> | <b>1.0900e-003</b> | <b>0.0000</b> |     | <b>1.1600e-003</b> |

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

New Construction of 1-2 MW Charging Infrastructure - Statewide , Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

**9.0 Operational Offroad**

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

**10.0 Stationary Equipment**

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**Fire Pumps and Emergency Generators**

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

**Boilers**

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

**User Defined Equipment**

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

**11.0 Vegetation**

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New Construction of 1-2 MW Charging Infrastructure - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**New Construction of 1-2 MW Charging Infrastructure  
Statewide , Winter**

**1.0 Project Characteristics**

**1.1 Land Usage**

| Land Uses                  | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|----------------------------|------|--------|-------------|--------------------|------------|
| Other Non-Asphalt Surfaces | 5.00 | Acre   | 5.00        | 217,800.00         | 0          |

**1.2 Other Project Characteristics**

|                                |                         |                                |     |                                  |      |
|--------------------------------|-------------------------|--------------------------------|-----|----------------------------------|------|
| <b>Urbanization</b>            | Urban                   | <b>Wind Speed (m/s)</b>        | 2.2 | <b>Precipitation Freq (Days)</b> | 54   |
| <b>Climate Zone</b>            | 4                       |                                |     | <b>Operational Year</b>          | 2030 |
| <b>Utility Company</b>         | Alameda Municipal Power |                                |     |                                  |      |
| <b>CO2 Intensity (lb/MWhr)</b> | 0                       | <b>CH4 Intensity (lb/MWhr)</b> | 0   | <b>N2O Intensity (lb/MWhr)</b>   | 0    |

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

Project Characteristics - Construction emissions only.

Land Use -

Construction Phase - Assumed construction would occur from January 4, 2021 through May 5, 2021.

Off-road Equipment - Assumed construction unit amount and hours/day.

Off-road Equipment - Assumed construction unit amount and hours/day.

Off-road Equipment - Assumed construction unit amount and hours/day.

Grading - Assumed no grading.

Trips and VMT - Assumed worker, vendor and hauling trips and trip lengths.

| Table Name           | Column Name | Default Value | New Value |
|----------------------|-------------|---------------|-----------|
| tblConstructionPhase | NumDays     | 5.00          | 16.00     |
| tblConstructionPhase | NumDays     | 230.00        | 45.00     |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

|                     |                            |       |                           |
|---------------------|----------------------------|-------|---------------------------|
| tblGrading          | AcresOfGrading             | 6.00  | 0.00                      |
| tblOffRoadEquipment | LoadFactor                 | 0.37  | 0.37                      |
| tblOffRoadEquipment | LoadFactor                 | 0.20  | 0.20                      |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Graders                   |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Tractors/Loaders/Backhoes |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Trenchers                 |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Tractors/Loaders/Backhoes |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Plate Compactors          |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Generator Sets            |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Concrete/Industrial Saws  |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Cement and Mortar Mixers  |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Bore/Drill Rigs           |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Tractors/Loaders/Backhoes |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Air Compressors           |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Forklifts                 |
| tblOffRoadEquipment | OffRoadEquipmentType       |       | Generator Sets            |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 4.00  | 1.00                      |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00  | 1.00                      |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00  | 1.00                      |
| tblOffRoadEquipment | UsageHours                 | 8.00  | 6.00                      |
| tblOffRoadEquipment | UsageHours                 | 7.00  | 8.00                      |
| tblTripsAndVMT      | HaulingTripLength          | 20.00 | 30.00                     |
| tblTripsAndVMT      | HaulingTripLength          | 20.00 | 30.00                     |
| tblTripsAndVMT      | HaulingTripLength          | 20.00 | 30.00                     |
| tblTripsAndVMT      | HaulingTripNumber          | 0.00  | 5.00                      |
| tblTripsAndVMT      | HaulingTripNumber          | 0.00  | 10.00                     |
| tblTripsAndVMT      | HaulingTripNumber          | 0.00  | 4.00                      |
| tblTripsAndVMT      | VendorTripLength           | 7.30  | 30.00                     |
| tblTripsAndVMT      | VendorTripLength           | 7.30  | 30.00                     |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

|                |                  |       |       |
|----------------|------------------|-------|-------|
| tbITripsAndVMT | VendorTripLength | 7.30  | 30.00 |
| tbITripsAndVMT | VendorTripNumber | 36.00 | 0.00  |
| tbITripsAndVMT | WorkerTripLength | 10.80 | 30.00 |
| tbITripsAndVMT | WorkerTripLength | 10.80 | 30.00 |
| tbITripsAndVMT | WorkerTripLength | 10.80 | 30.00 |
| tbITripsAndVMT | WorkerTripNumber | 5.00  | 10.00 |
| tbITripsAndVMT | WorkerTripNumber | 91.00 | 10.00 |

**2.0 Emissions Summary**

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New Construction of 1-2 MW Charging Infrastructure - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**2.1 Overall Construction (Maximum Daily Emission)**

**Unmitigated Construction**

|                | ROG           | NOx            | CO             | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|----------------|---------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Year           | lb/day        |                |                |               |               |               |               |                |               |               | lb/day        |                   |                   |               |               |                   |
| 2021           | 2.0056        | 17.1695        | 17.5239        | 0.0357        | 0.4595        | 0.9540        | 1.4135        | 0.1219         | 0.9069        | 1.0288        | 0.0000        | 3,415.8287        | 3,415.8287        | 0.6356        | 0.0130        | 3,435.5898        |
| <b>Maximum</b> | <b>2.0056</b> | <b>17.1695</b> | <b>17.5239</b> | <b>0.0357</b> | <b>0.4595</b> | <b>0.9540</b> | <b>1.4135</b> | <b>0.1219</b>  | <b>0.9069</b> | <b>1.0288</b> | <b>0.0000</b> | <b>3,415.8287</b> | <b>3,415.8287</b> | <b>0.6356</b> | <b>0.0130</b> | <b>3,435.5898</b> |

**Mitigated Construction**

|                | ROG           | NOx            | CO             | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|----------------|---------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Year           | lb/day        |                |                |               |               |               |               |                |               |               | lb/day        |                   |                   |               |               |                   |
| 2021           | 2.0056        | 17.1695        | 17.5239        | 0.0357        | 0.4595        | 0.9540        | 1.4135        | 0.1219         | 0.9069        | 1.0288        | 0.0000        | 3,415.8287        | 3,415.8287        | 0.6356        | 0.0130        | 3,435.5898        |
| <b>Maximum</b> | <b>2.0056</b> | <b>17.1695</b> | <b>17.5239</b> | <b>0.0357</b> | <b>0.4595</b> | <b>0.9540</b> | <b>1.4135</b> | <b>0.1219</b>  | <b>0.9069</b> | <b>1.0288</b> | <b>0.0000</b> | <b>3,415.8287</b> | <b>3,415.8287</b> | <b>0.6356</b> | <b>0.0130</b> | <b>3,435.5898</b> |

|                          | ROG         | NOx         | CO          | SO2         | Fugitive PM10 | Exhaust PM10 | PM10 Total  | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2    | NBio- CO2   | Total CO2   | CH4         | N2O         | CO2e        |
|--------------------------|-------------|-------------|-------------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Percent Reduction</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b>   | <b>0.00</b>  | <b>0.00</b> | <b>0.00</b>    | <b>0.00</b>   | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**2.2 Overall Operational**

**Unmitigated Operational**

|              | ROG           | NOx           | CO                 | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2          | Total CO2          | CH4           | N2O           | CO2e               |
|--------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|--------------------|--------------------|---------------|---------------|--------------------|
| Category     | lb/day        |               |                    |               |               |               |               |                |               |               | lb/day   |                    |                    |               |               |                    |
| Area         | 0.1187        | 0.0000        | 5.1000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 1.0900e-003        | 1.0900e-003        | 0.0000        |               | 1.1600e-003        |
| 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             |
| 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             |
| <b>Total</b> | <b>0.1187</b> | <b>0.0000</b> | <b>5.1000e-004</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b>  | <b>0.0000</b> | <b>0.0000</b> |          | <b>1.0900e-003</b> | <b>1.0900e-003</b> | <b>0.0000</b> | <b>0.0000</b> | <b>1.1600e-003</b> |

**Mitigated Operational**

|              | ROG           | NOx           | CO                 | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2          | Total CO2          | CH4           | N2O           | CO2e               |
|--------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|--------------------|--------------------|---------------|---------------|--------------------|
| Category     | lb/day        |               |                    |               |               |               |               |                |               |               | lb/day   |                    |                    |               |               |                    |
| Area         | 0.1187        | 0.0000        | 5.1000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 1.0900e-003        | 1.0900e-003        | 0.0000        |               | 1.1600e-003        |
| 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             |
| 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             |
| <b>Total</b> | <b>0.1187</b> | <b>0.0000</b> | <b>5.1000e-004</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b>  | <b>0.0000</b> | <b>0.0000</b> |          | <b>1.0900e-003</b> | <b>1.0900e-003</b> | <b>0.0000</b> | <b>0.0000</b> | <b>1.1600e-003</b> |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

|                   | ROG  | NOx  | CO   | SO2  | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4  | N2O  | CO2e |
|-------------------|------|------|------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| 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      | 1/4/2021   | 1/25/2021 | 5             | 16       |                   |
| 2            | Trenching           | Trenching             | 1/26/2021  | 3/8/2021  | 5             | 30       |                   |
| 3            | System Installation | Building Construction | 3/9/2021   | 5/10/2021 | 5             | 45       |                   |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 5**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name       | Offroad Equipment Type    | Amount | Usage Hours | Horse Power | Load Factor |
|------------------|---------------------------|--------|-------------|-------------|-------------|
| Site Preparation | Graders                   | 1      | 6.00        | 187         | 0.41        |
| Site Preparation | Tractors/Loaders/Backhoes | 1      | 6.00        | 97          | 0.37        |
| Trenching        | Trenchers                 | 2      | 6.00        | 78          | 0.50        |
| Trenching        | Tractors/Loaders/Backhoes | 1      | 8.00        | 97          | 0.37        |
| Trenching        | Plate Compactors          | 1      | 8.00        | 8           | 0.43        |
| Trenching        | Generator Sets            | 1      | 8.00        | 84          | 0.74        |
| Trenching        | Concrete/Industrial Saws  | 1      | 8.00        | 81          | 0.73        |
| Trenching        | Cement and Mortar Mixers  | 1      | 8.00        | 9           | 0.56        |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

|                     |                           |   |      |     |      |
|---------------------|---------------------------|---|------|-----|------|
| Trenching           | Bore/Drill Rigs           | 1 | 8.00 | 221 | 0.50 |
| System Installation | Tractors/Loaders/Backhoes | 1 | 8.00 | 97  | 0.37 |
| System Installation | Air Compressors           | 1 | 8.00 | 78  | 0.48 |
| System Installation | Forklifts                 | 1 | 8.00 | 89  | 0.20 |
| System Installation | Generator Sets            | 1 | 8.00 | 84  | 0.74 |

**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 |
|---------------------|-------------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|----------------------|----------------------|-----------------------|
| Trenching           | 8                       | 20.00              | 0.00               | 4.00                | 30.00              | 30.00              | 30.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| System Installation | 4                       | 10.00              | 0.00               | 10.00               | 30.00              | 30.00              | 30.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Site Preparation    | 2                       | 10.00              | 0.00               | 5.00                | 30.00              | 30.00              | 30.00               | LD_Mix               | HDT_Mix              | HHDT                  |

**3.1 Mitigation Measures Construction**

**3.2 Site Preparation - 2021**

**Unmitigated Construction On-Site**

|               | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4           | N2O | CO2e            |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|-----------------|-----------------|---------------|-----|-----------------|
| Category      | lb/day        |               |               |                    |               |               |               |                |               |               | lb/day   |                 |                 |               |     |                 |
| Fugitive Dust |               |               |               |                    | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        |          |                 | 0.0000          |               |     | 0.0000          |
| Off-Road      | 0.4802        | 5.8653        | 3.0206        | 7.3000e-003        |               | 0.2246        | 0.2246        |                | 0.2066        | 0.2066        |          | 706.9381        | 706.9381        | 0.2286        |     | 712.6541        |
| <b>Total</b>  | <b>0.4802</b> | <b>5.8653</b> | <b>3.0206</b> | <b>7.3000e-003</b> | <b>0.0000</b> | <b>0.2246</b> | <b>0.2246</b> | <b>0.0000</b>  | <b>0.2066</b> | <b>0.2066</b> |          | <b>706.9381</b> | <b>706.9381</b> | <b>0.2286</b> |     | <b>712.6541</b> |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.2 Site Preparation - 2021**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4                | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|-----------------|-----------------|--------------------|---------------|-----------------|
| Category     | lb/day        |               |               |                    |               |                    |               |                |                    |               | lb/day   |                 |                 |                    |               |                 |
| Hauling      | 2.5800e-003   | 0.0830        | 0.0160        | 2.9000e-004        | 8.2000e-003   | 1.1600e-003        | 9.3700e-003   | 2.2500e-003    | 1.1100e-003        | 3.3600e-003   |          | 31.1873         | 31.1873         | 8.5000e-004        | 4.9300e-003   | 32.6763         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        |          | 0.0000          | 0.0000          | 0.0000             | 0.0000        | 0.0000          |
| Worker       | 0.0722        | 0.0620        | 0.6979        | 1.9700e-003        | 0.2280        | 1.3200e-003        | 0.2293        | 0.0605         | 1.2100e-003        | 0.0617        |          | 199.2405        | 199.2405        | 4.6700e-003        | 5.4400e-003   | 200.9792        |
| <b>Total</b> | <b>0.0747</b> | <b>0.1449</b> | <b>0.7139</b> | <b>2.2600e-003</b> | <b>0.2362</b> | <b>2.4800e-003</b> | <b>0.2387</b> | <b>0.0627</b>  | <b>2.3200e-003</b> | <b>0.0650</b> |          | <b>230.4278</b> | <b>230.4278</b> | <b>5.5200e-003</b> | <b>0.0104</b> | <b>233.6556</b> |

**Mitigated Construction On-Site**

|               | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O | CO2e            |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|-----|-----------------|
| Category      | lb/day        |               |               |                    |               |               |               |                |               |               | lb/day        |                 |                 |               |     |                 |
| Fugitive Dust |               |               |               |                    | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        |               |                 | 0.0000          |               |     | 0.0000          |
| Off-Road      | 0.4802        | 5.8653        | 3.0206        | 7.3000e-003        |               | 0.2246        | 0.2246        |                | 0.2066        | 0.2066        | 0.0000        | 706.9381        | 706.9381        | 0.2286        |     | 712.6541        |
| <b>Total</b>  | <b>0.4802</b> | <b>5.8653</b> | <b>3.0206</b> | <b>7.3000e-003</b> | <b>0.0000</b> | <b>0.2246</b> | <b>0.2246</b> | <b>0.0000</b>  | <b>0.2066</b> | <b>0.2066</b> | <b>0.0000</b> | <b>706.9381</b> | <b>706.9381</b> | <b>0.2286</b> |     | <b>712.6541</b> |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.2 Site Preparation - 2021**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4                | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|-----------------|-----------------|--------------------|---------------|-----------------|
| Category     | lb/day        |               |               |                    |               |                    |               |                |                    |               | lb/day   |                 |                 |                    |               |                 |
| Hauling      | 2.5800e-003   | 0.0830        | 0.0160        | 2.9000e-004        | 8.2000e-003   | 1.1600e-003        | 9.3700e-003   | 2.2500e-003    | 1.1100e-003        | 3.3600e-003   |          | 31.1873         | 31.1873         | 8.5000e-004        | 4.9300e-003   | 32.6763         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        |          | 0.0000          | 0.0000          | 0.0000             | 0.0000        | 0.0000          |
| Worker       | 0.0722        | 0.0620        | 0.6979        | 1.9700e-003        | 0.2280        | 1.3200e-003        | 0.2293        | 0.0605         | 1.2100e-003        | 0.0617        |          | 199.2405        | 199.2405        | 4.6700e-003        | 5.4400e-003   | 200.9792        |
| <b>Total</b> | <b>0.0747</b> | <b>0.1449</b> | <b>0.7139</b> | <b>2.2600e-003</b> | <b>0.2362</b> | <b>2.4800e-003</b> | <b>0.2387</b> | <b>0.0627</b>  | <b>2.3200e-003</b> | <b>0.0650</b> |          | <b>230.4278</b> | <b>230.4278</b> | <b>5.5200e-003</b> | <b>0.0104</b> | <b>233.6556</b> |

**3.3 Trenching - 2021**

**Unmitigated Construction On-Site**

|              | ROG           | NOx            | CO             | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2         | Total CO2         | CH4           | N2O | CO2e              |
|--------------|---------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|-------------------|-------------------|---------------|-----|-------------------|
| Category     | lb/day        |                |                |               |               |               |               |                |               |               | lb/day   |                   |                   |               |     |                   |
| Off-Road     | 1.8602        | 17.0102        | 16.1213        | 0.0316        |               | 0.9509        | 0.9509        |                | 0.9040        | 0.9040        |          | 3,004.0412        | 3,004.0412        | 0.6259        |     | 3,019.6894        |
| <b>Total</b> | <b>1.8602</b> | <b>17.0102</b> | <b>16.1213</b> | <b>0.0316</b> |               | <b>0.9509</b> | <b>0.9509</b> |                | <b>0.9040</b> | <b>0.9040</b> |          | <b>3,004.0412</b> | <b>3,004.0412</b> | <b>0.6259</b> |     | <b>3,019.6894</b> |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.3 Trenching - 2021**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4                | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|-----------------|-----------------|--------------------|---------------|-----------------|
| Category     | lb/day        |               |               |                    |               |                    |               |                |                    |               | lb/day   |                 |                 |                    |               |                 |
| Hauling      | 1.1000e-003   | 0.0354        | 6.8100e-003   | 1.2000e-004        | 3.5000e-003   | 5.0000e-004        | 4.0000e-003   | 9.6000e-004    | 4.7000e-004        | 1.4300e-003   |          | 13.3066         | 13.3066         | 3.6000e-004        | 2.1000e-003   | 13.9419         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        |          | 0.0000          | 0.0000          | 0.0000             | 0.0000        | 0.0000          |
| Worker       | 0.1443        | 0.1239        | 1.3958        | 3.9400e-003        | 0.4560        | 2.6300e-003        | 0.4587        | 0.1209         | 2.4200e-003        | 0.1233        |          | 398.4810        | 398.4810        | 9.3300e-003        | 0.0109        | 401.9585        |
| <b>Total</b> | <b>0.1454</b> | <b>0.1593</b> | <b>1.4026</b> | <b>4.0600e-003</b> | <b>0.4595</b> | <b>3.1300e-003</b> | <b>0.4627</b> | <b>0.1219</b>  | <b>2.8900e-003</b> | <b>0.1248</b> |          | <b>411.7875</b> | <b>411.7875</b> | <b>9.6900e-003</b> | <b>0.0130</b> | <b>415.9004</b> |

**Mitigated Construction On-Site**

|              | ROG           | NOx            | CO             | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O | CO2e              |
|--------------|---------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|-----|-------------------|
| Category     | lb/day        |                |                |               |               |               |               |                |               |               | lb/day        |                   |                   |               |     |                   |
| Off-Road     | 1.8602        | 17.0102        | 16.1213        | 0.0316        |               | 0.9509        | 0.9509        |                | 0.9040        | 0.9040        | 0.0000        | 3,004.0412        | 3,004.0412        | 0.6259        |     | 3,019.6894        |
| <b>Total</b> | <b>1.8602</b> | <b>17.0102</b> | <b>16.1213</b> | <b>0.0316</b> |               | <b>0.9509</b> | <b>0.9509</b> |                | <b>0.9040</b> | <b>0.9040</b> | <b>0.0000</b> | <b>3,004.0412</b> | <b>3,004.0412</b> | <b>0.6259</b> |     | <b>3,019.6894</b> |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.3 Trenching - 2021**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4                | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|-----------------|-----------------|--------------------|---------------|-----------------|
| Category     | lb/day        |               |               |                    |               |                    |               |                |                    |               | lb/day   |                 |                 |                    |               |                 |
| Hauling      | 1.1000e-003   | 0.0354        | 6.8100e-003   | 1.2000e-004        | 3.5000e-003   | 5.0000e-004        | 4.0000e-003   | 9.6000e-004    | 4.7000e-004        | 1.4300e-003   |          | 13.3066         | 13.3066         | 3.6000e-004        | 2.1000e-003   | 13.9419         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        |          | 0.0000          | 0.0000          | 0.0000             | 0.0000        | 0.0000          |
| Worker       | 0.1443        | 0.1239        | 1.3958        | 3.9400e-003        | 0.4560        | 2.6300e-003        | 0.4587        | 0.1209         | 2.4200e-003        | 0.1233        |          | 398.4810        | 398.4810        | 9.3300e-003        | 0.0109        | 401.9585        |
| <b>Total</b> | <b>0.1454</b> | <b>0.1593</b> | <b>1.4026</b> | <b>4.0600e-003</b> | <b>0.4595</b> | <b>3.1300e-003</b> | <b>0.4627</b> | <b>0.1219</b>  | <b>2.8900e-003</b> | <b>0.1248</b> |          | <b>411.7875</b> | <b>411.7875</b> | <b>9.6900e-003</b> | <b>0.0130</b> | <b>415.9004</b> |

**3.4 System Installation - 2021**

**Unmitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2         | Total CO2         | CH4           | N2O | CO2e              |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|-------------------|-------------------|---------------|-----|-------------------|
| Category     | lb/day        |               |               |               |               |               |               |                |               |               | lb/day   |                   |                   |               |     |                   |
| Off-Road     | 0.9658        | 8.2751        | 9.5329        | 0.0152        |               | 0.4886        | 0.4886        |                | 0.4730        | 0.4730        |          | 1,446.7498        | 1,446.7498        | 0.2026        |     | 1,451.8144        |
| <b>Total</b> | <b>0.9658</b> | <b>8.2751</b> | <b>9.5329</b> | <b>0.0152</b> |               | <b>0.4886</b> | <b>0.4886</b> |                | <b>0.4730</b> | <b>0.4730</b> |          | <b>1,446.7498</b> | <b>1,446.7498</b> | <b>0.2026</b> |     | <b>1,451.8144</b> |



New Construction of 1-2 MW Charging Infrastructure - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 System Installation - 2021**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4                | N2O                | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|-----------------|-----------------|--------------------|--------------------|-----------------|
| Category     | lb/day        |               |               |                    |               |                    |               |                |                    |               | lb/day   |                 |                 |                    |                    |                 |
| Hauling      | 1.8300e-003   | 0.0590        | 0.0114        | 2.1000e-004        | 5.8300e-003   | 8.3000e-004        | 6.6600e-003   | 1.6000e-003    | 7.9000e-004        | 2.3900e-003   |          | 22.1776         | 22.1776         | 6.0000e-004        | 3.5000e-003        | 23.2365         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        |          | 0.0000          | 0.0000          | 0.0000             | 0.0000             | 0.0000          |
| Worker       | 0.0722        | 0.0620        | 0.6979        | 1.9700e-003        | 0.2280        | 1.3200e-003        | 0.2293        | 0.0605         | 1.2100e-003        | 0.0617        |          | 199.2405        | 199.2405        | 4.6700e-003        | 5.4400e-003        | 200.9792        |
| <b>Total</b> | <b>0.0740</b> | <b>0.1210</b> | <b>0.7092</b> | <b>2.1800e-003</b> | <b>0.2338</b> | <b>2.1500e-003</b> | <b>0.2360</b> | <b>0.0621</b>  | <b>2.0000e-003</b> | <b>0.0641</b> |          | <b>221.4181</b> | <b>221.4181</b> | <b>5.2700e-003</b> | <b>8.9400e-003</b> | <b>224.2157</b> |

**Mitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O | CO2e              |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|-----|-------------------|
| Category     | lb/day        |               |               |               |               |               |               |                |               |               | lb/day        |                   |                   |               |     |                   |
| Off-Road     | 0.9658        | 8.2751        | 9.5329        | 0.0152        |               | 0.4886        | 0.4886        |                | 0.4730        | 0.4730        | 0.0000        | 1,446.7498        | 1,446.7498        | 0.2026        |     | 1,451.8144        |
| <b>Total</b> | <b>0.9658</b> | <b>8.2751</b> | <b>9.5329</b> | <b>0.0152</b> |               | <b>0.4886</b> | <b>0.4886</b> |                | <b>0.4730</b> | <b>0.4730</b> | <b>0.0000</b> | <b>1,446.7498</b> | <b>1,446.7498</b> | <b>0.2026</b> |     | <b>1,451.8144</b> |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 System Installation - 2021**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2 | NBio- CO2       | Total CO2       | CH4                | N2O                | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------|-----------------|-----------------|--------------------|--------------------|-----------------|
| Category     | lb/day        |               |               |                    |               |                    |               |                |                    |               | lb/day   |                 |                 |                    |                    |                 |
| Hauling      | 1.8300e-003   | 0.0590        | 0.0114        | 2.1000e-004        | 5.8300e-003   | 8.3000e-004        | 6.6600e-003   | 1.6000e-003    | 7.9000e-004        | 2.3900e-003   |          | 22.1776         | 22.1776         | 6.0000e-004        | 3.5000e-003        | 23.2365         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        |          | 0.0000          | 0.0000          | 0.0000             | 0.0000             | 0.0000          |
| Worker       | 0.0722        | 0.0620        | 0.6979        | 1.9700e-003        | 0.2280        | 1.3200e-003        | 0.2293        | 0.0605         | 1.2100e-003        | 0.0617        |          | 199.2405        | 199.2405        | 4.6700e-003        | 5.4400e-003        | 200.9792        |
| <b>Total</b> | <b>0.0740</b> | <b>0.1210</b> | <b>0.7092</b> | <b>2.1800e-003</b> | <b>0.2338</b> | <b>2.1500e-003</b> | <b>0.2360</b> | <b>0.0621</b>  | <b>2.0000e-003</b> | <b>0.0641</b> |          | <b>221.4181</b> | <b>221.4181</b> | <b>5.2700e-003</b> | <b>8.9400e-003</b> | <b>224.2157</b> |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**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    | lb/day |        |        |        |               |              |            |                |               |             | lb/day   |           |           |        |        |        |
| 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 |
| 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 |

**4.2 Trip Summary Information**

| Land Use                   | Average Daily Trip Rate |          |        | Unmitigated | Mitigated  |
|----------------------------|-------------------------|----------|--------|-------------|------------|
|                            | Weekday                 | Saturday | Sunday | Annual VMT  | Annual VMT |
| 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 Non-Asphalt Surfaces | 9.50       | 7.30       | 7.30        | 0.00       | 0.00       | 0.00        | 0              | 0        | 0       |

**4.4 Fleet Mix**

| Land Use                   | LDA      | LDT1     | LDT2     | MDV      | LHD1     | LHD2     | MHD      | HHD      | OBUS     | UBUS     | MCY      | SBUS     | MH       |
|----------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Other Non-Asphalt Surfaces | 0.543438 | 0.060776 | 0.184542 | 0.125993 | 0.024133 | 0.006619 | 0.012016 | 0.011244 | 0.000789 | 0.000455 | 0.025773 | 0.000920 | 0.003302 |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

|                        | ROG    | NOx    | CO     | SO2    | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4    | N2O    | CO2e   |
|------------------------|--------|--------|--------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|--------|--------|--------|
| Category               | lb/day |        |        |        |               |              |            |                |               |             | lb/day   |           |           |        |        |        |
| NaturalGas Mitigated   | 0.0000 | 0.0000 | 0.0000 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      |          | 0.0000    | 0.0000    | 0.0000 | 0.0000 | 0.0000 |
| NaturalGas 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 |

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

|                            | NaturalGas Use | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2     | Total CO2     | CH4           | N2O           | CO2e          |
|----------------------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|---------------|---------------|---------------|---------------|---------------|
| Land Use                   | kBTU/yr        | lb/day        |               |               |               |               |               |               |                |               |               | lb/day   |               |               |               |               |               |
| Other Non-Asphalt Surfaces | 0              | 0.0000        | 0.0000        | 0.0000        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        |
| <b>Total</b>               |                | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.2 Energy by Land Use - NaturalGas**

Mitigated

|                            | NaturalGas Use | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2     | Total CO2     | CH4           | N2O           | CO2e          |
|----------------------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|---------------|---------------|---------------|---------------|---------------|
| Land Use                   | kBTU/yr        | lb/day        |               |               |               |               |               |               |                |               |               | lb/day   |               |               |               |               |               |
| Other Non-Asphalt Surfaces | 0              | 0.0000        | 0.0000        | 0.0000        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        |
| <b>Total</b>               |                | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> | <b>0.0000</b> |

**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    | lb/day |        |             |        |               |              |            |                |               |             | lb/day   |             |             |        |     |             |
| Mitigated   | 0.1187 | 0.0000 | 5.1000e-004 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      |          | 1.0900e-003 | 1.0900e-003 | 0.0000 |     | 1.1600e-003 |
| Unmitigated | 0.1187 | 0.0000 | 5.1000e-004 | 0.0000 |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      |          | 1.0900e-003 | 1.0900e-003 | 0.0000 |     | 1.1600e-003 |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**6.2 Area by SubCategory**

**Unmitigated**

|                       | ROG           | NOx           | CO                 | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2          | Total CO2          | CH4           | N2O | CO2e               |
|-----------------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|--------------------|--------------------|---------------|-----|--------------------|
| SubCategory           | lb/day        |               |                    |               |               |               |               |                |               |               | lb/day   |                    |                    |               |     |                    |
| Architectural Coating | 0.0415        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Consumer Products     | 0.0771        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Landscaping           | 5.0000e-005   | 0.0000        | 5.1000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 1.0900e-003        | 1.0900e-003        | 0.0000        |     | 1.1600e-003        |
| <b>Total</b>          | <b>0.1187</b> | <b>0.0000</b> | <b>5.1000e-004</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>1.0900e-003</b> | <b>1.0900e-003</b> | <b>0.0000</b> |     | <b>1.1600e-003</b> |

New Construction of 1-2 MW Charging Infrastructure - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**6.2 Area by SubCategory**

Mitigated

|                       | ROG           | NOx           | CO                 | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2 | NBio- CO2          | Total CO2          | CH4           | N2O | CO2e               |
|-----------------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|----------|--------------------|--------------------|---------------|-----|--------------------|
| SubCategory           | lb/day        |               |                    |               |               |               |               |                |               |               | lb/day   |                    |                    |               |     |                    |
| Architectural Coating | 0.0415        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Consumer Products     | 0.0771        |               |                    |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          |                    | 0.0000             |               |     | 0.0000             |
| Landscaping           | 5.0000e-005   | 0.0000        | 5.1000e-004        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        |          | 1.0900e-003        | 1.0900e-003        | 0.0000        |     | 1.1600e-003        |
| <b>Total</b>          | <b>0.1187</b> | <b>0.0000</b> | <b>5.1000e-004</b> | <b>0.0000</b> |               | <b>0.0000</b> | <b>0.0000</b> |                | <b>0.0000</b> | <b>0.0000</b> |          | <b>1.0900e-003</b> | <b>1.0900e-003</b> | <b>0.0000</b> |     | <b>1.1600e-003</b> |

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

New Construction of 1-2 MW Charging Infrastructure - Statewide , Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

**9.0 Operational Offroad**

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

**10.0 Stationary Equipment**

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**Fire Pumps and Emergency Generators**

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

**Boilers**

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

**User Defined Equipment**

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

**11.0 Vegetation**

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