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Frito-Lay, Inc.
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AIR QUALITY AND GREENHOUSE GAS ANALYSIS
FRITO-LAY MODESTO TRANSFORMATION PROJECT
FRITO-LAY
MODESTO, CALIFORNIA

RAMBOLL

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APPENDICES

ACRONYMS AND ABBREVIATIONS

AB – Assembly Bill
BPS – best performance standards
CAA – Clean Air Act
CALEEMOD – California Emissions Estimator Model
CalEPA – California Environmental Protection Agency
CAP - criteria air pollutant
CARB – California Air Resources Board
CAT – Climate Action Team
CEQA – California Environmental Quality Act
cfh – cubic feet per hour
CH_4 – methane
CO – carbon monoxide
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
cy - cubic yards
DTC – Dorito Tortilla Chip
EMFAC – Emission Factor Model
EO – Executive Order
EPA – Environmental Protection Agency
FCP – Fried Cheese Puff
GHG - greenhouse gas
gpm – gallons per minute
HHDT – heavy-heavy duty truck
LCFS – Low Carbon Fuel Standard
LDA – passenger car
LDT – light-duty truck
MDV – medium-duty vehicle
MPO – metropolitan planning organization
MT - metric ton
MW – megawatts
N_2O - nitrous oxide
NO_x - oxides of nitrogen
$PM_{2.5}$ - particulate matter less than 2.5 microns in diameter
PM_{10} - particulate matter less than 10 microns in diameter
ROG - reactive organic gases
SJVAB - San Joaquin Valley Air Basin
SJVAPCD - San Joaquin Valley Air Pollution Control District
SO_2 – sulfur dioxide
sqft - square feet
StanCOG – Stanislaus Council of Governments
VOC – volatile organic compounds

1. INTRODUCTION

1.1 Purpose of the Air Quality and Greenhouse Gas Analysis

Frito-Lay, Inc. (Frito-Lay) is proposing to expand its existing Modesto snack food manufacturing facility to support the addition of new snack food production lines, packaging systems and warehouse operations to increase snack food production capacity at the Modesto facility. This air quality and greenhouse gas (GHG) analysis has been prepared to evaluate whether the estimated criteria air pollutant (CAP) and GHG emissions from the Frito-Lay Transformation Project (Project) would cause significant impacts to the project area. This assessment follows the *Guidance for Assessing and Mitigating Air Quality Impacts* prepared by the San Joaquin Valley Air Pollution Control District (SJVAPCD or District) for quantification of emissions and evaluation of potential impacts to air resources.[1]

1.2 Organization of the Air Quality and Greenhouse Gas Analysis

The air quality and GHG analysis is organized as follows:

Chapter 1 Introduction provides a brief description of the proposed Project, as well as the purpose and intended use of the analysis.

Chapter 2 Project Description provides a detailed description of the proposed Project, including its location and setting. Project objectives are identified, and information is provided on the proposed Project characteristics and construction scenario.

Chapter 3 Air Quality Analysis provides a description of the calculation methodology for CAP emissions for construction, permitted operational activities, and non-permitted operational activities. This section also includes an analysis of air quality impact.

Chapter 4 Greenhouse Gas Analysis provides a description of the calculation methodology for GHG emissions for construction, permitted operational activities, and non-permitted operational activities. This section also includes an analysis of GHG impact.

Chapter 5 Summary summarizes the findings of the air quality and GHG analysis.

Chapter 6 Preparers identifies those persons responsible for the preparation of this analysis.

[1] SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts. Available at: https://www.valleyair.org/transportation/GAMAQI-2015/FINAL-DRAFT-GAMAQI.PDF. Accessed: December 2020.

2. PROJECT DESCRIPTION

2.1 Project Background

Frito-Lay, Inc. (Frito-Lay) is proposing to expand the existing Modesto facility to support the addition of new snack food production lines, packaging systems and warehouse operations. This Transformation Project would involve the addition of new structures, installation of new snack food production equipment, and the addition of a second rail spur. The proposed changes will increase snack food production capacity at the Modesto facility, increase the warehouse capacity to meet the demands of the expanded production lines, and reduce the need to import packaged snack food products from other plants.

2.2 Project Location

The Project site is located on a 71.38-acre parcel at 600 Garner Road, Modesto, Stanislaus County, California, on unincorporated lands. The site is an existing snack food production facility that processes corn and potato starch to make tortilla chips, potato chips, and fried cheese puffs. The Project site is in an area zoned as Industrial (M) under the Stanislaus County General Plan and is generally surrounded by industrial and agricultural land uses.

2.3 Existing Environment

The site is adjacent to unrelated industrial facilities on its north, south, east, and west sides. In addition, agricultural fields are located both south and west of the facility. The closest residential use is located approximately 2000 feet north of the facility. The closest school is located approximately 4000 feet northwest of the facility.

2.4 Project Description

The Frito-Lay Modesto facility (Facility) was established in 1990 and currently consists of one main manufacturing/warehousing building (436,000 square feet (sq ft)), one dedicated warehouse building (63,000 sq ft), and a traffic center for management of material receiving activities and finished product shipping.

With this Project, Frito Lay is proposing to add structures to house new manufacturing and warehouse operations, as well as new material receiving and storage operations (Figure 1). These are described in the following sections.

Manufacturing and Packaging Operations

Frito-Lay is proposing to add approximately 127,000 sq ft of new structure to house two new snack food production lines and one future snack food production line. The new Dorito Tortilla Chip (DTC) production line would consist of a corn cook, soak, and wash system, a fryer, an oven, and a seasoning system equipped with a scrubber. The new Fried Cheese Puff (FCP) line would consist of a blending system, eight extruders equipped with a wet scrubber, a fryer, and a seasoning system equipped with a scrubber. The height of the new manufacturing building will be approximately 46 ft.

Warehouse Operations

Frito-Lay is proposing to add an approximately 39,000 sq ft warehouse building. This building would be equipped with new 3-crane automated storage and retrieval systems with 5,250 pallet areas. The height of the new warehouse building will be approximately 84 ft. An HVAC unit would be located on top of the new warehouse building, which would bring the height of the building with appurtenance to 97 ft.

Receiving and Storage Operations

Frito-Lay is proposing to add two new corn silos, two new cornmeal silos, and three new vegetable oil silos. The cornmeal and vegetable oil tanks would be located at the eastern side of the new manufacturing building. The corn silos would be located on the east side of the new manufacturing building. Bulk materials would be received either by truck or by rail via rail spur. A new second rail spur would be located west of the existing solar field (to be removed).

Additional Considerations

Prior to construction, grading will be required, with an estimated 43,400 cubic yards of soil disturbance. There are no existing public utility easements inside the property fenceline for irrigation, telephone, or electric utilities. Existing customer-owned utility and irrigation facilities will not need to be removed as a result of this Project. Existing (customer-owned) utility connections will be extended to new points of service within the Project site. Extensions include a new fire water line, new service drops from overhead electrical lines, new underground electric service lines, and a new underground storm water pipe (Figure 2). Additionally, new utility-owned electric transformers will be installed. The landscaped areas will decrease by approximately 281,000 sq ft as a result of this Project.

Frito-Lay expects the Project to add 206 employees; 65 during the minimum shift, and 141 during the maximum shift. The Project will result in a reconfiguration of the on-site traffic flow, and both reconfiguration of existing trailer parking areas and addition of new trailer parking areas.

Daily truck loadings and deliveries before and after the Project are presented below (preliminary estimate):

	Average Daily		
Loads	**Current**	**Future**	**Change**
Outbound	68	86	18
Inbound	8	7	(1)

Once the new process lines are operational, products that were previously shipped to the facility will instead be manufactured in place. Therefore, inbound loads are expected to decrease. Truck deliveries and loadings are expected to occur 24 hours/day.

The Facility currently receives 15 railcar deliveries per week. This is expected to expand to 28 railcars per week as a result of the Project.

The Project is expected to result in an increase of utility usage at the site, as presented in Table 1.1.

Table 1.1: Pre- and Post- Project Utility Usage

Utility	Pre-Project Usage	Project Increase	Post-Project Usage
Water[1]	381 gpm	200 gpm	581 gpm
Electricity	3.0 MW	2 MW	5 MW
Sewer	393 gpm	250-300 gpm	643 – 693 gpm
Natural Gas	54,745 cfh	12,000 cfh	66,745 cfh
[1] Facility water is supplied through a combination of onsite wells and City of Modesto service.			

Stormwater is currently handled by overland flow into an at-grade retention basin which drains at the southwest corner of the property. This Project will add approximately 455,000 sq ft of new paved areas to the site. To manage stormwater runoff, Frito-Lay intends to expand the existing retention pond north in the area of the existing solar field (to be removed). Stormwater will still drain at the southwest corner of the property.

2.5 Schedule

Frito-Lay has developed a preliminary project schedule, presented in Table 1.

Table 1.2: Frito-Lay Transformation Project Schedule

Task	Start Date	End Date
Engineering and Procurement	Sept 2020	May 2022
Construction - Site Work	Mar 2021	May 2022
Construction of Warehouse	Jun 2021	May 2022
Construction of Wastewater System	Jul 2021	Apr 2022
Construction of the Manufacturing Building	May 2021	May 2022
Construction of the DTC Process Line	Jul 2021	May 2022
Startup of DTC Process Line	Jun 2022	Aug 2022
Construction of the FCP Process Line	Apr 2021	Aug 2021
Startup of FCP Process Line	Sep 2021	Oct 2022

3. AIR QUALITY ANALYSIS

Air quality within the Project area is regulated by the U.S. Environmental Protection Agency (EPA), the California Air Resources Board (CARB), and the San Joaquin Air Pollution Control District (SJVAPCD). Regional impacts on air quality result from emissions generated during short-term (construction) and long-term (operational) activities. SJVAPCD has established thresholds of significance for the following CAPs: volatile organic compounds (VOC), nitrogen oxides (NO_x), particulate matter (PM), carbon monoxide (CO), and sulfur dioxide (SO_2). The thresholds of significance address construction emissions, operational emissions resulting from permitted equipment and activities, and operational emissions resulting from non-permitted equipment and activities. This section describes the calculation methodology for CAPs and compares the results to the thresholds of significance.

3.1 Construction CAP Emissions

Construction phase CAP emissions at the Project site will primarily consist of emissions from off-road construction equipment and on-road construction vehicles during each phase of construction. Construction phase emission calculations are presented in Appendix A. Potential air emissions associated with the Project's construction phase activities were estimated using the California Emissions Estimator Model (CalEEMod®).[2] Construction phase emissions will be short-term and are anticipated to occur over a roughly 16-month period (see Table A.2).

Assumptions used in CalEEMod® simulation are presented in the following sub-sections. CalEEMod® output files are presented in Appendix B.1.

The primary air pollutants associated with construction emissions will include fugitive PM and diesel exhaust emissions of NO_x and PM. Exhaust emissions will be typically emitted by on-road vehicles and/or off-road equipment. Fugitive emissions result from PM dust suspended in the air by wind action and construction related activities. SO_x and VOC will also be emitted during construction, but to a lesser extent.

Emissions from Construction Equipment

Construction equipment emissions were estimated for off-road equipment engine use based on equipment lists and projected phase durations. The fugitive emissions resultant from off-road equipment usage were also included in this analysis.

Since most of the off-road construction equipment used for construction Projects is diesel-fueled, the CalEEMod® model assumes all the equipment operates on diesel fuel. There will be no starting or evaporative emissions associated with the construction equipment as these are considered *de minimis* for diesel-fueled equipment. CalEEMod® calculates the exhaust emissions based on default values for horsepower and load factor taken from the CARB OFFROAD2011 model.[3] CalEEMod® default equipment types and quantities were assumed for each construction phase.

The list of estimated construction equipment for each construction phase is presented in Table A.2.

[2] California Emissions Estimator Model Version 2016.3.2. Available at: www.caleemod.com. Accessed: August 2020.

[3] CAPCOA. 2017. California Emissions Estimator Model User's Guide. Appendix A. Page 32. Version 2016.3.2. November. Available at: http://www.caleemod.com. Accessed: November 2019.

CalEEMod® was also used to calculate fugitive dust associated with the demolition, site preparation, and grading phases. The quantity of material to be demolished as well as the estimated quantity of material removed during the site preparation and grading phases were provided by the Facility (Table A.3). Fugitive emissions from truck loading were based on the estimated volume of soil to be exported (43,400 cubic yards). Potential PM_{10} and $PM_{2.5}$ emissions from fugitive dust will be controlled by watering the construction site or implementing other equivalent stabilization methods in accordance with SJVAPCD requirements.[4] CalEEMod® defaults assume that the construction site is watered twice a day; a control measure estimated to reduce fugitive dust emissions by 55%.

Emissions from On-Road Trips

Construction activities can generate on-road vehicle exhaust (including evaporative emissions) and entrained road dust emissions from personal vehicles for worker/vendor commuting, and trucks for soil/materials hauling. These emissions were calculated in the CalEEMod® model based on the estimated number of trips (Table A.4) and vehicle miles traveled (VMT) along with emission factors from the EMFAC2014 model. The number of worker, vendor, and hauling trips were estimated using CalEEMod® defaults for all phases.

The mobile source emissions were calculated using trip rates and lengths, as well as emission factors from EMFAC2014 as outlined in the CalEEMod® user's guide.[5]

Details regarding on-road trips generated during the construction phase are presented in Table A.4.

Maximum Emissions from Project Construction

The maximum annual criteria air pollutant emissions estimated due to construction of the Project are summarized in Table 3.1. Detailed CalEEMod® outputs can be found in Appendix B.1. The estimated annual emissions for construction phase activities are less than the SJVAPCD's significance thresholds for construction for all criteria pollutants.

Table 3.1: Project Maximum Annual CAP Emissions from Construction

Calendar Year	Maximum Annual Emissions (tons/year)					
	ROG	**CO**	**SO_2**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
2021	1.19	4.87	0.02	7.55	1.11	0.57
2022	0.92	0.42	0.00	0.28	0.03	0.02
Maximum Overall	**1.19**	**4.87**	**0.02**	**7.55**	**1.11**	**0.57**
SJVAPCD Threshold[1]	**10**	**100**	**27**	**10**	**15**	**15**
Above Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes:

[1] Criteria pollutant significance thresholds for construction emissions obtained from SJVAPCD Air Quality Thresholds of Significance. Available at: http://www.valleyair.org/transportation/0714-GAMAQI-Criteria-Pollutant-Thresholds-of-Significance.pdf. Accessed: December 2020.

[4] Fugitive Dust Control at Construction Sites: New Requirements. Available at: https://www.valleyair.org/busind/comply/PM10/forms/RegVIIICAB.pdf. Accessed: December 2020.

[5] CAPCOA. 2017. California Emissions Estimator Model User's Guide. Appendix A. Page 37. Version 2016.3.2. November. Available at: http://www.caleemod.com. Accessed: December 2020.

3.2 Operational CAP Emissions

3.2.1 Operational CAP Emissions from Permitted Equipment and Activities

Within the broader category of operational emissions, SJVAPCD has separate emission thresholds for equipment and activities subject to SJVAPCD permits (i.e., permitted), and those which are not subject to SJVAPCD permits (i.e., non-permitted). Portions of the proposed Project will be subject to SJVAPCD permitting requirements under SJVAPCD Regulation II (Permits).

Frito-Lay submitted an application to SJVAPCD in September 2020 for Authorities to Construct (ATCs) for the following equipment:

- Fried Cheese Puff (FCP) process line
- Cornmeal receiving, storage, and handling system
- Dorito Tortilla Chip (DTC) process line
- Corn receiving, storage, and handling system

The facility's post-Project potential to emit was calculated based on equipment-specific emission factors and control efficiency of control equipment. Emission calculations are provided in Appendix C. The increase in facility emissions expected after Project implementation are compared to SJVAPCD thresholds below.

Table 3.2: Operational CAP Emissions from Permitted Equipment

Pollutant	Post-Project Potential to Emit (tons/year)					
	ROG	CO	SO_2	NO_x	PM_{10}	$PM_{2.5}$
Total	0.37	1.28	0.02	1.36	4.31	4.31
SJVAPCD Threshold[1]	**10**	**100**	**27**	**10**	**15**	**15**
Above Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes:

Criteria pollutant significance thresholds for operational emissions from permitted equipment obtained from SJVAPCD Air Quality Thresholds of Significance. Available at: http://www.valleyair.org/transportation/0714-GAMAQI-Criteria-Pollutant-Thresholds-of-Significance.pdf. Accessed: December 2020.

3.2.2 Operational CAP Emissions from Non-Permitted Equipment and Activities

As noted above, SJVAPCD has separate emission thresholds for permitted operational equipment and non-permitted operational equipment. For the purpose of calculating CAP emissions, the non-permitted operational equipment and activities will include Project-related emissions from area sources, non-permitted natural gas usage, and mobile sources (i.e., passenger cars, trucks, trains).

Area Source Emissions

Project-related area source emissions will include emissions from architectural coating, consumer products, and landscaping. These emissions were estimated in CalEEMod, using

default emission factors. These emissions, summarized in Table D.1, are dependent on the land use areas, which were provided by the facility and shown in Table A.1.

Emissions from Natural Gas Usage

The Project-related emissions from increased (non-permitted) natural gas usage expected after Project implementation were calculated outside of CalEEMod, using CalEEMod default emission factors for nonresidential land uses.[6] CAP emissions resulting from this category are presented in Table D.4.

Mobile Emissions

Passenger Cars

As a result of the Project, the facility expects to hire 206 employees. Therefore, the expected increase in the number of daily trips was estimated at twice that number, or 412 additional one-way trips per day. Emissions from Project-related passenger cars were calculated. Baseline (calendar year 2020) passenger car emissions were analyzed and compared to post-Project (calendar year 2022) emissions. The total passenger car emissions attributed to the Project were calculated by subtracting the baseline emissions from the Project emissions.

It was assumed that the average passenger car trip length is the distance that an employee will have to travel roundtrip from their home to the facility. This distance was estimated using CalEEMod defaults for home-work trips in urban Stanislaus County.[7]

In both scenarios, passenger car emissions were calculated using EMFAC2017 (EMFAC) default emission factors for the passenger car (LDA), light-duty truck (LDT), and medium-duty vehicle (MDV) vehicle classes. The emission factors in the post-Project scenario are lower than in the baseline scenario as a result of car regulations becoming increasingly stringent over time. However, since the number of passenger car trips increases as a result of the increased facility capacity, the estimated CAP emissions are larger in the post-Project scenario then they are in the baseline scenario, as shown in Table D.12. EMFAC output files are presented in Appendix B.2, and additional calculation details can be found in Appendix D.

Trucks

Project-related emissions from trucks were calculated using the same general methodology as passenger vehicles. First, baseline (calendar year 2020) truck emissions were analyzed, then post-Project (calendar year 2022) emissions were evaluated. The total truck emissions attributed to this Project were calculated by subtracting the baseline emissions from the Project emissions.

The average truck trip length was estimated using the following methodology:

1. The distance from the facility to each of six Frito-Lay distribution centers (three in Northern California, three in Southern California) was mapped.

[6] California Emissions Estimator Model User's Guide. Appendix D. Page 340. Version 2016.3.2. Available: http://www.aqmd.gov/docs/default-source/caleemod/05_appendix-d2016-3-2.pdf?sfvrsn=4. Accessed: December 2020.

[7] California Emissions Estimator Model User's Guide. Appendix D. Page 87. Version 2016.3.2. Available: http://www.aqmd.gov/docs/default-source/caleemod/05_appendix-d2016-3-2.pdf?sfvrsn=4. Accessed: December 2020.

2. The average trip length for each region was weighted based on the population of the city in which each distribution center is located.
3. To calculate the overall truck trip length, the average trip length to each region was once again weighted, this time assuming that 65% of the trucks are sent to Northern California, and 35% of the trucks are sent to Southern California.

Calculation details can be found in Table D.6. The increase in number of truck trips was calculated based on the facility's current production levels and load quantities. The capacity increase of both the FCP and DTC process lines was used to estimate the number of delivery loads and ultimately truck trips required as a result of the Project. While the amount of outbound truck trips from the facility will increase after Project implementation, fewer inbound truck trips to the facility will be required after Project implementation.

The fleet mix also changes between the baseline and post-Project scenarios. The facility currently operates 38 natural gas fueled trucks, and 12 diesel trucks. With the Project, the facility expects to operate 38 natural gas fueled trucks and 12 electric trucks. This change in the heavy-duty fleet mix reflects the facility's aggressive pursuit of alternative vehicle technologies. EMFAC was used to generate the average truck emission factors for each scenario. For the baseline scenario, EMFAC was run for the heavy-heavy duty truck (HHDT) vehicle class in 2020. Natural gas and diesel HHDT emission factors were averaged based on the expected fleet mix. Those emission factors were then multiplied by the average truck trip length and number of trips, to estimate CAP emissions. For the Project scenario, only natural gas HHDT emission factors were obtained from EMFAC, since electric trucks have zero tailpipe emissions. As before, the emission factors were weighted based on fleet mix.

While truck usage is expected to increase as a result of the Project, the change in the fleet composition from a mix of natural gas/diesel to natural gas/electric trucks and more stringent regulations result in lower emissions from trucks for some criteria pollutants, such as NO_X. A summary of truck emissions in each scenario can be found in Table D.12. Additional calculation details are presented in Appendix D.

Trains

As with cars and trucks, in order to estimate emissions from trains, the average trip length was estimated. The rail route was mapped in GIS based on its known route. This total distance was estimated at 213 miles (Table D.13). A large portion of that distance is outside of SJVAPCD jurisdiction. For purposes of this analysis, 30% of the total emissions were estimated to occur within SJVAPCD, which is proportional to the percent of the rail distance within SJVAPCD boundaries.

Locomotive-specific emission factors were then identified. Emission factors for volatile organic compounds, carbon monoxide, and sulfur dioxide were obtained or calculated using US EPA Guidance.[8] California has more stringent emission standards than other states, so emission factors for particulate matter and NO_X were calculated separately, using CARB Guidance.[9] Emission factors were converted from grams per gallon to grams per ton-mile

[8] Emission Factors for Locomotives. Available: https://nepis.epa.gov/Exe/ZyPDF.cgi/P100500B.PDF?Dockey=P100500B.PDF. Accessed: August 2020.

[9] 2016 Line Haul Locomotive Model and Update. Available: https://ww3.arb.ca.gov/msei/ordiesel/locolinehaul2017ei.docx. Accessed: August 2020.

using the total ton-miles that Union Pacific freight trains travelled in 2019 and the total gallons of diesel fuel consumed by Union Pacific freight trains in 2019.[10]

Locomotive emissions were then calculated by multiplying these emission factors by the miles that the trains will travel within SJVAPCD and the weight of the trains travelling to the facility each year. The total train weight included the weight of the locomotive itself, as well as the weight of the empty railcars and loaded freight containers. Only the portion of the train weight that could be attributed to Frito-Lay was included in these calculations. This weight was calculated based on the number of railcars that deliver freight to Frito-Lay each week, and the estimated amount of corn, cornmeal, and oil used annually by the facility. The details of these calculations are presented in Table D.15.

As mentioned above, the locomotives travel throughout several other California Air Districts. It was determined that emissions will also be released within the Sacramento, Yolo Solano, Placer, and Northern Sierra Air Districts. While only emissions occurring within SJVAPCD were summed within the Project totals, emissions released in other districts were compared to those Districts' specific CEQA significance thresholds. All emissions totals were below applicable thresholds, as shown in Table D.18.

Total Operational CAP Emissions from Non-Permitted Sources and Activities

As detailed above, the incremental CAP emissions resulting from Project implementation include area source emissions, emissions from natural gas usage, and mobile source emissions. Contributions from each of these sources are summarized and compared to SJVAPCD thresholds in Table 3.3:

Table 3.3: Operational CAP Emissions from Non-Permitted Equipment

	Incremental Project Emissions (tons/year)					
	ROG	**CO**	**SO_2**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
Area Sources	0.8	0.0	--	0.0	0.0	0.0
Natural Gas Usage	0.6	4.4	0.0	5.3	0.4	0.4
Mobile Emissions	0.1	12.0	0.0	-0.8	0.0	0.0
Total	1.5	16.4	0.02	4.5	0.4	0.4
SJVAPCD Threshold[1]	10	100	27	10	15	15
Above Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes:

Criteria pollutant significance thresholds for operational emissions from non-permitted equipment obtained from SJVAPCD Air Quality Thresholds of Significance. Available at: http://www.valleyair.org/transportation/0714-GAMAQI-Criteria-Pollutant-Thresholds-of-Significance.pdf. Accessed: December 2020.

[10] 2019 Union Pacific Class I Railroad Annual Report. Available: https://www.up.com/cs/groups/public/@uprr/@investor/documents/investordocuments/pdf_up_r1_2019.pdf. Accessed: August 2020.

3.3 Air Quality Impact Analysis

Per Appendix G of the CEQA Guidelines, the air quality impacts of a project would be significant if the project would:

a. Conflict with or obstruct implementation of the applicable air quality plan;

b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient quality standard;

d. Expose sensitive receptors to substantial pollutant concentrations, or;

e. Create objectionable odors affecting a substantial number of people.[11]

As shown in this report, the CAP emissions from construction, permitted operation, and non-permitted operation will all be under the respective SJVAPCD thresholds of significance. All Project impacts will be less than significant in the surrounding air quality districts as well. Therefore, this Project should have a less-than-significant impact on air quality.

Per the US EPA Green Book, portions of Stanislaus County are currently in non-attainment for ozone and particulate matter.[12] However, the increases in particulate matter emissions, as well as those of ozone precursors such as NO_x and VOCs, will be within the applicable SJVAPCD Thresholds of Significance. Thus, the potential increase in emissions of those pollutants will be considered less than significant.

The SJVAPCD recommends that an ambient air quality analysis be performed if on-site emission increases from construction, permitted operation, or non-permitted operation exceed 100 pounds per day for any pollutant. As shown in the Table 3.4, the expected emission increases for the Project will be less than 100 pounds per day for each pollutant for each category of emissions. Therefore, an air dispersion modeling analysis will not be required.

[11] CEQA Appendix G: Environmental Checklist Form. Available: https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/ab52/final-approved-appendix-G.pdf. Accessed: December 2020.

[12] California Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants. Available: https://www3.epa.gov/airquality/greenbook/anayo_ca.html. Accessed: December 2020.

Table 3.4: Ambient Air Quality Analysis CAP Threshold Comparison

	Post-Project Potential to Emit (lb/day)					
	ROG	**CO**	**SO_2**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
Construction	6.5	26.7	0.1	41.4	6.1	3.1
Permitted Operation	2.0	7.0	0.1	7.4	23.6	23.6
Non-Permitted Operation	8.3	89.8	0.1	24.5	2.3	2.2
Maximum	8.3	89.8	0.1	41.4	23.6	23.6
SJVAPCD Threshold[1]	100	100	100	100	100	100
Above Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes:

[1] Thresholds for ambient air quality screening requirements from SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts. Available: http://www.valleyair.org/transportation/GAMAQI_12-26-19.pdf. Accessed: December 2020.

The expansion of the existing snack food manufacturing facility under the Project will not result in objectionable odors. Odors during the construction phase, if any, will also be less than significant. Construction equipment is typically fueled by diesel, which could lead to odors. However, diesel-fueled construction equipment is required by regulation to use low sulfur content fuel in accordance with SJVAPCD Rule 4702.13 Compliance with this rule and use of low sulfur fuel will minimize potential odors. Additionally, the facility is located in an industrial-zoned area. The nearest sensitive receptor is a residence located approximately 2,000 feet from the Project site, and therefore is not expected to be impacted by Project activities. Diesel trucks that will be operated onsite as part of construction activities will not be allowed to idle longer than five minutes in any one location, in accordance with the CARB idling Airborne Toxics Control Measure (13 CCR §2485).14 Therefore, construction equipment and haul trucks are not expected to generate diesel exhaust odor greater than typically present at the Facility. Given the intermittent and temporary nature of construction activities and the distance to sensitive receptors, any potential odors will not be expected to impact offsite receptors.

[13] Rule 4702, Internal Combustion Engines. Available at: https://www.valleyair.org/rules/currntrules/R4702_Clean.pdf. Accessed: August 2020.

[14] 13 CCR §2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling. Available at: https://www.arb.ca.gov/msprog/truck-idling/13ccr2485_09022016.pdf. Accessed: August 2020.

4. GREENHOUSE GAS ANALYSIS

4.1 Construction Emissions

Greenhouse gas (GHG) emissions were calculated using CalEEMod as described in Section 3.1. The methodology was the same for GHG emissions as for criteria air pollutants. CalEEMod output files are presented in Appendix B.1. Table 4.1 presents a summary of GHG emissions from construction. Additional calculation details are presented in Appendix A.

Table 4.1: Project Maximum Annual GHG Emissions from Construction

Calendar Year	Maximum Annual Emissions (MT/year)			
	Total CO_2	CH_4	N_2O	CO_2e
2021	1,394	0.22	0.00	1,400
2022	64.37	0.02	0.00	64.74
Maximum Overall	**1,394**	**0.22**	**0.00**	**1,400**

4.2 Operational Emissions

4.2.1 Operational GHG Emissions from Permitted Equipment and Activities

As described in Section 3, Frito-Lay is expanding its Modesto facility to include additional process lines, and associated receiving, storage, and handling equipment. Greenhouse gas emissions are expected from one oven on the DTC process line. These emissions are accounted for in Section 4.2.2 as GHG emissions resulting from the increase in utility and natural gas usage.

4.2.2 Operational GHG Emissions from Non-Permitted Equipment and Activities

For the purpose of calculating GHG emissions, the non-permitted operational equipment and activities include emissions from area sources, electricity usage, natural gas usage, mobile sources (passenger cars, trucks, trains), water usage, and solid waste disposal.

Area Source Emissions

Area source GHG emissions were estimated in CalEEMod using default emission factors, similar to CAP emissions. These GHG emissions, summarized in Table D.1, are dependent on the land use areas, which were provided by the facility and presented in Table A.1.

Emissions from Electricity Usage

The emissions that will result from Project-related electricity consumption were estimated outside of CalEEMod to account for requirements in Senate Bill 100, which requires ever increasing percentages of renewable energy over time.[15] While Modesto Irrigation District is the electricity provider for Frito-Lay, power content labels were not available for recent calendar years. As such, nearby PG&E power content labels were obtained for three previous years (i.e., 2016, 2017, and 2018) and used to calculate compliant carbon dioxide intensity factors instead.[16] These power content labels provide the percentage of PG&E's total energy

[15] CA Senate Bill 100. Available: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB100. Accessed: July 2020.

[16] PG&E Power Content Labels. Available: https://www.pge.com/pge_global/local/assets/data/en-us/your-account/your-bill/understand-your-bill/bill-inserts/2017/november/power-content.pdf,

portfolio sourced from renewable and non-renewable sources. Using these power content labels as a reference, carbon dioxide intensity factors for PG&E's energy portfolio were then back-calculated to obtain a baseline intensity factor, which accounts for only non-renewable sources. Per Senate Bill 100, California utility companies must use at least 33% renewable sources in 2020, and 50% in 2026. The facility plans to begin operation in 2022, so by linearly interpolating between those points, it was determined that 38.7% of PG&E's electricity will come from renewable sources by 2022 in order to meet the requirements of Senate Bill 100. The final carbon dioxide intensity factor was calculated by taking that baseline factor, which assumed no renewable energy, and reducing it in accordance with these standards. Detailed calculations can be found in Table D.2. This adjusted carbon dioxide intensity factor was used in all CalEEMod runs; therefore, all GHG emissions were calculated using CalEEMod per Senate Bill 100 requirements.

To calculate the potential GHG emissions from Project-related electricity usage, the annual electricity usage was multiplied by this emission intensity factor. CH_4 and N_2O emissions were calculated using CalEEMod defaults for nonresidential land uses.[17] CO_2e emissions were calculated by multiplying the CO_2, CH_4, and N_2O emissions by their respective global warming potentials, and summing the result. Results are presented in Table D.3.

Emissions from Natural Gas Usage

GHG emissions from natural gas usage were calculated in the same manner as CAP emissions. Refer to Section 3.2.2 for details, and Table D.4 for emission quantification.

Mobile Emissions

Passenger Cars

Project-related GHG emissions from passenger cars were calculated in the same manner as CAP emissions, except where noted below. Refer to Section 3.2.2 and Appendix D for details. Note that while EMFAC was used to obtain the emission factors, the emission factors were adjusted outside of EMFAC in order to account for the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule.[18] This rule relaxed motor vehicle emission requirements in California, and thus emission factors had to be increased outside of EMFAC.

Trucks

Project-related GHG emissions from trucks were calculated in the same manner as and using the same emission factor sources as the CAP emissions. See Section 3.2.2 for details. A summary of truck emissions is presented in Table D.12.

Trains

The methodology for calculating Project-related GHG emissions from trains was the same as for CAP emissions. See Section 3.2.2. for details. However, the emission factor sources were

https://www.pge.com/pge_global/common/pdfs/your-account/your-bill/understand-your-bill/bill-inserts/2018/10-18_PowerContent.pdf, and https://www.pge.com/pge_global/common/pdfs/your-account/your-bill/understand-your-bill/bill-inserts/2019/1019-Power-Content-Label.pdf. Accessed: December 2020.

[17] California Emissions Estimator Model User's Guide. Appendix D. Page 4. Version 2016.3.2. Available: http://www.aqmd.gov/docs/default-source/caleemod/05_appendix-d2016-3-2.pdf?sfvrsn=4. Accessed: December 2020.

[18] EMFAC Off-Model Adjustment Factors for Carbon Dioxide Emissions to Account for the SAFE Vehicles Rule Part One and the Final SAFE Rule. Available: https://ww3.arb.ca.gov/msei/emfac_off_model_co2_adjustment_factors_06262020-final.pdf. Accessed: December 2020.

different for GHGs. The CO_2 emission factor was calculated using methodology outlined in EPA Guidance: Emission Factors for Locomotives.[19] The CH_4 and N_2O emission factors were taken from Table 5 of EPA Guidance: Emission Factors for Greenhouse Gas Inventories.[20] These emission factors are specific to diesel-fueled locomotives. Emission factors were converted into units of gram per ton-mile using Union Pacific locomotive data, as discussed in Section 3.2.2. Train GHG emissions can be found in Table D.15.

GHG emissions were divided up between the different air districts that the trains pass through on the way to the facility. All emissions are below the applicable thresholds in other districts.

Emissions from Water Usage

Emissions that will result from the increased water usage at the facility were calculated in CalEEMod using default emission factors. Per Table 1.1 in the Project Description, the Project is expected to increase the water needs of the facility by 200 gallons per minute. Emissions from increases in water usage are presented in Table D.22.

Emissions from Solid Waste Disposal

Emissions that will result from the increased waste disposal at the facility were also calculated in CalEEMod using default emission factors. The amount of non-hazardous waste generated in 2020 was obtained from Frito-Lay waste logs. To estimate waste amounts after Project implementation, this value was scaled up based on the expected increased facility capacity. The incremental amount of waste disposed is the difference between the future and present waste totals. As such, the facility is expected to generate an additional 75 tons of non-hazardous waste per year as a result of this Project. These emissions are shown in Table D.23.

Total Operational GHG Emissions from Non-Permitted Sources and Activities

As detailed above, the incremental GHG emissions resulting from Project implementation include emissions from area sources, electricity usage, natural gas usage, mobile sources (passenger cars, trucks, trains), water usage, and solid waste disposal. Contributions from each of these sources are presented in Table B.25 and summarized below.

[19] Emission Factors for Locomotives. Available: https://nepis.epa.gov/Exe/ZyPDF.cgi/P100500B.PDF?Dockey=P100500B.PDF. Accessed: August 2020.

[20] Emission Factors for Greenhouse Gas Inventories. Available: https://www.epa.gov/sites/production/files/2015-07/documents/emission-factors_2014.pdf. Accessed: December 2020.

Table 4.2: Operational GHG Emissions from Non-Permitted Equipment

	Incremental Project Emissions (MT/year)			
	Total CO_2	**CH_4**	**N_2O**	**CO_2e**
Area Sources	0.0	0.0	--	0.0
Electricity Usage	1,771	0.2	0.049	1,791
Natural Gas Usage	5,722	0.1	0.1	5,756
Mobile Emissions	1,669	2.4	0.237	1,801
Water Usage	91	3.4	0.1	201
Solid Waste Disposal	15	0.9	--	38
Totals	**9,268**	**7.1**	**0.5**	**9,587**

4.3 Greenhouse Gas Impact Analysis

CEQA Guidelines on GHG Emissions

Per Appendix G of the CEQA Guidelines, the air quality impacts of a project would be significant if the project would:

a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, or;

b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.[21]

SJVAPCD Guidance

In December 2009, the SJVAPCD adopted a Climate Change Action Plan.[22] Per this plan, Projects that are not exempt from the requirements of CEQA can be determined to have a less than significant individual and cumulative impact for GHG emissions in three ways.

First, the facility can demonstrate Project compliance with the District's approved Best Performance Standards (BPS). The District has compiled a list of BPS for stationary sources. If the Project can show that the stationary sources in question are following guidance as outlined in the corresponding BPS, then that source will have a less than significant impact.

Next, the facility can prove that Project elements are complying with approved GHG emission reduction plans or GHG mitigation programs. Such plans must be specified in law and supported by a CEQA compliant environmental review document adopted by the lead agency.

[21] CEQA Appendix G: Environmental Checklist Form. Available: https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/ab52/final-approved-appendix-G.pdf. Accessed: December 2020.

[22] SJVAPCD Final Staff Report – Addressing Greenhouse Gas Emissions Impacts Under CEQA. Available: http://www.valleyair.org/Programs/CCAP/12-17-09/1%20CCAP%20-%20FINAL%20CEQA%20GHG%20Staff%20Report%20-%20Dec%2017%202009.pdf. Accessed: December 2020.

Finally, the Project can quantify its GHG emissions and demonstrate that these project-specific emissions would be reduced or mitigated by at least 29% compared to a Business as Usual (BAU) approach. If the Project is achieving at least a 29% emission reduction from the BAU case, then the Project would be determined to have a less than significant impact for GHG.

Project Approach to Significance

For purposes of demonstrating that the Project will not have a significant impact, a hybrid approach was used. This section demonstrates compliance with applicable BPS and proves consistency with the several key GHG emission reduction plans and legislation listed in Section 4.3.1.

4.3.1 Regulatory Framework

Federal

Clean Air Act

In April 2007, in *Massachusetts v. EPA*, the U.S. Supreme Court directed the Administrator of the EPA to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the EPA Administrator was directed to follow the language of Section 202(a) of the Clean Air Act (CAA). In December 2009, the Administrator signed a final rule with two distinct findings regarding GHGs under Section 202(a) of the CAA:

- Elevated concentrations of GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the "endangerment finding."
- The combined emissions of GHGs—CO_2, CH_4, N_2O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is referred to as the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the CAA.

State

Executive Order S-03-05

In 2005, Governor Schwarzenegger issued Executive Order (EO) S-3-05, which identifies state-wide GHG emission reduction targets to achieve long-term climate stabilization as follows:

- Reduce GHG emissions to 1990 levels by 2020; and
- Reduce GHG emissions to 80 percent below 1990 levels by 2050.

In response to EO S-3-05, California Environmental Protection Agency (CalEPA) created the Climate Action Team (CAT), which in March 2006 published the Climate Action Team Report (the "2006 CAT Report").[23] The 2006 CAT Report identified a recommended list of strategies that the State could pursue to reduce GHG emissions. These are strategies that could be

[23] California Environmental Protection Agency Climate Action Team Report to Governor Schwarzenegger and the Legislature. Available: http://s3-us-west-2.amazonaws.com/ucldc-nuxeo-ref-media/0bdec21c-ca2b-4f4d-9e11-35935ac4cf5f. Accessed: December 2020.

implemented by various State agencies to ensure that the emission reduction targets in EO S-3-05 are met and can be met with existing authority of the State agencies. The strategies include, but are not limited to, the reduction of passenger and light-duty truck emissions, the reduction of idling times for diesel trucks, an overhaul of shipping technology/infrastructure, increased use of alternative fuels, increased recycling, and landfill methane capture.

AB 32, the Global Warming Solutions Act

Assembly Bill (AB) 32 (Nunez, 2006), the California Global Warming Solutions Act of 2006, was enacted after considerable study and expert testimony before the Legislature. The heart of AB 32 is the requirement that state-wide GHG emissions be reduced to 1990 levels by 2020. In order to achieve this reduction mandate, AB 32 requires California Air Resources Board to adopt rules and regulations in an open public process that achieve the maximum technologically feasible and cost-effective GHG reductions.

In response to these requirements, CARB adopted the *Climate Change Scoping Plan: A Framework for Change* (2008 Scoping Plan) in accordance with Health & Safety Code Section 38561. During the development of the 2008 Scoping Plan, CARB created a planning framework that is comprised of eight emissions sectors: (1) transportation; (2) electricity; (3) commercial and residential; (4) industry; (5) recycling and waste; (6) high global warming potential (GWP) gases; (7) agriculture; and, (8) forest net emissions. The 2008 Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions from the eight emissions sectors to 1990 levels by 2020.

In November 2017, CARB published California's 2017 Climate Change Scoping Plan (2017 Scoping Plan), which was subsequently adopted by CARB's Board in December 2017.[24] The 2017 Scoping Plan identifies CARB's strategy for achieving the State's 2030 GHG target.

Key elements of CARB's GHG reduction plan that are relevant to this analysis include:

- Achieving a mix of 50 percent for energy generation from renewable sources;
- Establishing targets for transportation-related GHG emissions, particularly by increasing zero emission vehicle fleets and regulating heavy-heavy duty truck emissions; and
- Implementing an extended, more stringent Cap-and-Trade Program.

Assembly Bill 1493

AB 1493 required CARB to adopt regulations to reduce GHG emissions from non-commercial passenger vehicles and light-duty trucks for model years 2009–2016. CARB obtained a waiver from the USEPA that allows for implementation of these regulations notwithstanding possible federal pre-emption concerns.

Executive Order S-01-07

EO S-1-07, as issued by Governor Schwarzenegger, called for a 10 percent or greater reduction in the average fuel carbon intensity for transportation fuels in California regulated by CARB by 2020. In response, CARB approved the Low Carbon Fuel Standard (LCFS) regulations in 2009, which became fully effective in April 2010. Thereafter, a lawsuit was filed challenging CARB's adoption of the regulations; and, in 2013, a court order was issued

[24] California's 2017 Climate Change Scoping Plan. Available: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. Accessed: December 2020.

compelling CARB to remedy substantive and procedural defects of the LCFS adoption process under CEQA.[25] However, the court allowed implementation of the LCFS to continue pending correction of the identified defects. In September 2015, CARB re-adopted the LCFS regulations. The LCFS would reduce GHG emissions by reducing the carbon intensity of transportation fuels used in California by at least 10% by 2020 and, as most recently amended in 2018, by at least 20% by 2030.

Regional

SJVAPCD Guidance

SJVAPCD manages air quality in the San Joaquin Valley Air Basin (SJVAB). The primary role of SJVAPCD is to develop plans, rules, and regulations as well as implement control measures in the SJVAB to control air pollution. SJVAPCD adopted a Climate Change Action Plan (CCAP) to identify strategies to reduce GHG emissions in the SJVAB and evaluate Project significance. More details on this legislation can be found in Section 4.3.

Local

Stanislaus County Air Quality Conformity Analysis

The Stanislaus Council of Governments (StanCOG) is the designated Metropolitan Planning Organization (MPO) for Stanislaus County. It is responsible for regional transportation planning. As such, StanCOG also prepares conformity analyses. The 2014 Air Quality Conformity Analysis describes ways that Projects within the County can comply. This analysis suggests that transportation control measures be followed in order to ensure compliance with the Clean Air Act, and that County-approved emission estimation models be used in Project calculations.

4.3.2 Project Inventory in Context

BPS

There is only one Project-related stationary source that will have an applicable BPS. The oven on the DTC process line will be subject to SJVAPCD's Conveyorized Tortilla Oven BPS.[26] Per the BPS, the oven shall meet the following criteria:

a. The tortilla oven shall be equipped with a forced draft combustion air fan with air to fuel ratio control for the burner(s), and

b. The oven stack shall be equipped with a system which provides continuous automatic control of the draft in the oven, and

c. Electric motors exceeding 10 horsepower which drive driving combustion air fans shall have an efficiency meeting the standards of the National Electrical Manufacturer's Association (NEMA) for "premium efficiency" motors.

The facility will ensure that the tortilla chip oven placed on the DTC process line will meet the above criteria and therefore will comply with BPS. No other stationary sources at the facility have applicable BPS.

[25] *POET, LLC v. CARB* (2013) 217 Cal.App.4th 1214.

[26] SJVAPCD Conveyorized Tortilla Oven BPS. Available: https://www.valleyair.org/Programs/CCAP/bps/Approved_BPS_Ovens_TortillaOven.pdf. Accessed: December 2020.

Consistency Analysis

By complying with several key elements of the legislation outlined above, this Project demonstrates that its overall GHG emission impact will be less than significant.

As shown in Table 4.2, increased natural gas usage is a key driver of emissions as a result of the Project. However, per CARB's Climate Change Scoping Plan, these potential emissions will be covered under CARB's Cap-and-Trade program. As such, the natural gas usage at the facility is already accounted for and regulated in accordance with AB 32. Transportation fuels are also covered under Cap-and-Trade, so the fuels used to power the facility's current truck fleet are also regulated in accordance with CARB's Scoping Plan.

The facility's plan to reduce their mobile emissions demonstrates compliance with the Clean Air Act, Executive Order S-03-05, Executive Order S-01-07, and CARB's Climate Change Scoping Plan. Reducing impacts from mobile sources is a key factor in these regulations. In particular, these regulations recommend decarbonizing the transportation sector, increasing usage of alternative fuels, and regulating heavy-duty truck fleets. In accordance with all of these items, Frito-Lay is aggressively pursuing alternative vehicle technologies for its heavy-duty fleet. This is reflected in both their current HHDT fleet, which is comprised of a large percentage of natural gas trucks, and their future HHDT fleet, which will consist of only natural gas and battery electric trucks. The Project site plan includes electric vehicle (EV) parking spaces for employees as well as charging states for the facility's Tesla Tractors. By utilizing a cleaner truck fleet for loads and deliveries, the facility will ensure compliance with federal and state regulations that focus on mobile emissions, and emissions from heavy-duty trucks in particular.

The facility is also complying with state and local legislation by submitting a quantitative greenhouse gas inventory for this Project. This inventory has been compiled following guidance from AB 1493, EO S-01-07, and Stanislaus County Air Quality Conformity Analysis. Emissions from construction and operation were quantified using emission factors and methodology obtained from CalEEMod and EMFAC wherever possible. These California-specific models account for regulatory requirements in their assumptions. For example, requirements resulting from AB 1493, saying that non-commercial passenger vehicles are subject to stricter emission standards, and EO S-01-07, which mandates a reduction in the carbon intensity of transportation fuels, are already incorporated into EMFAC. Note that in both cases, the most recently approved model versions were used in all calculations. Therefore, by using state-approved models to quantify emissions, the Project inventory has been calculated while taking legislative action into consideration.

Impact Determination

Overall, the individual and cumulative GHG impacts of this Project are expected to be less than significant. While the Project could represent a small increase in GHG emissions when compared to the existing conditions on the site, the Project will not conflict with any state-wide emission reduction targets. Further, there are no clear Project alternatives which would be more effective in reducing the Project's impact.

This Project will comply with all applicable BPS and demonstrate consistency with the regulations outlined in Section 4.3.1. Therefore, per SJVAPCD's CEQA guidance, the impacts from this Project will be less than significant.

5. DETERMINATION

5.1 Summary

The proposed Project was analyzed and found to have **less than significant** impacts in the areas of air quality and greenhouse gases. CAP emissions are under below SJVAPCD thresholds for construction, permitted operation, and non-permitted operation. Additionally, GHG emissions are consistent with federal, state, and local legislation, which indicates compliance per SJVAPCD Guidelines. No further analysis of these areas is required.

6. PREPARERS

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APPENDIX A
CONSTRUCTION TABLES

Table A.1. Project Land Use
Frito-Lay, Inc.
Modesto, California

Proposed Project[1]			CalEEMod Analysis[2]				
Land Use	**Land Use Unit Amount**	**Size Metric**	**Land Use Category**	**Land Use Subtype**	**Land Use Unit Amount**	**Size Metric**	**Acreage**
Manufacturing and Production Operation	127,000	sqft	Industrial	Manufacturing	127	1000 sqft	2.92
Warehouse Operation	39,000	sqft	Industrial	Refrigerated Warehouse - Rail	39	1000 sqft	0.9
Asphalt Paving	92,000	sy	Parking	Other Asphalt Surfaces	828	1000 sqft	19.01
Concrete Paving	10,000	sy	Parking	Other Non-Asphalt Surfaces	90	1000 sqft	2.07

Notes:

[1] Project conditions based on Project Description and data request response.

[2] Land uses as defined in CalEEMod v2016.3.2.

Abbreviations:

CalEEMod - California Emissions Estimator Model

sqft - square feet

sy - square yards

Table A.2. Project Construction Assumptions
Frito-Lay, Inc.
Modesto, California

Construction Phase Name[1]	Phase Type	Phase Start Date	Phase End Date	Off-Road Equipment Type[2]	Equipment Unit Amount[2]
Demolition	Demolition	2/8/2021	5/7/2021	Concrete/Industrial Saws	1
				Excavators	3
				Rubber Tired Dozers	2
Site Preparation	Site Preparation	2/8/2021	5/14/2021	Rubber Tired Dozers	3
				Tractors/Loaders/Backhoes	4
Grading	Grading	2/8/2021	5/14/2021	Excavators	2
				Graders	1
				Rubber Tired Dozers	1
				Scrapers	2
				Tractors/Loaders/Backhoes	2
Building Construction	Building Construction	5/18/2021	11/9/2021	Cranes	1
				Forklifts	3
				Generator Sets	1
				Tractors/Loaders/Backhoes	3
				Welders	1
Architectural Coating	Architectural Coating	12/1/2021	2/28/2022	Air Compressors	1
Paving	Paving	4/1/2022	6/1/2022	Pavers	2
				Paving Equipment	2
				Rollers	2

Notes:

[1] Project specific construction schedule.

[2] Equipment type and amount based on CalEEMod v2016.3.2 defaults.

Abbreviation:

CalEEMod - California Emissions Estimator Model

Table A.3. Material Moved During Construction
Frito-Lay, Inc.
Modesto, California

Project Construction Phase[1]	Material Imported	Material Exported	Units
Grading	14,200	43,400	cy

Project Construction Phase[1]	Demolished Material	
Demolition	9,756	tons of debris

Notes:

[1] Based on Project data request response.

Abbrevations:

cy - cubic yards

sqft - square feet

Table A.4. Project Construction Trip Information
Frito-Lay, Inc.
Modesto, California

Phase	Worker Trips[1] (trips/day)	Vendor Trips[1] (trips/day)	Hauling Trips[1] (trips/phase)
Demolition	15	0	965
Site Preparation	18	0	0
Grading	20	0	7,200
Paving	15	0	0
Building Construction	455	178	0
Architectural Coating	91	0	0

Notes:
1. Trip rates calculated based on CalEEMod v2016.3.2 defaults.

Abbreviations:
CalEEMod - California Emissions Estimator Model

Table A.5. SJVAPCD Air Quality Significance Thresholds
Frito-Lay, Inc.
Modesto, California

Pollutant	Construction Emissions (tons/year)[1]	Operational Emissions (tons/year)[1]	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
Reactive Organic Gases (ROG)	10	10	10
Oxides of Nitrogen (NO_x)	10	10	10
Carbon Monoxide (CO)	100	100	100
Oxides of Sulfur (SO_x)	27	27	27
Respirable Particulate Matter (PM_{10})	15	15	15
Fine Particulate Matter ($PM_{2.5}$)	15	15	15

Notes:

[1] SJVAPCD Air Quality Thresholds of Significance - Criteria Pollutants. Available at: http://www.valleyair.org/transportation/0714-GAMAQI-Criteria-Pollutant-Thresholds-of-Significance.pdf.

Abbreviations:

CAAQS - California Ambient Air Quality Standards

CCR - California Code of Regulations

CO - carbon monoxide

NAAQS - National Ambient Air Quality Standards

NO_x - oxides of nitrogen

PM_{10} - particulate matter less than 10 microns in diameter

$PM_{2.5}$ - particulate matter less than 2.5 microns in diameter

ROG - reactive organic gases

SJVAPCD - San Joaquin Valley Air Pollution Control District

SO_x - oxides of sulfur

Table A.6. Project Maximum Annual CAP Emissions
Frito-Lay, Inc.
Modesto, California

Calendar Year	Maximum Annual Emissions (tons/year)					
	ROG	CO	SO_2	NO_X	Total PM_{10}	Total $PM_{2.5}$
2021	1.19	4.87	0.02	7.55	1.11	0.57
2022	0.92	0.42	0.00	0.28	0.03	0.02
Maximum Overall	**1.19**	**4.87**	**0.02**	**7.55**	**1.11**	**0.57**
SJVAPCD Threshold[1]	**10**	**100**	**27**	**10**	**15**	**15**
Above Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes:

[1] SJVAPCD Air Quality Thresholds of Significance - Criteria Pollutants. Available at: http://www.valleyair.org/transportation/0714-GAMAQI-Criteria-Pollutant-Thresholds-of-Significance.pdf. Accessed: August 2020.

Abbreviations:

CAP - criteria air pollutant

CO - carbon monoxide

NO_x - oxides of nitrogen

PM_{10} - particulate matter less than 10 microns in diameter

$PM_{2.5}$ - particulate matter less than 2.5 microns in diameter

ROG - reactive organic gases

SJVAPCD - San Joaquin Valley Air Pollution Control District

SO_x - oxides of sulfur

Table A.7. Project Maximum Annual GHG Emissions
Frito-Lay, Inc.
Modesto, California

	Maximum Annual Emissions (MT/year)			
Calendar Year	**Total CO_2**	**CH_4**	**N_2O**	**CO_2e**
2021	1,394	0.22	0.00	1,400
2022	64.37	0.02	0.00	64.74
Maximum Overall	**1,394**	**0.22**	**0.00**	**1,400**

Abbreviations:
CH_4 - methane
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
GHG - greenhouse gas
MT - metric ton
N_2O - nitrous oxide
SJVAPCD - San Joaquin Valley Air Pollution Control District

APPENDIX B
CALEEMOD AND EMFAC OUTPUT FILES

APPENDIX B.1
CALEEMOD OUTPUT FILES

Modesto Construction Emissions - Stanislaus County, Annual

Modesto Construction Emissions

Stanislaus County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	127.00	1000sqft	2.92	127,000.00	0
Refrigerated Warehouse-Rail	39.00	1000sqft	0.90	39,000.00	0
Other Asphalt Surfaces	828.00	1000sqft	19.01	828,000.00	0
Other Non-Asphalt Surfaces	90.00	1000sqft	2.07	90,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	46
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	222.84	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.00617

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Using PG&E RPS data

Land Use -

Construction Phase - Construction schedule provided in a data request

Trips and VMT -

Demolition -

Grading -

Architectural Coating -

Vehicle Trips - Only calculating construction emissions in this run.

Area Coating - Updated square footage in accordance with data request, but only construction emissions considered in this run.

Energy Use - Only calculating construction emissions in this run.

Water And Wastewater - Only calculating construction emissions in this run.

Solid Waste - Only calculating construction emissions in this run.

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	65.00
tblConstructionPhase	NumDays	10.00	70.00
tblConstructionPhase	NumDays	35.00	70.00
tblConstructionPhase	NumDays	370.00	126.00
tblConstructionPhase	NumDays	20.00	64.00
tblConstructionPhase	NumDays	20.00	44.00
tblEnergyUse	LightingElect	2.70	0.00
tblEnergyUse	LightingElect	2.45	0.00
tblEnergyUse	NT24E	4.16	0.00
tblEnergyUse	NT24E	21.99	0.00
tblEnergyUse	NT24NG	3.84	0.00
tblEnergyUse	T24E	1.96	0.00
tblEnergyUse	T24E	0.47	0.00
tblEnergyUse	T24NG	17.03	0.00
tblEnergyUse	T24NG	0.15	0.00
tblGrading	AcresOfGrading	175.00	112.50
tblGrading	MaterialExported	0.00	43,400.00
tblGrading	MaterialImported	0.00	14,200.00
tblProjectCharacteristics	CO2IntensityFactor	641.34505939	222.84
tblSolidWaste	SolidWasteGenerationRate	157.48	0.00
tblSolidWaste	SolidWasteGenerationRate	36.66	0.00
tblVehicleTrips	ST_TR	1.49	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	0.62	0.00

tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	3.82	0.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	IndoorWaterUseRate	29,368,750.00	0.00
tblWater	IndoorWaterUseRate	9,018,750.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	1.1865	7.5465	4.8698	0.0153	1.4061	0.2615	1.6676	0.5937	0.2426	0.8363	0.0000	1,394.4667	1,394.4667	0.2154	0.0000	1,399.8516
2022	0.9238	0.2789	0.4166	7.3000e-004	0.0175	0.0143	0.0318	4.6600e-003	0.0133	0.0180	0.0000	64.3689	64.3689	0.0150	0.0000	64.7438
Maximum	**1.1865**	**7.5465**	**4.8698**	**0.0153**	**1.4061**	**0.2615**	**1.6676**	**0.5937**	**0.2426**	**0.8363**	**0.0000**	**1,394.4667**	**1,394.4667**	**0.2154**	**0.0000**	**1,399.8516**

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	1.1865	7.5465	4.8698	0.0153	0.8504	0.2615	1.1119	0.3263	0.2426	0.5689	0.0000	1,394.4660	1,394.4660	0.2154	0.0000	1,399.8510
2022	0.9238	0.2789	0.4166	7.3000e-004	0.0175	0.0143	0.0318	4.6600e-003	0.0133	0.0180	0.0000	64.3688	64.3688	0.0150	0.0000	64.7437
Maximum	**1.1865**	**7.5465**	**4.8698**	**0.0153**	**0.8504**	**0.2615**	**1.1119**	**0.3263**	**0.2426**	**0.5689**	**0.0000**	**1,394.4660**	**1,394.4660**	**0.2154**	**0.0000**	**1,399.8510**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**39.03**	**0.00**	**32.70**	**44.69**	**0.00**	**31.30**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**2-8-2021**	**5-7-2021**	5.1008	5.1008
2	**5-8-2021**	**8-7-2021**	1.5535	1.5535
3	**8-8-2021**	**11-7-2021**	1.4061	1.4061
4	**11-8-2021**	**2-7-2022**	1.1239	1.1239
5	**2-8-2022**	**5-7-2022**	0.5099	0.5099
6	**5-8-2022**	**8-7-2022**	0.1202	0.1202
		Highest	5.1008	5.1008

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	0.8431	9.0000e-005	9.9800e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0194	0.0194	5.0000e-005	0.0000	0.0207
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.8431**	**9.0000e-005**	**9.9800e-003**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0194**	**0.0194**	**5.0000e-005**	**0.0000**	**0.0207**

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	0.8431	9.0000e-005	9.9800e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0194	0.0194	5.0000e-005	0.0000	0.0207
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.8431**	**9.0000e-005**	**9.9800e-003**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0194**	**0.0194**	**5.0000e-005**	**0.0000**	**0.0207**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	2/8/2021	5/7/2021	5	65	
2	Site Preparation	Site Preparation	2/8/2021	5/14/2021	5	70	
3	Grading	Grading	2/8/2021	5/14/2021	5	70	
4	Building Construction	Building Construction	5/18/2021	11/9/2021	5	126	
5	Architectural Coating	Architectural Coating	12/1/2021	2/28/2022	5	64	
6	Paving	Paving	4/1/2022	6/1/2022	5	44	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 21.08

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 249,000; Non-Residential Outdoor: 83,000; Striped Parking

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	965.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	7,200.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	455.00	178.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	91.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 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					0.1044	0.0000	0.1044	0.0158	0.0000	0.0158	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1029	1.0218	0.7009	1.2600e-003		0.0504	0.0504		0.0468	0.0468	0.0000	110.5026	110.5026	0.0311	0.0000	111.2801
Total	**0.1029**	**1.0218**	**0.7009**	**1.2600e-003**	**0.1044**	**0.0504**	**0.1548**	**0.0158**	**0.0468**	**0.0627**	**0.0000**	**110.5026**	**110.5026**	**0.0311**	**0.0000**	**111.2801**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	3.5700e-003	0.1225	0.0182	3.8000e-004	8.2300e-003	3.9000e-004	8.6200e-003	2.2600e-003	3.8000e-004	2.6400e-003	0.0000	36.1436	36.1436	2.1600e-003	0.0000	36.1976
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0200e-003	1.3200e-003	0.0143	4.0000e-005	3.9000e-003	3.0000e-005	3.9200e-003	1.0400e-003	3.0000e-005	1.0600e-003	0.0000	3.4708	3.4708	1.0000e-004	0.0000	3.4734
Total	**5.5900e-003**	**0.1238**	**0.0325**	**4.2000e-004**	**0.0121**	**4.2000e-004**	**0.0125**	**3.3000e-003**	**4.1000e-004**	**3.7000e-003**	**0.0000**	**39.6144**	**39.6144**	**2.2600e-003**	**0.0000**	**39.6709**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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					0.0470	0.0000	0.0470	7.1100e-003	0.0000	7.1100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1029	1.0218	0.7009	1.2600e-003		0.0504	0.0504		0.0468	0.0468	0.0000	110.5024	110.5024	0.0311	0.0000	111.2800
Total	**0.1029**	**1.0218**	**0.7009**	**1.2600e-003**	**0.0470**	**0.0504**	**0.0974**	**7.1100e-003**	**0.0468**	**0.0540**	**0.0000**	**110.5024**	**110.5024**	**0.0311**	**0.0000**	**111.2800**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	3.5700e-003	0.1225	0.0182	3.8000e-004	8.2300e-003	3.9000e-004	8.6200e-003	2.2600e-003	3.8000e-004	2.6400e-003	0.0000	36.1436	36.1436	2.1600e-003	0.0000	36.1976
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0200e-003	1.3200e-003	0.0143	4.0000e-005	3.9000e-003	3.0000e-005	3.9200e-003	1.0400e-003	3.0000e-005	1.0600e-003	0.0000	3.4708	3.4708	1.0000e-004	0.0000	3.4734
Total	**5.5900e-003**	**0.1238**	**0.0325**	**4.2000e-004**	**0.0121**	**4.2000e-004**	**0.0125**	**3.3000e-003**	**4.1000e-004**	**3.7000e-003**	**0.0000**	**39.6144**	**39.6144**	**2.2600e-003**	**0.0000**	**39.6709**

3.3 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					0.6323	0.0000	0.6323	0.3476	0.0000	0.3476	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.1361	1.4174	0.7404	1.3300e-003		0.0716	0.0716		0.0658	0.0658	0.0000	117.0250	117.0250	0.0379	0.0000	117.9712
Total	**0.1361**	**1.4174**	**0.7404**	**1.3300e-003**	**0.6323**	**0.0716**	**0.7039**	**0.3476**	**0.0658**	**0.4134**	**0.0000**	**117.0250**	**117.0250**	**0.0379**	**0.0000**	**117.9712**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6100e-003	1.7100e-003	0.0185	5.0000e-005	5.0300e-003	4.0000e-005	5.0700e-003	1.3400e-003	3.0000e-005	1.3700e-003	0.0000	4.4854	4.4854	1.3000e-004	0.0000	4.4886
Total	**2.6100e-003**	**1.7100e-003**	**0.0185**	**5.0000e-005**	**5.0300e-003**	**4.0000e-005**	**5.0700e-003**	**1.3400e-003**	**3.0000e-005**	**1.3700e-003**	**0.0000**	**4.4854**	**4.4854**	**1.3000e-004**	**0.0000**	**4.4886**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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					0.2845	0.0000	0.2845	0.1564	0.0000	0.1564	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1361	1.4174	0.7404	1.3300e-003		0.0716	0.0716		0.0658	0.0658	0.0000	117.0249	117.0249	0.0379	0.0000	117.9711
Total	**0.1361**	**1.4174**	**0.7404**	**1.3300e-003**	**0.2845**	**0.0716**	**0.3561**	**0.1564**	**0.0658**	**0.2222**	**0.0000**	**117.0249**	**117.0249**	**0.0379**	**0.0000**	**117.9711**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6100e-003	1.7100e-003	0.0185	5.0000e-005	5.0300e-003	4.0000e-005	5.0700e-003	1.3400e-003	3.0000e-005	1.3700e-003	0.0000	4.4854	4.4854	1.3000e-004	0.0000	4.4886
Total	**2.6100e-003**	**1.7100e-003**	**0.0185**	**5.0000e-005**	**5.0300e-003**	**4.0000e-005**	**5.0700e-003**	**1.3400e-003**	**3.0000e-005**	**1.3700e-003**	**0.0000**	**4.4854**	**4.4854**	**1.3000e-004**	**0.0000**	**4.4886**

3.4 Grading - 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					0.2737	0.0000	0.2737	0.1228	0.0000	0.1228	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1467	1.6240	1.0808	2.1700e-003		0.0695	0.0695		0.0639	0.0639	0.0000	190.7324	190.7324	0.0617	0.0000	192.2746
Total	**0.1467**	**1.6240**	**1.0808**	**2.1700e-003**	**0.2737**	**0.0695**	**0.3432**	**0.1228**	**0.0639**	**0.1867**	**0.0000**	**190.7324**	**190.7324**	**0.0617**	**0.0000**	**192.2746**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0266	0.9138	0.1357	2.8300e-003	0.0614	2.9400e-003	0.0643	0.0169	2.8200e-003	0.0197	0.0000	269.6722	269.6722	0.0161	0.0000	270.0752

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-003	1.9000e-003	0.0205	6.0000e-005	5.5900e-003	4.0000e-005	5.6300e-003	1.4900e-003	4.0000e-005	1.5300e-003	0.0000	4.9838	4.9838	1.4000e-004	0.0000	4.9874
Total	**0.0295**	**0.9157**	**0.1562**	**2.8900e-003**	**0.0670**	**2.9800e-003**	**0.0700**	**0.0184**	**2.8600e-003**	**0.0212**	**0.0000**	**274.6559**	**274.6559**	**0.0163**	**0.0000**	**275.0626**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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					0.1232	0.0000	0.1232	0.0553	0.0000	0.0553	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1467	1.6240	1.0807	2.1700e-003		0.0695	0.0695		0.0639	0.0639	0.0000	190.7322	190.7322	0.0617	0.0000	192.2744
Total	**0.1467**	**1.6240**	**1.0807**	**2.1700e-003**	**0.1232**	**0.0695**	**0.1927**	**0.0553**	**0.0639**	**0.1192**	**0.0000**	**190.7322**	**190.7322**	**0.0617**	**0.0000**	**192.2744**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0266	0.9138	0.1357	2.8300e-003	0.0614	2.9400e-003	0.0643	0.0169	2.8200e-003	0.0197	0.0000	269.6722	269.6722	0.0161	0.0000	270.0752
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-003	1.9000e-003	0.0205	6.0000e-005	5.5900e-003	4.0000e-005	5.6300e-003	1.4900e-003	4.0000e-005	1.5300e-003	0.0000	4.9838	4.9838	1.4000e-004	0.0000	4.9874
Total	**0.0295**	**0.9157**	**0.1562**	**2.8900e-003**	**0.0670**	**2.9800e-003**	**0.0700**	**0.0184**	**2.8600e-003**	**0.0212**	**0.0000**	**274.6559**	**274.6559**	**0.0163**	**0.0000**	**275.0626**

3.5 Building Construction - 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	0.1198	1.0982	1.0442	1.7000e-003		0.0604	0.0604		0.0568	0.0568	0.0000	145.9315	145.9315	0.0352	0.0000	146.8117
Total	**0.1198**	**1.0982**	**1.0442**	**1.7000e-003**		**0.0604**	**0.0604**		**0.0568**	**0.0568**	**0.0000**	**145.9315**	**145.9315**	**0.0352**	**0.0000**	**146.8117**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0342	1.2457	0.2046	3.1200e-003	0.0742	3.3600e-003	0.0776	0.0214	3.2100e-003	0.0246	0.0000	297.0477	297.0477	0.0246	0.0000	297.6615
Worker	0.1188	0.0777	0.8402	2.2600e-003	0.2290	1.7100e-003	0.2307	0.0609	1.5700e-003	0.0625	0.0000	204.0848	204.0848	5.9300e-003	0.0000	204.2330
Total	**0.1530**	**1.3235**	**1.0449**	**5.3800e-003**	**0.3032**	**5.0700e-003**	**0.3083**	**0.0823**	**4.7800e-003**	**0.0871**	**0.0000**	**501.1325**	**501.1325**	**0.0305**	**0.0000**	**501.8945**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.1198	1.0982	1.0442	1.7000e-003		0.0604	0.0604		0.0568	0.0568	0.0000	145.9313	145.9313	0.0352	0.0000	146.8115

Total	**0.1198**	**1.0982**	**1.0442**	**1.7000e-003**		**0.0604**	**0.0604**		**0.0568**	**0.0568**	**0.0000**	**145.9313**	**145.9313**	**0.0352**	**0.0000**	**146.8115**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0342	1.2457	0.2046	3.1200e-003	0.0742	3.3600e-003	0.0776	0.0214	3.2100e-003	0.0246	0.0000	297.0477	297.0477	0.0246	0.0000	297.6615
Worker	0.1188	0.0777	0.8402	2.2600e-003	0.2290	1.7100e-003	0.2307	0.0609	1.5700e-003	0.0625	0.0000	204.0848	204.0848	5.9300e-003	0.0000	204.2330
Total	**0.1530**	**1.3235**	**1.0449**	**5.3800e-003**	**0.3032**	**5.0700e-003**	**0.3083**	**0.0823**	**4.7800e-003**	**0.0871**	**0.0000**	**501.1325**	**501.1325**	**0.0305**	**0.0000**	**501.8945**

3.6 Architectural Coating - 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					
Archit. Coating	0.4836					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5200e-003	0.0176	0.0209	3.0000e-005		1.0800e-003	1.0800e-003		1.0800e-003	1.0800e-003	0.0000	2.9362	2.9362	2.0000e-004	0.0000	2.9413
Total	**0.4861**	**0.0176**	**0.0209**	**3.0000e-005**		**1.0800e-003**	**1.0800e-003**		**1.0800e-003**	**1.0800e-003**	**0.0000**	**2.9362**	**2.9362**	**2.0000e-004**	**0.0000**	**2.9413**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3400e-003	2.8400e-003	0.0307	8.0000e-005	8.3600e-003	6.0000e-005	8.4200e-003	2.2200e-003	6.0000e-005	2.2800e-003	0.0000	7.4507	7.4507	2.2000e-004	0.0000	7.4561
Total	**4.3400e-003**	**2.8400e-003**	**0.0307**	**8.0000e-005**	**8.3600e-003**	**6.0000e-005**	**8.4200e-003**	**2.2200e-003**	**6.0000e-005**	**2.2800e-003**	**0.0000**	**7.4507**	**7.4507**	**2.2000e-004**	**0.0000**	**7.4561**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4836					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5200e-003	0.0176	0.0209	3.0000e-005		1.0800e-003	1.0800e-003		1.0800e-003	1.0800e-003	0.0000	2.9362	2.9362	2.0000e-004	0.0000	2.9413
Total	**0.4861**	**0.0176**	**0.0209**	**3.0000e-005**		**1.0800e-003**	**1.0800e-003**		**1.0800e-003**	**1.0800e-003**	**0.0000**	**2.9362**	**2.9362**	**2.0000e-004**	**0.0000**	**2.9413**

Mitigated Construction Off-Site

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

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3400e-003	2.8400e-003	0.0307	8.0000e-005	8.3600e-003	6.0000e-005	8.4200e-003	2.2200e-003	6.0000e-005	2.2800e-003	0.0000	7.4507	7.4507	2.2000e-004	0.0000	7.4561
Total	**4.3400e-003**	**2.8400e-003**	**0.0307**	**8.0000e-005**	**8.3600e-003**	**6.0000e-005**	**8.4200e-003**	**2.2200e-003**	**6.0000e-005**	**2.2800e-003**	**0.0000**	**7.4507**	**7.4507**	**2.2000e-004**	**0.0000**	**7.4561**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8620					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1900e-003	0.0289	0.0372	6.0000e-005		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003	0.0000	5.2342	5.2342	3.4000e-004	0.0000	5.2427
Total	**0.8662**	**0.0289**	**0.0372**	**6.0000e-005**		**1.6800e-003**	**1.6800e-003**		**1.6800e-003**	**1.6800e-003**	**0.0000**	**5.2342**	**5.2342**	**3.4000e-004**	**0.0000**	**5.2427**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.1600e-003	4.5200e-003	0.0499	1.4000e-004	0.0149	1.1000e-004	0.0150	3.9600e-003	1.0000e-004	4.0600e-003	0.0000	12.8083	12.8083	3.4000e-004	0.0000	12.8170
Total	**7.1600e-003**	**4.5200e-003**	**0.0499**	**1.4000e-004**	**0.0149**	**1.1000e-004**	**0.0150**	**3.9600e-003**	**1.0000e-004**	**4.0600e-003**	**0.0000**	**12.8083**	**12.8083**	**3.4000e-004**	**0.0000**	**12.8170**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8620					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1900e-003	0.0289	0.0372	6.0000e-005		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003	0.0000	5.2342	5.2342	3.4000e-004	0.0000	5.2427
Total	**0.8662**	**0.0289**	**0.0372**	**6.0000e-005**		**1.6800e-003**	**1.6800e-003**		**1.6800e-003**	**1.6800e-003**	**0.0000**	**5.2342**	**5.2342**	**3.4000e-004**	**0.0000**	**5.2427**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.1600e-003	4.5200e-003	0.0499	1.4000e-004	0.0149	1.1000e-004	0.0150	3.9600e-003	1.0000e-004	4.0600e-003	0.0000	12.8083	12.8083	3.4000e-004	0.0000	12.8170
Total	**7.1600e-003**	**4.5200e-003**	**0.0499**	**1.4000e-004**	**0.0149**	**1.1000e-004**	**0.0150**	**3.9600e-003**	**1.0000e-004**	**4.0600e-003**	**0.0000**	**12.8083**	**12.8083**	**3.4000e-004**	**0.0000**	**12.8170**

3.7 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0243	0.2448	0.3208	5.0000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	44.0606	44.0606	0.0143	0.0000	44.4169

Paving	0.0249					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0492**	**0.2448**	**0.3208**	**5.0000e-004**		**0.0125**	**0.0125**		**0.0115**	**0.0115**	**0.0000**	**44.0606**	**44.0606**	**0.0143**	**0.0000**	**44.4169**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2700e-003	8.0000e-004	8.8200e-003	3.0000e-005	2.6400e-003	2.0000e-005	2.6600e-003	7.0000e-004	2.0000e-005	7.2000e-004	0.0000	2.2658	2.2658	6.0000e-005	0.0000	2.2673
Total	**1.2700e-003**	**8.0000e-004**	**8.8200e-003**	**3.0000e-005**	**2.6400e-003**	**2.0000e-005**	**2.6600e-003**	**7.0000e-004**	**2.0000e-005**	**7.2000e-004**	**0.0000**	**2.2658**	**2.2658**	**6.0000e-005**	**0.0000**	**2.2673**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0243	0.2448	0.3208	5.0000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	44.0606	44.0606	0.0143	0.0000	44.4168
Paving	0.0249					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0492**	**0.2448**	**0.3208**	**5.0000e-004**		**0.0125**	**0.0125**		**0.0115**	**0.0115**	**0.0000**	**44.0606**	**44.0606**	**0.0143**	**0.0000**	**44.4168**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2700e-003	8.0000e-004	8.8200e-003	3.0000e-005	2.6400e-003	2.0000e-005	2.6600e-003	7.0000e-004	2.0000e-005	7.2000e-004	0.0000	2.2658	2.2658	6.0000e-005	0.0000	2.2673
Total	**1.2700e-003**	**8.0000e-004**	**8.8200e-003**	**3.0000e-005**	**2.6400e-003**	**2.0000e-005**	**2.6600e-003**	**7.0000e-004**	**2.0000e-005**	**7.2000e-004**	**0.0000**	**2.2658**	**2.2658**	**6.0000e-005**	**0.0000**	**2.2673**

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

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Manufacturing	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		

Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Refrigerated Warehouse-Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Manufacturing	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Refrigerated Warehouse-Rail	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Manufacturing	0.516452	0.033212	0.173817	0.123150	0.022816	0.005352	0.027555	0.088301	0.001837	0.001119	0.004633	0.000845	0.000911
Other Asphalt Surfaces	0.516452	0.033212	0.173817	0.123150	0.022816	0.005352	0.027555	0.088301	0.001837	0.001119	0.004633	0.000845	0.000911
Other Non-Asphalt Surfaces	0.516452	0.033212	0.173817	0.123150	0.022816	0.005352	0.027555	0.088301	0.001837	0.001119	0.004633	0.000845	0.000911
Refrigerated Warehouse-Rail	0.516452	0.033212	0.173817	0.123150	0.022816	0.005352	0.027555	0.088301	0.001837	0.001119	0.004633	0.000845	0.000911

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

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					
Manufacturing	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
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
Refrigerated Warehouse-Rail	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					
Manufacturing	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
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
Refrigerated Warehouse-Rail	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Manufacturing	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Manufacturing	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.8431	9.0000e-005	9.9800e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0194	0.0194	5.0000e-005	0.0000	0.0207
Unmitigated	0.8431	9.0000e-005	9.9800e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0194	0.0194	5.0000e-005	0.0000	0.0207

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1346					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7077					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.3000e-004	9.0000e-005	9.9800e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0194	0.0194	5.0000e-005	0.0000	0.0207
Total	**0.8431**	**9.0000e-005**	**9.9800e-003**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0194**	**0.0194**	**5.0000e-005**	**0.0000**	**0.0207**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1346					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7077					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.3000e-004	9.0000e-005	9.9800e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0194	0.0194	5.0000e-005	0.0000	0.0207
Total	**0.8431**	**9.0000e-005**	**9.9800e-003**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0194**	**0.0194**	**5.0000e-005**	**0.0000**	**0.0207**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Manufacturing	0 / 0	0.0000	0.0000	0.0000	0.0000

Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Manufacturing	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			

Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Manufacturing	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

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

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Modesto Operational Emissions - Stanislaus County, Annual

Modesto Operational Emissions

Stanislaus County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	127.00	1000sqft	2.92	127,000.00	0
Refrigerated Warehouse-Rail	39.00	1000sqft	0.90	39,000.00	0
Other Asphalt Surfaces	828.00	1000sqft	19.01	828,000.00	0
Other Non-Asphalt Surfaces	90.00	1000sqft	2.07	90,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	46
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	222.84	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Updated intensity factor based on PG&E RPS

Land Use -

Construction Phase - Construction schedule provided in a data request

Demolition -

Grading -

Vehicle Trips - Calculating mobile emissions outside CalEEMod

Energy Use - Calculating energy emissions outside model

Water And Wastewater - Using 200 gpm from project description, put all in manufacturing land use

Solid Waste - From facility, put all under manufacturing

Area Coating -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	70.00
tblConstructionPhase	NumDays	370.00	126.00
tblConstructionPhase	NumDays	35.00	70.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	20.00	64.00
tblConstructionPhase	NumDays	30.00	65.00
tblConstructionPhase	PhaseEndDate	4/16/2021	5/14/2021
tblConstructionPhase	PhaseEndDate	2/24/2023	11/9/2021
tblConstructionPhase	PhaseEndDate	6/18/2021	5/14/2021
tblConstructionPhase	PhaseEndDate	4/14/2023	6/1/2022
tblConstructionPhase	PhaseEndDate	6/2/2023	2/28/2022
tblConstructionPhase	PhaseEndDate	3/19/2021	5/7/2021
tblConstructionPhase	PhaseStartDate	3/20/2021	2/8/2021
tblConstructionPhase	PhaseStartDate	6/19/2021	5/18/2021
tblConstructionPhase	PhaseStartDate	4/17/2021	2/8/2021
tblConstructionPhase	PhaseStartDate	2/25/2023	4/1/2022
tblConstructionPhase	PhaseStartDate	4/15/2023	12/1/2021
tblEnergyUse	LightingElect	2.70	0.00
tblEnergyUse	LightingElect	2.45	0.00
tblEnergyUse	NT24E	4.16	0.00
tblEnergyUse	NT24E	21.99	0.00
tblEnergyUse	NT24NG	3.84	0.00
tblEnergyUse	T24E	1.96	0.00
tblEnergyUse	T24E	0.47	0.00
tblEnergyUse	T24NG	17.03	0.00
tblEnergyUse	T24NG	0.15	0.00
tblGrading	MaterialExported	0.00	43,400.00

tblGrading	MaterialImported	0.00	14,200.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	222.84
tblSolidWaste	SolidWasteGenerationRate	167.40	225.65
tblSolidWaste	SolidWasteGenerationRate	36.66	0.00
tblVehicleTrips	ST_TR	1.49	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	0.62	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	3.82	0.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	IndoorWaterUseRate	31,218,750.00	105,120,000.00
tblWater	IndoorWaterUseRate	9,018,750.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	1.2045	7.4405	4.8618	0.0150	1.0782	0.2612	1.3394	0.4178	0.2423	0.6600	0.0000	1,364.4523	1,364.4523	0.2136	0.0000	1,369.7919
2022	0.9595	0.2790	0.4172	7.3000e-004	0.0177	0.0143	0.0320	4.7100e-003	0.0133	0.0180	0.0000	64.5096	64.5096	0.0150	0.0000	64.8847
Maximum	**1.2045**	**7.4405**	**4.8618**	**0.0150**	**1.0782**	**0.2612**	**1.3394**	**0.4178**	**0.2423**	**0.6600**	**0.0000**	**1,364.4523**	**1,364.4523**	**0.2136**	**0.0000**	**1,369.7919**

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	1.2045	7.4405	4.8618	0.0150	1.0782	0.2612	1.3394	0.4178	0.2423	0.6600	0.0000	1,364.4516	1,364.4516	0.2136	0.0000	1,369.7912
2022	0.9595	0.2790	0.4172	7.3000e-004	0.0177	0.0143	0.0320	4.7100e-003	0.0133	0.0180	0.0000	64.5096	64.5096	0.0150	0.0000	64.8846
Maximum	**1.2045**	**7.4405**	**4.8618**	**0.0150**	**1.0782**	**0.2612**	**1.3394**	**0.4178**	**0.2423**	**0.6600**	**0.0000**	**1,364.4516**	**1,364.4516**	**0.2136**	**0.0000**	**1,369.7912**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**2-8-2021**	**5-7-2021**	4.9873	4.9873
2	**5-8-2021**	**8-7-2021**	1.5577	1.5577
3	**8-8-2021**	**11-7-2021**	1.4108	1.4108
4	**11-8-2021**	**2-7-2022**	1.1670	1.1670
5	**2-8-2022**	**5-7-2022**	0.5230	0.5230
6	**5-8-2022**	**8-7-2022**	0.1202	0.1202
		Highest	4.9873	4.9873

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	0.8487	9.0000e-005	9.9800e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0194	0.0194	5.0000e-005	0.0000	0.0207
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	45.8049	0.0000	45.8049	2.7070	0.0000	113.4797
Water						0.0000	0.0000		0.0000	0.0000	33.3497	57.4939	90.8436	3.4328	0.0824	201.2275
Total	**0.8487**	**9.0000e-005**	**9.9800e-003**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**79.1546**	**57.5133**	**136.6679**	**6.1399**	**0.0824**	**314.7279**

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	0.8487	9.0000e-005	9.9800e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0194	0.0194	5.0000e-005	0.0000	0.0207
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	45.8049	0.0000	45.8049	2.7070	0.0000	113.4797
Water						0.0000	0.0000		0.0000	0.0000	33.3497	57.4939	90.8436	3.4328	0.0824	201.2275
Total	**0.8487**	**9.0000e-005**	**9.9800e-003**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**79.1546**	**57.5133**	**136.6679**	**6.1399**	**0.0824**	**314.7279**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	2/8/2021	5/7/2021	5	65	
2	Site Preparation	Site Preparation	2/8/2021	5/14/2021	5	70	
3	Grading	Grading	2/8/2021	5/14/2021	5	70	

4	Building Construction	Building Construction	5/18/2021	11/9/2021	5	126	
5	Paving	Paving	4/1/2022	6/1/2022	5	44	
6	Architectural Coating	Architectural Coating	12/1/2021	2/28/2022	5	64	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 100

Acres of Paving: 21.08

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 261,000; Non-Residential Outdoor: 87,000; Striped Parking

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	459.00	179.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	7,200.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	92.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	69.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 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					0.1044	0.0000	0.1044	0.0158	0.0000	0.0158	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1029	1.0218	0.7009	1.2600e-003		0.0504	0.0504		0.0468	0.0468	0.0000	110.5026	110.5026	0.0311	0.0000	111.2801
Total	**0.1029**	**1.0218**	**0.7009**	**1.2600e-003**	**0.1044**	**0.0504**	**0.1548**	**0.0158**	**0.0468**	**0.0627**	**0.0000**	**110.5026**	**110.5026**	**0.0311**	**0.0000**	**111.2801**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	2.6000e-004	8.7600e-003	1.3000e-003	3.0000e-005	5.9000e-004	3.0000e-005	6.2000e-004	1.6000e-004	3.0000e-005	1.9000e-004	0.0000	2.5844	2.5844	1.5000e-004	0.0000	2.5882

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0200e-003	1.3200e-003	0.0143	4.0000e-005	3.9000e-003	3.0000e-005	3.9200e-003	1.0400e-003	3.0000e-005	1.0600e-003	0.0000	3.4708	3.4708	1.0000e-004	0.0000	3.4734
Total	**2.2800e-003**	**0.0101**	**0.0156**	**7.0000e-005**	**4.4900e-003**	**6.0000e-005**	**4.5400e-003**	**1.2000e-003**	**6.0000e-005**	**1.2500e-003**	**0.0000**	**6.0552**	**6.0552**	**2.5000e-004**	**0.0000**	**6.0616**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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					0.1044	0.0000	0.1044	0.0158	0.0000	0.0158	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1029	1.0218	0.7009	1.2600e-003		0.0504	0.0504		0.0468	0.0468	0.0000	110.5024	110.5024	0.0311	0.0000	111.2800
Total	**0.1029**	**1.0218**	**0.7009**	**1.2600e-003**	**0.1044**	**0.0504**	**0.1548**	**0.0158**	**0.0468**	**0.0627**	**0.0000**	**110.5024**	**110.5024**	**0.0311**	**0.0000**	**111.2800**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	2.6000e-004	8.7600e-003	1.3000e-003	3.0000e-005	5.9000e-004	3.0000e-005	6.2000e-004	1.6000e-004	3.0000e-005	1.9000e-004	0.0000	2.5844	2.5844	1.5000e-004	0.0000	2.5882
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0200e-003	1.3200e-003	0.0143	4.0000e-005	3.9000e-003	3.0000e-005	3.9200e-003	1.0400e-003	3.0000e-005	1.0600e-003	0.0000	3.4708	3.4708	1.0000e-004	0.0000	3.4734
Total	**2.2800e-003**	**0.0101**	**0.0156**	**7.0000e-005**	**4.4900e-003**	**6.0000e-005**	**4.5400e-003**	**1.2000e-003**	**6.0000e-005**	**1.2500e-003**	**0.0000**	**6.0552**	**6.0552**	**2.5000e-004**	**0.0000**	**6.0616**

3.3 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					0.4065	0.0000	0.4065	0.2234	0.0000	0.2234	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1361	1.4174	0.7404	1.3300e-003		0.0716	0.0716		0.0658	0.0658	0.0000	117.0250	117.0250	0.0379	0.0000	117.9712
Total	**0.1361**	**1.4174**	**0.7404**	**1.3300e-003**	**0.4065**	**0.0716**	**0.4781**	**0.2234**	**0.0658**	**0.2893**	**0.0000**	**117.0250**	**117.0250**	**0.0379**	**0.0000**	**117.9712**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6100e-003	1.7100e-003	0.0185	5.0000e-005	5.0300e-003	4.0000e-005	5.0700e-003	1.3400e-003	3.0000e-005	1.3700e-003	0.0000	4.4854	4.4854	1.3000e-004	0.0000	4.4886
Total	**2.6100e-003**	**1.7100e-003**	**0.0185**	**5.0000e-005**	**5.0300e-003**	**4.0000e-005**	**5.0700e-003**	**1.3400e-003**	**3.0000e-005**	**1.3700e-003**	**0.0000**	**4.4854**	**4.4854**	**1.3000e-004**	**0.0000**	**4.4886**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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					0.4065	0.0000	0.4065	0.2234	0.0000	0.2234	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.1361	1.4174	0.7404	1.3300e-003		0.0716	0.0716		0.0658	0.0658	0.0000	117.0249	117.0249	0.0379	0.0000	117.9711
Total	**0.1361**	**1.4174**	**0.7404**	**1.3300e-003**	**0.4065**	**0.0716**	**0.4781**	**0.2234**	**0.0658**	**0.2893**	**0.0000**	**117.0249**	**117.0249**	**0.0379**	**0.0000**	**117.9711**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6100e-003	1.7100e-003	0.0185	5.0000e-005	5.0300e-003	4.0000e-005	5.0700e-003	1.3400e-003	3.0000e-005	1.3700e-003	0.0000	4.4854	4.4854	1.3000e-004	0.0000	4.4886
Total	**2.6100e-003**	**1.7100e-003**	**0.0185**	**5.0000e-005**	**5.0300e-003**	**4.0000e-005**	**5.0700e-003**	**1.3400e-003**	**3.0000e-005**	**1.3700e-003**	**0.0000**	**4.4854**	**4.4854**	**1.3000e-004**	**0.0000**	**4.4886**

3.4 Grading - 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					0.1767	0.0000	0.1767	0.0724	0.0000	0.0724	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1467	1.6240	1.0808	2.1700e-003		0.0695	0.0695		0.0639	0.0639	0.0000	190.7324	190.7324	0.0617	0.0000	192.2746
Total	**0.1467**	**1.6240**	**1.0808**	**2.1700e-003**	**0.1767**	**0.0695**	**0.2462**	**0.0724**	**0.0639**	**0.1364**	**0.0000**	**190.7324**	**190.7324**	**0.0617**	**0.0000**	**192.2746**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0266	0.9138	0.1357	2.8300e-003	0.0614	2.9400e-003	0.0643	0.0169	2.8200e-003	0.0197	0.0000	269.6722	269.6722	0.0161	0.0000	270.0752
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-003	1.9000e-003	0.0205	6.0000e-005	5.5900e-003	4.0000e-005	5.6300e-003	1.4900e-003	4.0000e-005	1.5300e-003	0.0000	4.9838	4.9838	1.4000e-004	0.0000	4.9874
Total	**0.0295**	**0.9157**	**0.1562**	**2.8900e-003**	**0.0670**	**2.9800e-003**	**0.0700**	**0.0184**	**2.8600e-003**	**0.0212**	**0.0000**	**274.6559**	**274.6559**	**0.0163**	**0.0000**	**275.0626**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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					0.1767	0.0000	0.1767	0.0724	0.0000	0.0724	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1467	1.6240	1.0807	2.1700e-003		0.0695	0.0695		0.0639	0.0639	0.0000	190.7322	190.7322	0.0617	0.0000	192.2744
Total	**0.1467**	**1.6240**	**1.0807**	**2.1700e-003**	**0.1767**	**0.0695**	**0.2462**	**0.0724**	**0.0639**	**0.1364**	**0.0000**	**190.7322**	**190.7322**	**0.0617**	**0.0000**	**192.2744**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0266	0.9138	0.1357	2.8300e-003	0.0614	2.9400e-003	0.0643	0.0169	2.8200e-003	0.0197	0.0000	269.6722	269.6722	0.0161	0.0000	270.0752

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-003	1.9000e-003	0.0205	6.0000e-005	5.5900e-003	4.0000e-005	5.6300e-003	1.4900e-003	4.0000e-005	1.5300e-003	0.0000	4.9838	4.9838	1.4000e-004	0.0000	4.9874
Total	**0.0295**	**0.9157**	**0.1562**	**2.8900e-003**	**0.0670**	**2.9800e-003**	**0.0700**	**0.0184**	**2.8600e-003**	**0.0212**	**0.0000**	**274.6559**	**274.6559**	**0.0163**	**0.0000**	**275.0626**

3.5 Building Construction - 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	0.1198	1.0982	1.0442	1.7000e-003		0.0604	0.0604		0.0568	0.0568	0.0000	145.9315	145.9315	0.0352	0.0000	146.8117
Total	**0.1198**	**1.0982**	**1.0442**	**1.7000e-003**		**0.0604**	**0.0604**		**0.0568**	**0.0568**	**0.0000**	**145.9315**	**145.9315**	**0.0352**	**0.0000**	**146.8117**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0344	1.2527	0.2058	3.1400e-003	0.0746	3.3700e-003	0.0780	0.0216	3.2300e-003	0.0248	0.0000	298.7165	298.7165	0.0247	0.0000	299.3338
Worker	0.1198	0.0784	0.8476	2.2800e-003	0.2310	1.7200e-003	0.2328	0.0614	1.5900e-003	0.0630	0.0000	205.8790	205.8790	5.9800e-003	0.0000	206.0285
Total	**0.1542**	**1.3312**	**1.0534**	**5.4200e-003**	**0.3057**	**5.0900e-003**	**0.3108**	**0.0830**	**4.8200e-003**	**0.0878**	**0.0000**	**504.5955**	**504.5955**	**0.0307**	**0.0000**	**505.3623**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.1198	1.0982	1.0442	1.7000e-003		0.0604	0.0604		0.0568	0.0568	0.0000	145.9313	145.9313	0.0352	0.0000	146.8115
Total	**0.1198**	**1.0982**	**1.0442**	**1.7000e-003**		**0.0604**	**0.0604**		**0.0568**	**0.0568**	**0.0000**	**145.9313**	**145.9313**	**0.0352**	**0.0000**	**146.8115**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0344	1.2527	0.2058	3.1400e-003	0.0746	3.3700e-003	0.0780	0.0216	3.2300e-003	0.0248	0.0000	298.7165	298.7165	0.0247	0.0000	299.3338
Worker	0.1198	0.0784	0.8476	2.2800e-003	0.2310	1.7200e-003	0.2328	0.0614	1.5900e-003	0.0630	0.0000	205.8790	205.8790	5.9800e-003	0.0000	206.0285
Total	**0.1542**	**1.3312**	**1.0534**	**5.4200e-003**	**0.3057**	**5.0900e-003**	**0.3108**	**0.0830**	**4.8200e-003**	**0.0878**	**0.0000**	**504.5955**	**504.5955**	**0.0307**	**0.0000**	**505.3623**

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0243	0.2448	0.3208	5.0000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	44.0606	44.0606	0.0143	0.0000	44.4169

Paving	0.0249					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0492**	**0.2448**	**0.3208**	**5.0000e-004**		**0.0125**	**0.0125**		**0.0115**	**0.0115**	**0.0000**	**44.0606**	**44.0606**	**0.0143**	**0.0000**	**44.4169**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2700e-003	8.0000e-004	8.8200e-003	3.0000e-005	2.6400e-003	2.0000e-005	2.6600e-003	7.0000e-004	2.0000e-005	7.2000e-004	0.0000	2.2658	2.2658	6.0000e-005	0.0000	2.2673
Total	**1.2700e-003**	**8.0000e-004**	**8.8200e-003**	**3.0000e-005**	**2.6400e-003**	**2.0000e-005**	**2.6600e-003**	**7.0000e-004**	**2.0000e-005**	**7.2000e-004**	**0.0000**	**2.2658**	**2.2658**	**6.0000e-005**	**0.0000**	**2.2673**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0243	0.2448	0.3208	5.0000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	44.0606	44.0606	0.0143	0.0000	44.4168
Paving	0.0249					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0492**	**0.2448**	**0.3208**	**5.0000e-004**		**0.0125**	**0.0125**		**0.0115**	**0.0115**	**0.0000**	**44.0606**	**44.0606**	**0.0143**	**0.0000**	**44.4168**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2700e-003	8.0000e-004	8.8200e-003	3.0000e-005	2.6400e-003	2.0000e-005	2.6600e-003	7.0000e-004	2.0000e-005	7.2000e-004	0.0000	2.2658	2.2658	6.0000e-005	0.0000	2.2673
Total	**1.2700e-003**	**8.0000e-004**	**8.8200e-003**	**3.0000e-005**	**2.6400e-003**	**2.0000e-005**	**2.6600e-003**	**7.0000e-004**	**2.0000e-005**	**7.2000e-004**	**0.0000**	**2.2658**	**2.2658**	**6.0000e-005**	**0.0000**	**2.2673**

3.7 Architectural Coating - 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					
Archit. Coating	0.5036					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5200e-003	0.0176	0.0209	3.0000e-005		1.0800e-003	1.0800e-003		1.0800e-003	1.0800e-003	0.0000	2.9362	2.9362	2.0000e-004	0.0000	2.9413
Total	**0.5061**	**0.0176**	**0.0209**	**3.0000e-005**		**1.0800e-003**	**1.0800e-003**		**1.0800e-003**	**1.0800e-003**	**0.0000**	**2.9362**	**2.9362**	**2.0000e-004**	**0.0000**	**2.9413**

Unmitigated Construction Off-Site

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

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3800e-003	2.8700e-003	0.0310	8.0000e-005	8.4500e-003	6.0000e-005	8.5200e-003	2.2500e-003	6.0000e-005	2.3000e-003	0.0000	7.5326	7.5326	2.2000e-004	0.0000	7.5381
Total	**4.3800e-003**	**2.8700e-003**	**0.0310**	**8.0000e-005**	**8.4500e-003**	**6.0000e-005**	**8.5200e-003**	**2.2500e-003**	**6.0000e-005**	**2.3000e-003**	**0.0000**	**7.5326**	**7.5326**	**2.2000e-004**	**0.0000**	**7.5381**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5036					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5200e-003	0.0176	0.0209	3.0000e-005		1.0800e-003	1.0800e-003		1.0800e-003	1.0800e-003	0.0000	2.9362	2.9362	2.0000e-004	0.0000	2.9413
Total	**0.5061**	**0.0176**	**0.0209**	**3.0000e-005**		**1.0800e-003**	**1.0800e-003**		**1.0800e-003**	**1.0800e-003**	**0.0000**	**2.9362**	**2.9362**	**2.0000e-004**	**0.0000**	**2.9413**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3800e-003	2.8700e-003	0.0310	8.0000e-005	8.4500e-003	6.0000e-005	8.5200e-003	2.2500e-003	6.0000e-005	2.3000e-003	0.0000	7.5326	7.5326	2.2000e-004	0.0000	7.5381
Total	**4.3800e-003**	**2.8700e-003**	**0.0310**	**8.0000e-005**	**8.4500e-003**	**6.0000e-005**	**8.5200e-003**	**2.2500e-003**	**6.0000e-005**	**2.3000e-003**	**0.0000**	**7.5326**	**7.5326**	**2.2000e-004**	**0.0000**	**7.5381**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8977					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1900e-003	0.0289	0.0372	6.0000e-005		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003	0.0000	5.2342	5.2342	3.4000e-004	0.0000	5.2427
Total	**0.9018**	**0.0289**	**0.0372**	**6.0000e-005**		**1.6800e-003**	**1.6800e-003**		**1.6800e-003**	**1.6800e-003**	**0.0000**	**5.2342**	**5.2342**	**3.4000e-004**	**0.0000**	**5.2427**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.2400e-003	4.5700e-003	0.0504	1.4000e-004	0.0151	1.1000e-004	0.0152	4.0100e-003	1.0000e-004	4.1100e-003	0.0000	12.9491	12.9491	3.5000e-004	0.0000	12.9578
Total	**7.2400e-003**	**4.5700e-003**	**0.0504**	**1.4000e-004**	**0.0151**	**1.1000e-004**	**0.0152**	**4.0100e-003**	**1.0000e-004**	**4.1100e-003**	**0.0000**	**12.9491**	**12.9491**	**3.5000e-004**	**0.0000**	**12.9578**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8977					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	4.1900e-003	0.0289	0.0372	6.0000e-005		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003	0.0000	5.2342	5.2342	3.4000e-004	0.0000	5.2427
Total	**0.9018**	**0.0289**	**0.0372**	**6.0000e-005**		**1.6800e-003**	**1.6800e-003**		**1.6800e-003**	**1.6800e-003**	**0.0000**	**5.2342**	**5.2342**	**3.4000e-004**	**0.0000**	**5.2427**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.2400e-003	4.5700e-003	0.0504	1.4000e-004	0.0151	1.1000e-004	0.0152	4.0100e-003	1.0000e-004	4.1100e-003	0.0000	12.9491	12.9491	3.5000e-004	0.0000	12.9578
Total	**7.2400e-003**	**4.5700e-003**	**0.0504**	**1.4000e-004**	**0.0151**	**1.1000e-004**	**0.0152**	**4.0100e-003**	**1.0000e-004**	**4.1100e-003**	**0.0000**	**12.9491**	**12.9491**	**3.5000e-004**	**0.0000**	**12.9578**

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

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

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Manufacturing	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Refrigerated Warehouse-Rail	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Manufacturing	0.516452	0.033212	0.173817	0.123150	0.022816	0.005352	0.027555	0.088301	0.001837	0.001119	0.004633	0.000845	0.000911
Other Asphalt Surfaces	0.516452	0.033212	0.173817	0.123150	0.022816	0.005352	0.027555	0.088301	0.001837	0.001119	0.004633	0.000845	0.000911
Other Non-Asphalt Surfaces	0.516452	0.033212	0.173817	0.123150	0.022816	0.005352	0.027555	0.088301	0.001837	0.001119	0.004633	0.000845	0.000911
Refrigerated Warehouse-Rail	0.516452	0.033212	0.173817	0.123150	0.022816	0.005352	0.027555	0.088301	0.001837	0.001119	0.004633	0.000845	0.000911

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

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					
Manufacturing	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
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
Refrigerated Warehouse-Rail	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					
Manufacturing	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

Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
Refrigerated Warehouse-Rail	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Manufacturing	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

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

Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.8487	9.0000e-005	9.9800e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0194	0.0194	5.0000e-005	0.0000	0.0207
Unmitigated	0.8487	9.0000e-005	9.9800e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0194	0.0194	5.0000e-005	0.0000	0.0207

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1401					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7077					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.3000e-004	9.0000e-005	9.9800e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0194	0.0194	5.0000e-005	0.0000	0.0207
Total	**0.8487**	**9.0000e-005**	**9.9800e-003**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0194**	**0.0194**	**5.0000e-005**	**0.0000**	**0.0207**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1401					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7077					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.3000e-004	9.0000e-005	9.9800e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0194	0.0194	5.0000e-005	0.0000	0.0207
Total	**0.8487**	**9.0000e-005**	**9.9800e-003**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0194**	**0.0194**	**5.0000e-005**	**0.0000**	**0.0207**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	90.8436	3.4328	0.0824	201.2275
Unmitigated	90.8436	3.4328	0.0824	201.2275

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Manufacturing	105.12 / 0	90.8436	3.4328	0.0824	201.2275
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**90.8436**	**3.4328**	**0.0824**	**201.2275**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Manufacturing	105.12 / 0	90.8436	3.4328	0.0824	201.2275
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**90.8436**	**3.4328**	**0.0824**	**201.2275**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	45.8049	2.7070	0.0000	113.4797
Unmitigated	45.8049	2.7070	0.0000	113.4797

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Manufacturing	225.65	45.8049	2.7070	0.0000	113.4797
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**45.8049**	**2.7070**	**0.0000**	**113.4797**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			

Manufacturing	225.65	45.8049	2.7070	0.0000	113.4797
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**45.8049**	**2.7070**	**0.0000**	**113.4797**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B.2
EMFAC OUTPUT FILES

Source: EMFAC2017 (v1.0.3) Emissions Inventory
Region Type: County
Region: Stanislaus
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Y	Vehicle Ca	Model Yea	Speed	Fuel	Population	VMT	Trips	NOx_RUN	NOx_IDLE	NOx_STRE	NOx_TOTE	PM2.5_RU	PM2.5_IDI	PM2.5_ST	PM2.5_TO	PM2.5_PN	PM2.5_PN	PM2.5_TO	PM10_RU	PM10_IDL	PM10_STF	PM10_TO	PM10_PM	PM10_PM	PM10_TO	CO2_RUN	CO2_IDLE	CO2_STRE	CO2_TOTE	CH4_RUN	CH4_IDLE	CH4_STRE	CH4_TOTE	N2O_RUN	N2O_IDLE	N2O_STRE	N2O_TOTE	ROG_RUN	ROG_IDLE	ROG_STRE	ROG_TOTE	ROG_DIUF	ROG_HOT	ROG_RUN	ROG_REST	ROG_TOTA	TOG_RUN	TOG_IDLE	TOG_STRE	TOG_TOTE	TOG_DIUF	TOG_HOT	TOG_RUN	TOG_REST	TOG_TOTA	CO_RUNE	CO_IDLEX	CO_STREX	CO_TOTEX	SOx_RUNE	SOx_IDLEX	SOx_STRE	SOx_TOTE	Fuel Consumption
Stanislaus	2020	HHDT	Aggregate	Aggregate	Gasoline	1.26657	78.088	25.3416	0.0009	0	0.0001	0.001	2.3E-07	0	6E-08	2.9E-07	4.3E-07	2.3E-06	3E-06	2.5E-07	0	6.5E-08	3.2E-07	1.7E-06	5.3E-06	7.4E-06	0.17507	0	0.00144	0.1765	1.3E-05	0	1.1E-08	1.3E-05	2.1E-05	0	1.6E-06	2.3E-05	7.8E-05	0	5.7E-08	7.8E-05	3.1E-07	9.5E-06	7.5E-05	1.6E-07	0.00016	0.00011	0	6.2E-08	0.00011	3.1E-07	9.5E-06	7.5E-05	1.6E-07	0.0002	0.00428	0	0.0002	0.00448	1.7E-06	0	1.4E-08	1.7E-06	0.01863
Stanislaus	2020	HHDT	Aggregate	Aggregate	Diesel	6572.22	894343	75243.8	4.01426	0.53926	0.14963	4.70315	0.06736	0.00118	0	0.06854	0.00878	0.0258	0.10312	0.0704	0.00124	0	0.07164	0.0351	0.0602	0.16694	1452.36	100.926	0	1553.29	0.00649	0.00198	0	0.00847	0.22829	0.01586	0	0.24416	0.1397	0.0427	0	0.18241	0	0	0	0	0.18241	0.15904	0.04861	0	0.20766	0	0	0	0	0.20766	0.51683	0.52394	0	1.04078	0.01372	0.00095	0	0.01467	138.434
Stanislaus	2020	HHDT	Aggregate	Aggregate	Natural G	20.5914	839.413	80.3063	0.00766	0.00093	0	0.00859	1.5E-05	4.3E-06	0	1.9E-05	8.3E-06	2.4E-05	5.2E-05	1.6E-05	4.5E-06	0	2E-05	3.3E-05	5.7E-05	0.00011	3.06027	0.09841	0	3.15868	0.00536	4.1E-05	0	0.0054	0.00062	2E-05	0	0.00064	0.00069	4.8E-06	0	0.00069	0	0	0	0	0.00069	0.00616	4.7E-05	0	0.00621	0	0	0	0	0.00621	0.00756	0.00048	0	0.00803	0	0	0	0	0.3651
Stanislaus	2020	LDA	Aggregate	Aggregate	Gasoline	209075	8134874	975930	0.49926	0	0.25374	0.753	0.01386	0	0.00209	0.01595	0.01793	0.14123	0.17512	0.01507	0	0.00227	0.01734	0.07174	0.32954	0.41863	2567.12	0	63.5892	2630.71	0.03308	0	0.07108	0.10416	0.05109	0	0.03141	0.08251	0.13351	0	0.33671	0.47023	0.08817	0.14857	0.28447	0.06376	1.0552	0.19471	0	0.36865	0.56336	0.08817	0.14857	0.28447	0.06376	1.14834	7.46117	0	2.63592	10.0971	0.0254	0	0.00063	0.02603	277.68
Stanislaus	2020	LDA	Aggregate	Aggregate	Diesel	1625.77	66961.5	7650.67	0.00939	0	0	0.00939	0.00072	0	0	0.00072	0.00015	0.00116	0.00203	0.00075	0	0	0.00075	0.00059	0.00271	0.00405	16.0537	0	0	16.0537	7.6E-05	0	0	7.6E-05	0.00252	0	0	0.00252	0.00163	0	0	0.00163	0	0	0	0	0.00163	0.00185	0	0	0.00185	0	0	0	0	0.00185	0.022	0	0	0.022	0.00015	0	0	0.00015	1.43076
Stanislaus	2020	LDA	Aggregate	Aggregate	Electricity	2237.61	89672.9	11262.2	0	0	0	0	0	0	0	0	0.0002	0.00156	0.00175	0	0	0	0	0.00079	0.00363	0.00442	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.7E-05	6.1E-05	0	2.2E-05	0.00015	0	0	0	0	6.7E-05	6.1E-05	0	2.2E-05	0.00015	0	0	0	0	0	0	0	0	0
Stanislaus	2020	LDT1	Aggregate	Aggregate	Gasoline	22842.1	756220	101527	0.15242	0	0.04322	0.19564	0.00212	0	0.00035	0.00248	0.00167	0.01313	0.01727	0.00231	0	0.00039	0.00269	0.00667	0.03063	0.04	281.575	0	7.95653	289.532	0.00889	0	0.0125	0.02139	0.01054	0	0.00395	0.01448	0.04052	0	0.06783	0.10835	0.02786	0.039	0.13263	0.01774	0.32558	0.05907	0	0.07427	0.13333	0.02786	0.039	0.13263	0.01774	0.35057	1.64355	0	0.31476	1.95831	0.00279	0	7.9E-05	0.00287	30.561
Stanislaus	2020	LDT1	Aggregate	Aggregate	Diesel	23.8583	394.329	80.5981	0.00053	0	0	0.00053	6.7E-05	0	0	6.7E-05	8.7E-07	6.8E-06	7.5E-05	7E-05	0	0	7E-05	3.5E-06	1.6E-05	9E-05	0.19339	0	0	0.19339	4.2E-06	0	0	4.2E-06	3E-05	0	0	3E-05	9.1E-05	0	0	9.1E-05	0	0	0	0	9.1E-05	0.0001	0	0	0.0001	0	0	0	0	0.0001	0.00055	0	0	0.00055	1.8E-06	0	0	1.8E-06	0.01724
Stanislaus	2020	LDT1	Aggregate	Aggregate	Electricity	34.0659	1443.16	174.275	0	0	0	0	0	0	0	0	3.2E-06	2.5E-05	2.8E-05	0	0	0	0	1.3E-05	5.8E-05	7.1E-05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1E-06	9.4E-07	0	3.3E-07	2.3E-06	0	0	0	0	1E-06	9.4E-07	0	3.3E-07	2.3E-06	0	0	0	0	0	0	0	0	0
Stanislaus	2020	LDT2	Aggregate	Aggregate	Gasoline	72139.4	2560631	330983	0.37587	0	0.15146	0.52734	0.00462	0	0.00073	0.00534	0.00565	0.04446	0.05544	0.00502	0	0.00079	0.00581	0.02258	0.10373	0.13212	1047.44	0	28.596	1076.04	0.01765	0	0.03375	0.0514	0.02741	0	0.01444	0.04186	0.07557	0	0.16813	0.2437	0.04569	0.06916	0.2232	0.03424	0.61599	0.11017	0	0.18408	0.29425	0.04569	0.06916	0.2232	0.03424	0.66654	3.61352	0	1.17089	4.78441	0.01037	0	0.00028	0.01065	113.579
Stanislaus	2020	LDT2	Aggregate	Aggregate	Diesel	270.173	11637.1	1319.92	0.00086	0	0	0.00086	0.00011	0	0	0.00011	2.6E-05	0.0002	0.00034	0.00011	0	0	0.00011	0.0001	0.00047	0.00069	3.77881	0	0	3.77881	1.4E-05	0	0	1.4E-05	0.00059	0	0	0.00059	0.0003	0	0	0.0003	0	0	0	0	0.0003	0.00034	0	0	0.00034	0	0	0	0	0.00034	0.0022	0	0	0.0022	3.6E-05	0	0	3.6E-05	0.33678
Stanislaus	2020	LDT2	Aggregate	Aggregate	Electricity	280.095	9624.12	1423.97	0	0	0	0	0	0	0	0	2.1E-05	0.00017	0.00019	0	0	0	0	8.5E-05	0.00039	0.00047	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8.4E-06	7.7E-06	0	2.7E-06	1.9E-05	0	0	0	0	8.4E-06	7.7E-06	0	2.7E-06	1.9E-05	0	0	0	0	0	0	0	0	0
Stanislaus	2020	LHDT1	Aggregate	Aggregate	Gasoline	7523.74	250215	112092	0.1005	0.00034	0.07232	0.17316	0.00066	0	5.8E-05	0.00071	0.00055	0.00904	0.0103	0.00071	0	6.3E-05	0.00078	0.00221	0.02108	0.02407	286.049	1.02657	2.40543	289.481	0.00473	0.00104	0.00388	0.00965	0.0058	2.6E-05	0.00533	0.01116	0.02411	0.00389	0.02003	0.04803	0.00073	0.02076	0.13687	0.00031	0.2067	0.03483	0.00568	0.02192	0.06244	0.00073	0.02076	0.13687	0.00031	0.22111	0.44269	0.03099	0.23633	0.71001	0.00283	1E-05	2.4E-05	0.00286	30.5557
Stanislaus	2020	LHDT1	Aggregate	Aggregate	Diesel	9311.53	320888	117127	1.18577	0.02554	0	1.21131	0.01248	0.00027	0	0.01276	0.00106	0.01159	0.02541	0.01305	0.00029	0	0.01334	0.00424	0.02704	0.04462	205.774	1.44235	0	207.216	0.00332	5.2E-05	0	0.00337	0.03234	0.00023	0	0.03257	0.07138	0.00113	0	0.0725	0	0	0	0	0.0725	0.08126	0.00128	0	0.08254	0	0	0	0	0.08254	0.33443	0.00934	0	0.34377	0.00195	1.4E-05	0	0.00196	18.4678
Stanislaus	2020	LHDT2	Aggregate	Aggregate	Gasoline	1140.5	40041.4	16991.7	0.0127	5.2E-05	0.01042	0.02318	8.9E-05	0	6.7E-06	9.5E-05	8.8E-05	0.00169	0.00187	9.6E-05	0	7.3E-06	0.0001	0.00035	0.00394	0.00439	52.2519	0.17891	0.4104	52.8412	0.00048	0.00016	0.00052	0.00116	0.00081	4E-06	0.00079	0.0016	0.0022	0.00059	0.0026	0.00539	7.9E-05	0.00241	0.01621	3.4E-05	0.02412	0.00321	0.00086	0.00284	0.00691	7.9E-05	0.00241	0.01621	3.4E-05	0.02564	0.0402	0.00472	0.03336	0.07828	0.00052	1.8E-06	4.1E-06	0.00052	5.57756
Stanislaus	2020	LHDT2	Aggregate	Aggregate	Diesel	2729.63	98526.4	34335.3	0.26992	0.00742	0	0.27734	0.0032	8E-05	0	0.00328	0.00033	0.00415	0.00776	0.00335	8.3E-05	0	0.00343	0.0013	0.00969	0.01442	70.5192	0.67543	0	71.1946	0.0009	1.5E-05	0	0.00091	0.01108	0.00011	0	0.01119	0.01931	0.00033	0	0.01964	0	0	0	0	0.01964	0.02199	0.00038	0	0.02236	0	0	0	0	0.02236	0.08914	0.00274	0	0.09187	0.00067	6.4E-06	0	0.00067	6.34508
Stanislaus	2020	MCY	Aggregate	Aggregate	Gasoline	11558.8	77321.5	23117.6	0.10112	0	0.00681	0.10793	0.00016	0	8.2E-05	0.00024	8.5E-05	0.00043	0.00075	0.00017	0	8.7E-05	0.00025	0.00034	0.001	0.0016	18.4539	0	1.62261	20.0766	0.03111	0	0.00659	0.0377	0.00576	0	0.00038	0.00614	0.21878	0	0.05107	0.26985	0.0382	0.02516	0.06243	0.02006	0.41569	0.26452	0	0.05553	0.32005	0.0382	0.02516	0.06243	0.02006	0.46589	1.95397	0	0.2252	2.17916	0.00018	0	1.6E-05	0.0002	2.11914
Stanislaus	2020	MDV	Aggregate	Aggregate	Gasoline	77482.6	2522842	349072	0.44189	0	0.20023	0.64211	0.0044	0	0.00081	0.00521	0.00556	0.0438	0.05457	0.00479	0	0.00088	0.00566	0.02225	0.1022	0.13011	1263.58	0	37.4136	1300.99	0.02139	0	0.04439	0.06578	0.0317	0	0.017	0.0487	0.09779	0	0.23398	0.33177	0.05289	0.08092	0.24536	0.04201	0.75295	0.13851	0	0.25615	0.39466	0.05289	0.08092	0.24536	0.04201	0.81584	4.01876	0	1.54443	5.5632	0.0125	0	0.00037	0.01287	137.324
Stanislaus	2020	MDV	Aggregate	Aggregate	Diesel	1245.81	51961.4	6011.3	0.00478	0	0	0.00478	0.0004	0	0	0.0004	0.00011	0.0009	0.00141	0.00041	0	0	0.00041	0.00046	0.0021	0.00298	23.0437	0	0	23.0437	4.8E-05	0	0	4.8E-05	0.00362	0	0	0.00362	0.00104	0	0	0.00104	0	0	0	0	0.00104	0.00119	0	0	0.00119	0	0	0	0	0.00119	0.01649	0	0	0.01649	0.00022	0	0	0.00022	2.05372
Stanislaus	2020	MDV	Aggregate	Aggregate	Electricity	95.7492	3251.61	482.672	0	0	0	0	0	0	0	0	7.2E-06	5.6E-05	6.4E-05	0	0	0	0	2.9E-05	0.00013	0.00016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.9E-06	2.6E-06	0	9.3E-07	6.4E-06	0	0	0	0	2.9E-06	2.6E-06	0	9.3E-07	6.4E-06	0	0	0	0	0	0	0	0	0
Stanislaus	2020	MH	Aggregate	Aggregate	Gasoline	1509.87	12351.7	151.047	0.00972	0	5.4E-05	0.00977	2.8E-05	0	7.1E-08	2.8E-05	4.1E-05	0.00076	0.00083	3E-05	0	7.7E-08	3E-05	0.00016	0.00177	0.00197	25.1981	0	0.00457	25.2027	0.00036	0	5.8E-06	0.00036	0.00052	0	5.1E-06	0.00053	0.00166	0	2.7E-05	0.00168	0.00035	2.2E-05	0.00051	9.5E-05	0.00266	0.0024	0	2.9E-05	0.00243	0.00035	2.2E-05	0.00051	9.5E-05	0.00341	0.0442	0	0.00058	0.04478	0.00025	0	4.5E-08	0.00025	2.66022
Stanislaus	2020	MH	Aggregate	Aggregate	Diesel	581.18	4955.86	58.118	0.03359	0	0	0.03359	0.00082	0	0	0.00082	2.2E-05	0.00031	0.00115	0.00086	0	0	0.00086	8.7E-05	0.00071	0.00166	5.82278	0	0	5.82278	3.9E-05	0	0	3.9E-05	0.00092	0	0	0.00092	0.00084	0	0	0.00084	0	0	0	0	0.00084	0.00095	0	0	0.00095	0	0	0	0	0.00095	0.00316	0	0	0.00316	5.5E-05	0	0	5.5E-05	0.51894
Stanislaus	2020	MHDT	Aggregate	Aggregate	Gasoline	543.176	25669.2	10867.9	0.02158	5.2E-05	0.0045	0.02613	4.2E-05	0	7.6E-06	4.9E-05	8.5E-05	0.00158	0.00171	4.5E-05	0	8.2E-06	5.3E-05	0.00034	0.00369	0.00408	51.42	0.32977	0.49139	52.2411	0.00078	0.00015	0.0005	0.00143	0.00097	4E-06	0.00032	0.00129	0.00409	0.0006	0.00281	0.00749	5.6E-05	0.00157	0.00887	2.3E-05	0.01802	0.00596	0.00087	0.00308	0.00991	5.6E-05	0.00157	0.00887	2.3E-05	0.02043	0.09278	0.00893	0.06483	0.16653	0.00051	3.3E-06	4.9E-06	0.00052	5.51422
Stanislaus	2020	MHDT	Aggregate	Aggregate	Diesel	5487.64	361068	50460.8	1.53276	0.05688	0.06921	1.65885	0.04006	0.0002	0	0.04025	0.00119	0.02223	0.06368	0.04187	0.00021	0	0.04207	0.00478	0.05188	0.09873	444.559	5.50128	0	450.06	0.00499	3.9E-05	0	0.00503	0.06988	0.00086	0	0.07074	0.10737	0.00083	0	0.1082	0	0	0	0	0.1082	0.12223	0.00094	0	0.12317	0	0	0	0	0.12317	0.27932	0.01476	0	0.29408	0.0042	5.2E-05	0	0.00425	40.1107
Stanislaus	2020	OBUS	Aggregate	Aggregate	Gasoline	175.021	8163.35	3501.82	0.00711	1.3E-05	0.00126	0.00838	8.3E-06	0	9.4E-07	9.2E-06	2.7E-05	0.0005	0.00054	9E-06	0	1E-06	1E-05	0.00011	0.00117	0.00129	16.6076	0.07468	0.10821	16.7905	0.00021	3.7E-05	0.00013	0.00038	0.00032	1E-06	9.5E-05	0.00042	0.00105	0.00014	0.0007	0.00189	1.3E-05	0.00013	0.00166	4.4E-06	0.0037	0.00153	0.00021	0.00077	0.00251	1.3E-05	0.00013	0.00166	4.4E-06	0.00432	0.02369	0.00111	0.01511	0.03991	0.00016	7.4E-07	1.1E-06	0.00017	1.77229
Stanislaus	2020	OBUS	Aggregate	Aggregate	Diesel	240.006	15987.9	2189.96	0.07559	0.00418	0.00367	0.08344	0.0018	2E-05	0	0.00182	5.3E-05	0.00098	0.00286	0.00188	2.1E-05	0	0.0019	0.00021	0.0023	0.00441	21.5047	0.49732	0	22.002	0.00023	1E-05	0	0.00024	0.00338	7.8E-05	0	0.00346	0.00502	0.00022	0	0.00524	0	0	0	0	0.00524	0.00571	0.00025	0	0.00596	0	0	0	0	0.00596	0.01413	0.00225	0	0.01639	0.0002	4.7E-06	0	0.00021	1.96089
Stanislaus	2020	SBUS	Aggregate	Aggregate	Gasoline	136.45	6523.1	545.801	0.01048	0.00014	0.00035	0.01097	9.5E-06	0	3.3E-07	9.8E-06	1.4E-05	0.0023	0.00232	1E-05	0	3.6E-07	1.1E-05	5.8E-05	0.00536	0.00542	6.56729	0.4054	0.03534	7.00802	0.00033	0.00035	4.8E-05	0.00073	0.00046	1.1E-05	2.8E-05	0.0005	0.00166	0.0016	0.00029	0.00355	7.2E-06	6.9E-05	0.00041	2.6E-06	0.00403	0.00242	0.00233	0.00032	0.00507	7.2E-06	6.9E-05	0.00041	2.6E-06	0.00555	0.039	0.01234	0.00821	0.05955	6.5E-05	4E-06	3.5E-07	6.9E-05	0.73972
Stanislaus	2020	SBUS	Aggregate	Aggregate	Diesel	505.803	15920.2	5836.9	0.12387	0.02573	0.00351	0.15311	0.00078	2.9E-05	0	0.00081	5.3E-05	0.0056	0.00647	0.00082	3.1E-05	0	0.00085	0.00021	0.01307	0.01413	20.7822	2.14253	0	22.9248	9.1E-05	7.7E-06	0	9.9E-05	0.00327	0.00034	0	0.0036	0.00197	0.00017	0	0.00213	0	0	0	0	0.00213	0.00224	0.00019	0	0.00243	0	0	0	0	0.00243	0.00518	0.00277	0	0.00795	0.0002	2E-05	0	0.00022	2.04313
Stanislaus	2020	UBUS	Aggregate	Aggregate	Gasoline	25.4556	2050.9	101.822	0.00051	0	8.5E-05	0.00059	4.1E-06	0	7.4E-08	4.1E-06	6.3E-06	0.00012	0.00013	4.4E-06	0	8.1E-08	4.5E-06	2.5E-05	0.00027	0.0003	4.47865	0	0.00979	4.48844	1.4E-05	0	1.1E-05	2.5E-05	4.6E-05	0	7.7E-06	5.3E-05	4.6E-05	0	4.8E-05	9.3E-05	3.1E-07	2.4E-06	1.1E-05	1.5E-07	0.00011	6.7E-05	0	5.2E-05	0.00012	3.1E-07	2.4E-06	1.1E-05	1.5E-07	0.00013	0.00069	0	0.00086	0.00155	4.4E-05	0	9.7E-08	4.4E-05	0.47377
Stanislaus	2020	UBUS	Aggregate	Aggregate	Diesel	49.9352	3739.52	199.741	0.01578	0	0	0.01578	3.3E-05	0	0	3.3E-05	3.3E-05	0.00013	0.00019	3.4E-05	0	0	3.4E-05	0.00013	0.0003	0.00047	7.35542	0	0	7.35542	0.00095	0	0	0.00095	0.00116	0	0	0.00116	2.1E-05	0	0	2.1E-05	0	0	0	0	2.1E-05	0.00097	0	0	0.00097	0	0	0	0	0.00097	0.00171	0	0	0.00171	7E-05	0	0	7E-05	0.65554
Stanislaus	2020	UBUS	Aggregate	Aggregate	Electricity	0.00115	0.02811	0.00462	0	0	0	0	0	0	0	0	2.8E-10	8.2E-10	1.1E-09	0	0	0	0	1.1E-09	1.9E-09	3E-09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stanislaus	2020	UBUS	Aggregate	Aggregate	Natural G	58.8191	5082.37	235.277	0.00223	0	0	0.00223	1.6E-05	0	0	1.6E-05	3.4E-05	0.00023	0.00028	1.7E-05	0	0	1.7E-05	0.00014	0.00053	0.00068	9.47882	0	0	9.47882	0.02722	0	0	0.02722	0.00193	0	0	0.00193	0.00041	0	0	0.00041	0	0	0	0	0.00041	0.02781	0	0	0.02781	0	0	0	0	0.02781	0.20561	0	0	0.20561	0	0	0	0	1.09561

Source: EMFAC2017 (v1.0.3) Emissions Inventory
Region Type: County
Region: Stanislaus
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Y	Vehicle Ca	Model Yea	Speed	Fuel	Population	VMT	Trips	NOx_RUNI	NOx_IDLE	NOx_STRE	NOx_TOTE	PM2.5_RU	PM2.5_IDI
Stanislaus	2022	HHDT	Aggregate	Aggregate	Gasoline	0.78065	100.907	15.6193	0.00043	0	2.6E-07	0.00043	1.6E-07	0
Stanislaus	2022	HHDT	Aggregate	Aggregate	Diesel	7017.65	943279	80371.5	3.1453	0.56677	0.18802	3.90008	0.03434	0.00032
Stanislaus	2022	HHDT	Aggregate	Aggregate	Natural Ga	21.6703	883.496	84.5141	0.00661	0.00087	0	0.00749	1.3E-05	3.7E-06
Stanislaus	2022	LDA	Aggregate	Aggregate	Gasoline	222443	8582574	1041466	0.38503	0	0.23267	0.6177	0.01367	0
Stanislaus	2022	LDA	Aggregate	Aggregate	Diesel	1953.3	79989.7	9251.59	0.00709	0	0	0.00709	0.00059	0
Stanislaus	2022	LDA	Aggregate	Aggregate	Electricity	3528.92	146906	17650.5	0	0	0	0	0	0
Stanislaus	2022	LDT1	Aggregate	Aggregate	Gasoline	23332.2	775490	104493	0.1132	0	0.03737	0.15057	0.00184	0
Stanislaus	2022	LDT1	Aggregate	Aggregate	Diesel	19.971	324.857	66.6865	0.00039	0	0	0.00039	5E-05	0
Stanislaus	2022	LDT1	Aggregate	Aggregate	Electricity	104.394	4645.59	533.133	0	0	0	0	0	0
Stanislaus	2022	LDT2	Aggregate	Aggregate	Gasoline	73946.8	2591123	339752	0.28143	0	0.12917	0.41059	0.0043	0
Stanislaus	2022	LDT2	Aggregate	Aggregate	Diesel	358.233	15012.6	1751	0.00085	0	0	0.00085	0.0001	0
Stanislaus	2022	LDT2	Aggregate	Aggregate	Electricity	544.126	18063.8	2752.31	0	0	0	0	0	0
Stanislaus	2022	LHDT1	Aggregate	Aggregate	Gasoline	7038.47	229789	104863	0.07842	0.00031	0.0659	0.14463	0.00057	0
Stanislaus	2022	LHDT1	Aggregate	Aggregate	Diesel	8862.11	291728	111474	0.96298	0.0235	0	0.98648	0.0107	0.00026
Stanislaus	2022	LHDT2	Aggregate	Aggregate	Gasoline	1090.55	36825.8	16247.5	0.01013	4.8E-05	0.00976	0.01993	7.8E-05	0
Stanislaus	2022	LHDT2	Aggregate	Aggregate	Diesel	2687.98	92570	33811.4	0.22259	0.00699	0	0.22958	0.0029	7.8E-05
Stanislaus	2022	MCY	Aggregate	Aggregate	Gasoline	11571.5	74392.9	23143	0.09661	0	0.00683	0.10344	0.00016	0
Stanislaus	2022	MDV	Aggregate	Aggregate	Gasoline	74475.2	2354195	334051	0.31332	0	0.16448	0.4778	0.00384	0
Stanislaus	2022	MDV	Aggregate	Aggregate	Diesel	1412.42	55910.3	6759.59	0.00398	0	0	0.00398	0.00036	0
Stanislaus	2022	MDV	Aggregate	Aggregate	Electricity	285.299	9668.14	1450.81	0	0	0	0	0	0
Stanislaus	2022	MH	Aggregate	Aggregate	Gasoline	1358.75	11124.8	135.93	0.00722	0	5E-05	0.00727	2.2E-05	0
Stanislaus	2022	MH	Aggregate	Aggregate	Diesel	574.977	4725.19	57.4977	0.03026	0	0	0.03026	0.00073	0
Stanislaus	2022	MHDT	Aggregate	Aggregate	Gasoline	525.816	25709.7	10520.5	0.01466	5.1E-05	0.00425	0.01897	3.7E-05	0
Stanislaus	2022	MHDT	Aggregate	Aggregate	Diesel	5508.2	363039	50412.1	0.95561	0.04404	0.09328	1.09293	0.01564	0.0001
Stanislaus	2022	OBUS	Aggregate	Aggregate	Gasoline	168.551	7466.65	3372.37	0.00552	1.2E-05	0.00119	0.00673	8.1E-06	0
Stanislaus	2022	OBUS	Aggregate	Aggregate	Diesel	230.201	15534.1	2104.54	0.04532	0.00265	0.00458	0.05256	0.00061	5.1E-06
Stanislaus	2022	SBUS	Aggregate	Aggregate	Gasoline	141.937	6658.72	567.748	0.01109	0.00014	0.00038	0.01162	9.3E-06	0
Stanislaus	2022	SBUS	Aggregate	Aggregate	Diesel	499.545	15593.9	5764.67	0.11676	0.0249	0.00384	0.1455	0.00074	2.6E-05
Stanislaus	2022	UBUS	Aggregate	Aggregate	Gasoline	26.1225	2104.63	104.49	0.0006	0	9.3E-05	0.00069	4.2E-06	0
Stanislaus	2022	UBUS	Aggregate	Aggregate	Diesel	48.8996	3554.92	195.598	0.01326	0	0	0.01326	3E-05	0
Stanislaus	2022	UBUS	Aggregate	Aggregate	Electricity	0.00115	0.02811	0.00462	0	0	0	0	0	0
Stanislaus	2022	UBUS	Aggregate	Aggregate	Natural Ga	62.7041	5498.09	250.816	0.00245	0	0	0.00245	1.8E-05	0

Vehicle Ca	Fuel	PM2.5_ST	PM2.5_TO	PM2.5_PM	PM2.5_PM	PM2.5_TO	PM10_RU	PM10_IDL	PM10_STF	PM10_TO	PM10_PM	PM10_PM	PM10_TO	CO2_RUNI
HHDT	Gasoline	2.3E-08	1.8E-07	5.6E-07	2.9E-06	3.7E-06	1.7E-07	0	2.5E-08	2E-07	2.2E-06	6.9E-06	9.3E-06	0.20763
HHDT	Diesel	0	0.03466	0.00924	0.02718	0.07107	0.03589	0.00033	0	0.03622	0.03697	0.06341	0.1366	1460.18
HHDT	Natural Ga	0	1.7E-05	8.8E-06	2.6E-05	5.1E-05	1.4E-05	3.9E-06	0	1.8E-05	3.5E-05	6E-05	0.00011	3.14842
LDA	Gasoline	0.00206	0.01573	0.01892	0.14901	0.18366	0.01487	0	0.00224	0.01711	0.07569	0.34768	0.44047	2570.19
LDA	Diesel	0	0.00059	0.00018	0.00139	0.00215	0.00062	0	0	0.00062	0.00071	0.00324	0.00456	18.2344
LDA	Electricity	0	0	0.00032	0.00255	0.00287	0	0	0	0	0.0013	0.00595	0.00725	0
LDT1	Gasoline	0.00031	0.00215	0.00171	0.01346	0.01732	0.002	0	0.00034	0.00233	0.00684	0.03142	0.04059	274.338
LDT1	Diesel	0	5E-05	7.2E-07	5.6E-06	5.6E-05	5.2E-05	0	0	5.2E-05	2.9E-06	1.3E-05	6.8E-05	0.15726
LDT1	Electricity	0	0	1E-05	8.1E-05	9.1E-05	0	0	0	0	4.1E-05	0.00019	0.00023	0
LDT2	Gasoline	0.00068	0.00498	0.00571	0.04499	0.05568	0.00467	0	0.00074	0.00541	0.02285	0.10497	0.13323	992.099
LDT2	Diesel	0	0.0001	3.3E-05	0.00026	0.0004	0.00011	0	0	0.00011	0.00013	0.00061	0.00085	4.6055
LDT2	Electricity	0	0	4E-05	0.00031	0.00035	0	0	0	0	0.00016	0.00073	0.00089	0
LHDT1	Gasoline	4.8E-05	0.00062	0.00051	0.0083	0.00942	0.00062	0	5.2E-05	0.00067	0.00203	0.01936	0.02206	258.938
LHDT1	Diesel	0	0.01096	0.00096	0.01053	0.02246	0.01119	0.00027	0	0.01146	0.00386	0.02458	0.0399	184.474
LHDT2	Gasoline	6E-06	8.4E-05	8.1E-05	0.00155	0.00172	8.5E-05	0	6.5E-06	9.2E-05	0.00032	0.00362	0.00404	47.4623
LHDT2	Diesel	0	0.00298	0.00031	0.0039	0.00718	0.00303	8.2E-05	0	0.00311	0.00122	0.0091	0.01343	65.1966
MCY	Gasoline	7.7E-05	0.00023	8.2E-05	0.00041	0.00073	0.00017	0	8.1E-05	0.00025	0.00033	0.00096	0.00154	17.7478
MDV	Gasoline	0.0007	0.00454	0.00519	0.04087	0.0506	0.00418	0	0.00076	0.00494	0.02076	0.09537	0.12107	1122.44
MDV	Diesel	0	0.00036	0.00012	0.00097	0.00145	0.00037	0	0	0.00037	0.00049	0.00226	0.00313	23.6994
MDV	Electricity	0	0	2.1E-05	0.00017	0.00019	0	0	0	0	8.5E-05	0.00039	0.00048	0
MH	Gasoline	5.6E-08	2.2E-05	3.7E-05	0.00069	0.00074	2.4E-05	0	6.1E-08	2.4E-05	0.00015	0.0016	0.00177	22.2399
MH	Diesel	0	0.00073	2.1E-05	0.00029	0.00104	0.00076	0	0	0.00076	8.3E-05	0.00068	0.00152	5.47543
MHDT	Gasoline	6E-06	4.3E-05	8.5E-05	0.00158	0.00171	4.1E-05	0	6.5E-06	4.7E-05	0.00034	0.00369	0.00408	50.0621
MHDT	Diesel	0	0.01574	0.0012	0.02235	0.03929	0.01634	0.00011	0	0.01645	0.0048	0.05216	0.07341	426.576
OBUS	Gasoline	9.3E-07	9.1E-06	2.5E-05	0.00046	0.00049	8.8E-06	0	1E-06	9.8E-06	9.9E-05	0.00107	0.00118	14.8458
OBUS	Diesel	0	0.00062	5.1E-05	0.00096	0.00163	0.00064	5.3E-06	0	0.00065	0.00021	0.00223	0.00308	20.3505
SBUS	Gasoline	3.4E-07	9.6E-06	1.5E-05	0.00234	0.00237	1E-05	0	3.7E-07	1E-05	5.9E-05	0.00547	0.00554	6.64367
SBUS	Diesel	0	0.00076	5.2E-05	0.00549	0.0063	0.00077	2.7E-05	0	0.0008	0.00021	0.0128	0.01381	20.1808
UBUS	Gasoline	7.7E-08	4.3E-06	6.5E-06	0.00012	0.00013	4.6E-06	0	8.4E-08	4.6E-06	2.6E-05	0.00028	0.00031	4.58244
UBUS	Diesel	0	3E-05	3.1E-05	0.00012	0.00018	3.1E-05	0	0	3.1E-05	0.00012	0.00029	0.00044	6.93255
UBUS	Electricity	0	0	2.8E-10	8.2E-10	1.1E-09	0	0	0	0	1.1E-09	1.9E-09	3E-09	0
UBUS	Natural Ga	0	1.8E-05	3.7E-05	0.00024	0.0003	1.9E-05	0	0	1.9E-05	0.00015	0.00056	0.00073	10.3744

Vehicle Ca	Fuel	CO2_IDLE	CO2_STRE	CO2_TOTE	CH4_RUNI	CH4_IDLE	CH4_STRE	CH4_TOTE	N2O_RUN	N2O_IDLE	N2O_STRE	N2O_TOTE	ROG_RUN	ROG_IDLE
HHDT	Gasoline	0	0.00092	0.20855	7.4E-06	0	1.1E-08	7.4E-06	1.6E-05	0	1.3E-08	1.6E-05	3.4E-05	0
HHDT	Diesel	109.423	0	1569.61	0.00294	0.00205	0	0.00499	0.22952	0.0172	0	0.24672	0.06334	0.04407
HHDT	Natural Ga	0.10056	0	3.24899	0.00513	4E-05	0	0.00517	0.00064	2.1E-05	0	0.00066	0.0006	4.2E-06
LDA	Gasoline	0	64.2466	2634.44	0.02565	0	0.06367	0.08932	0.04429	0	0.03096	0.07526	0.09841	0
LDA	Diesel	0	0	18.2344	7.1E-05	0	0	7.1E-05	0.00287	0	0	0.00287	0.00152	0
LDA	Electricity	0	0	0	0	0	0	0	0	0	0	0	0	0
LDT1	Gasoline	0	7.75933	282.098	0.00666	0	0.01056	0.01722	0.00832	0	0.00369	0.01201	0.02988	0
LDT1	Diesel	0	0	0.15726	3.1E-06	0	0	3.1E-06	2.5E-05	0	0	2.5E-05	6.7E-05	0
LDT1	Electricity	0	0	0	0	0	0	0	0	0	0	0	0	0
LDT2	Gasoline	0	27.5256	1019.62	0.01394	0	0.02988	0.04382	0.02205	0	0.01328	0.03533	0.0582	0
LDT2	Diesel	0	0	4.6055	1.6E-05	0	0	1.6E-05	0.00072	0	0	0.00072	0.00035	0
LDT2	Electricity	0	0	0	0	0	0	0	0	0	0	0	0	0
LHDT1	Gasoline	0.95187	2.21767	262.108	0.00362	0.00095	0.00329	0.00787	0.00458	2.4E-05	0.0049	0.0095	0.0181	0.00354
LHDT1	Diesel	1.36021	0	185.834	0.00292	5E-05	0	0.00297	0.029	0.00021	0	0.02921	0.06293	0.00107
LHDT2	Gasoline	0.16968	0.3885	48.0205	0.00036	0.00015	0.00046	0.00097	0.00065	3.8E-06	0.00074	0.0014	0.00164	0.00055
LHDT2	Diesel	0.65801	0	65.8546	0.00082	1.5E-05	0	0.00084	0.01025	0.0001	0	0.01035	0.01766	0.00033
MCY	Gasoline	0	1.60845	19.3562	0.02963	0	0.00652	0.03614	0.00551	0	0.00038	0.0059	0.20665	0
MDV	Gasoline	0	34.1784	1156.62	0.01548	0	0.03709	0.05257	0.02406	0	0.0148	0.03885	0.06585	0
MDV	Diesel	0	0	23.6994	4.7E-05	0	0	4.7E-05	0.00373	0	0	0.00373	0.00102	0
MDV	Electricity	0	0	0	0	0	0	0	0	0	0	0	0	0
MH	Gasoline	0	0.00401	22.2439	0.00025	0	5E-06	0.00026	0.00041	0	4.9E-06	0.00041	0.00115	0
MH	Diesel	0	0	5.47543	3.6E-05	0	0	3.6E-05	0.00086	0	0	0.00086	0.00078	0
MHDT	Gasoline	0.31345	0.45778	50.8333	0.0005	0.00015	0.00046	0.00111	0.00071	4.2E-06	0.00032	0.00103	0.00253	0.00058
MHDT	Diesel	5.29849	0	431.874	0.00191	2.9E-05	0	0.00194	0.06705	0.00083	0	0.06788	0.04111	0.00061
OBUS	Gasoline	0.07101	0.10215	15.019	0.00016	3.6E-05	0.00012	0.00032	0.00025	9.8E-07	9.1E-05	0.00035	0.00081	0.00014
OBUS	Diesel	0.46806	0	20.8186	7.6E-05	7E-06	0	8.3E-05	0.0032	7.4E-05	0	0.00327	0.00164	0.00015
SBUS	Gasoline	0.41843	0.03621	7.09831	0.00031	0.00037	5.2E-05	0.00073	0.00047	1.1E-05	3E-05	0.00052	0.00159	0.00166
SBUS	Diesel	2.11363	0	22.2945	8.8E-05	7.3E-06	0	9.6E-05	0.00317	0.00033	0	0.0035	0.0019	0.00016
UBUS	Gasoline	0	0.01002	4.59246	1.4E-05	0	1.2E-05	2.6E-05	5.1E-05	0	8.1E-06	6E-05	4.6E-05	0
UBUS	Diesel	0	0	6.93255	0.00087	0	0	0.00087	0.00109	0	0	0.00109	1.9E-05	0
UBUS	Electricity	0	0	0	0	0	0	0	0	0	0	0	0	0
UBUS	Natural Ga	0	0	10.3744	0.03003	0	0	0.03003	0.00211	0	0	0.00211	0.00046	0

Vehicle Ca	Fuel	ROG_STRE	ROG_TOTE	ROG_DIUF	ROG_HOT	ROG_RUN	ROG_REST	ROG_TOTA	TOG_RUN	TOG_IDLE	TOG_STRE	TOG_TOTE	TOG_DIUF	TOG_HOTS
HHDT	Gasoline	6E-08	3.4E-05	9.1E-08	2.9E-06	1.4E-05	4.4E-08	5.1E-05	4.9E-05	0	6.6E-08	4.9E-05	9.1E-08	2.9E-06
HHDT	Diesel	0	0.10741	0	0	0	0	0.10741	0.07211	0.05017	0	0.12228	0	0
HHDT	Natural Ga	0	0.0006	0	0	0	0	0.0006	0.00583	4.5E-05	0	0.00587	0	0
LDA	Gasoline	0.28973	0.38814	0.07715	0.13358	0.27284	0.05725	0.92897	0.14357	0	0.31722	0.46079	0.07715	0.13358
LDA	Diesel	0	0.00152	0	0	0	0	0.00152	0.00173	0	0	0.00173	0	0
LDA	Electricity	0	0	0.00011	9.5E-05	0	3.4E-05	0.00024	0	0	0	0	0.00011	9.5E-05
LDT1	Gasoline	0.0558	0.08569	0.02392	0.03397	0.11473	0.01566	0.27396	0.04358	0	0.0611	0.10468	0.02392	0.03397
LDT1	Diesel	0	6.7E-05	0	0	0	0	6.7E-05	7.7E-05	0	0	7.7E-05	0	0
LDT1	Electricity	0	0	3.1E-06	2.9E-06	0	1E-06	7E-06	0	0	0	0	3.1E-06	2.9E-06
LDT2	Gasoline	0.14506	0.20327	0.04284	0.06405	0.21057	0.03301	0.55374	0.08489	0	0.15883	0.24372	0.04284	0.06405
LDT2	Diesel	0	0.00035	0	0	0	0	0.00035	0.00039	0	0	0.00039	0	0
LDT2	Electricity	0	0	1.6E-05	1.5E-05	0	5.3E-06	3.6E-05	0	0	0	0	1.6E-05	1.5E-05
LHDT1	Gasoline	0.01681	0.03845	0.00065	0.01851	0.12253	0.00028	0.18042	0.02641	0.00517	0.01841	0.04999	0.00065	0.01851
LHDT1	Diesel	0	0.06401	0	0	0	0	0.06401	0.07165	0.00122	0	0.07287	0	0
LHDT2	Gasoline	0.00229	0.00448	7.3E-05	0.00224	0.0145	3.3E-05	0.02133	0.00239	0.0008	0.00251	0.0057	7.3E-05	0.00224
LHDT2	Diesel	0	0.01798	0	0	0	0	0.01798	0.0201	0.00037	0	0.02047	0	0
MCY	Gasoline	0.05049	0.25714	0.03857	0.02498	0.0584	0.0201	0.39919	0.2518	0	0.05492	0.30671	0.03857	0.02498
MDV	Gasoline	0.19169	0.25753	0.04943	0.07493	0.22903	0.04042	0.65134	0.09595	0	0.20987	0.30582	0.04943	0.07493
MDV	Diesel	0	0.00102	0	0	0	0	0.00102	0.00116	0	0	0.00116	0	0
MDV	Electricity	0	0	8.6E-06	7.8E-06	0	2.8E-06	1.9E-05	0	0	0	0	8.6E-06	7.8E-06
MH	Gasoline	2.2E-05	0.00117	0.00028	1.8E-05	0.00042	7.9E-05	0.00197	0.00167	0	2.4E-05	0.0017	0.00028	1.8E-05
MH	Diesel	0	0.00078	0	0	0	0	0.00078	0.00088	0	0	0.00088	0	0
MHDT	Gasoline	0.00253	0.00564	4.1E-05	0.00125	0.00709	1.7E-05	0.01405	0.00369	0.00085	0.00277	0.00731	4.1E-05	0.00125
MHDT	Diesel	0	0.04173	0	0	0	0	0.04173	0.04681	0.0007	0	0.0475	0	0
OBUS	Gasoline	0.00065	0.00159	1.3E-05	0.00013	0.00169	4.5E-06	0.00344	0.00118	0.0002	0.00071	0.00209	1.3E-05	0.00013
OBUS	Diesel	0	0.00179	0	0	0	0	0.00179	0.00187	0.00017	0	0.00204	0	0
SBUS	Gasoline	0.00032	0.00357	7.9E-06	7.7E-05	0.00042	3E-06	0.00408	0.00231	0.00242	0.00035	0.00509	7.9E-06	7.7E-05
SBUS	Diesel	0	0.00206	0	0	0	0	0.00206	0.00217	0.00018	0	0.00235	0	0
UBUS	Gasoline	5.4E-05	9.9E-05	4.7E-07	4.2E-06	2.3E-05	2.3E-07	0.00013	6.7E-05	0	5.9E-05	0.00013	4.7E-07	4.2E-06
UBUS	Diesel	0	1.9E-05	0	0	0	0	1.9E-05	0.00089	0	0	0.00089	0	0
UBUS	Electricity	0	0	0	0	0	0	0	0	0	0	0	0	0
UBUS	Natural Ga	0	0.00046	0	0	0	0	0.00046	0.03068	0	0	0.03068	0	0

Vehicle Ca	Fuel	TOG_RUN	TOG_REST	TOG_TOTA	CO_RUNEX	CO_IDLEX	CO_STREX	CO_TOTEX	SOx_RUNE	SOx_IDLEX	SOx_STREX	SOx_TOTE	Fuel Consumption
HHDT	Gasoline	1.4E-05	4.4E-08	6.7E-05	0.00274	0	0.00018	0.00292	2.1E-06	0	9.1E-09	2.1E-06	0.02201
HHDT	Diesel	0	0	0.12228	0.30828	0.6105	0	0.91878	0.0138	0.00103	0	0.01483	139.888
HHDT	Natural Ga	0	0	0.00587	0.0085	0.0005	0	0.009	0	0	0	0	0.37553
LDA	Gasoline	0.27284	0.05725	1.00161	6.46712	0	2.63933	9.10645	0.02543	0	0.00064	0.02607	278.073
LDA	Diesel	0	0	0.00173	0.02379	0	0	0.02379	0.00017	0	0	0.00017	1.62511
LDA	Electricity	0	3.4E-05	0.00024	0	0	0	0	0	0	0	0	0
LDT1	Gasoline	0.11473	0.01566	0.29296	1.28849	0	0.29824	1.58673	0.00271	0	7.7E-05	0.00279	29.7763
LDT1	Diesel	0	0	7.7E-05	0.00041	0	0	0.00041	1.5E-06	0	0	1.5E-06	0.01402
LDT1	Electricity	0	1E-06	7E-06	0	0	0	0	0	0	0	0	0
LDT2	Gasoline	0.21057	0.03301	0.59419	2.99011	0	1.11533	4.10544	0.00982	0	0.00027	0.01009	107.625
LDT2	Diesel	0	0	0.00039	0.00284	0	0	0.00284	4.4E-05	0	0	4.4E-05	0.41046
LDT2	Electricity	0	5.3E-06	3.6E-05	0	0	0	0	0	0	0	0	0
LHDT1	Gasoline	0.12253	0.00028	0.19195	0.33006	0.02905	0.21017	0.56927	0.00256	9.4E-06	2.2E-05	0.00259	27.6663
LHDT1	Diesel	0	0	0.07287	0.29919	0.00889	0	0.30808	0.00174	1.3E-05	0	0.00176	16.5621
LHDT2	Gasoline	0.0145	3.3E-05	0.02255	0.02986	0.00452	0.03029	0.06467	0.00047	1.7E-06	3.8E-06	0.00048	5.06872
LHDT2	Diesel	0	0	0.02047	0.0831	0.0027	0	0.0858	0.00062	6.2E-06	0	0.00062	5.86916
MCY	Gasoline	0.0584	0.0201	0.44876	1.79436	0	0.2264	2.02076	0.00018	0	1.6E-05	0.00019	2.04311
MDV	Gasoline	0.22903	0.04042	0.69962	3.01674	0	1.34574	4.36248	0.01111	0	0.00034	0.01145	122.085
MDV	Diesel	0	0	0.00116	0.0177	0	0	0.0177	0.00022	0	0	0.00022	2.11217
MDV	Electricity	0	2.8E-06	1.9E-05	0	0	0	0	0	0	0	0	0
MH	Gasoline	0.00042	7.9E-05	0.0025	0.02931	0	0.00049	0.0298	0.00022	0	4E-08	0.00022	2.34791
MH	Diesel	0	0	0.00088	0.0029	0	0	0.0029	5.2E-05	0	0	5.2E-05	0.48799
MHDT	Gasoline	0.00709	1.7E-05	0.01572	0.0575	0.00871	0.05639	0.12261	0.0005	3.1E-06	4.5E-06	0.0005	5.36562
MHDT	Diesel	0	0	0.0475	0.1337	0.01473	0	0.14843	0.00403	5E-05	0	0.00408	38.49
OBUS	Gasoline	0.00169	4.5E-06	0.00393	0.01804	0.00107	0.01397	0.03308	0.00015	7E-07	1E-06	0.00015	1.5853
OBUS	Diesel	0	0	0.00204	0.00581	0.00216	0	0.00797	0.00019	4.4E-06	0	0.0002	1.85541
SBUS	Gasoline	0.00042	3E-06	0.0056	0.03715	0.01284	0.00828	0.05826	6.6E-05	4.1E-06	3.6E-07	7E-05	0.74925
SBUS	Diesel	0	0	0.00235	0.0051	0.00284	0	0.00794	0.00019	2E-05	0	0.00021	1.98695
UBUS	Gasoline	2.3E-05	2.3E-07	0.00015	0.00077	0	0.00088	0.00165	4.5E-05	0	9.9E-08	4.5E-05	0.48475
UBUS	Diesel	0	0	0.00089	0.00145	0	0	0.00145	6.6E-05	0	0	6.6E-05	0.61785
UBUS	Electricity	0	0	0	0	0	0	0	0	0	0	0	0
UBUS	Natural Ga	0	0	0.03068	0.22735	0	0	0.22735	0	0	0	0	1.19913

APPENDIX C
PERMITTED OPERATION TABLES

Table C.1. Summary of Actual Emissions from Proposed Units
Frito-Lay, Inc.
Modesto, CA

Process	Equipment Description[1,2]	CO		NO_x		PM[3]		SO_x		VOC		TACs		Ammonia	
		(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
N-1919-17-0 FCP Process Line	Cornmeal Sifters	--	--	--	--	1.12E-04	4.30E-04	--	--	--	--	--	--	--	--
	Cornmeal Transfer	--	--	--	--	2.49E-03	9.55E-03	--	--	--	--	--	--	--	--
	Extruders	--	--	--	--	0.04	0.16	--	--	--	--	--	--	--	--
	Fryer	--	--	--	--	0.03	0.10	--	--	0.01	0.04	--	--	--	--
	Ambient Air Cooler	--	--	--	--	0.26	1.01	--	--	--	--	--	--	--	--
	Seasoner	--	--	--	--	0.02	0.07	--	--	--	--	--	--	--	--
N-1919-18-0 Receiving and Storage (Cornmeal)	Cornmeal Silos	--	--	--	--	2.37E-05	9.09E-05	--	--	--	--	--	--	--	--
	Cornmeal Unload Filter/Receiver	--	--	--	--	2.31E-03	8.87E-03	--	--	--	--	--	--	--	--
N-1919-19-0 DTC Process Line	Corn Clean	--	--	--	--	0.00	0.02	--	--	--	--	--	--	--	--
	Oven	0.29	1.12	0.31	1.19	0.06	0.24	0.01	0.02	0.06	0.22	0.03	0.13	0.03	0.10
	Fryer	--	--	--	--	0.11	0.41	--	--	0.01	0.04	--	--	--	--
	Ambient Air Cooler	--	--	--	--	0.26	1.01	--	--	--	--	--	--	--	--
	Seasoner	--	--	--	--	0.01	0.03	--	--	--	--	--	--	--	--
N-1919-20-0 Receiving and Storage (Corn)	Corn Unloaders	--	--	--	--	0.00	0.01	--	--	--	--	--	--	--	--
	Corn Silos	--	--	--	--	0.00	0.01	--	--	--	--	--	--	--	--
Total		**0.29**	**1.12**	**0.31**	**1.19**	**0.80**	**3.09**	**0.01**	**0.02**	**0.08**	**0.31**	**0.03**	**0.13**	**0.03**	**0.10**

Notes:
[1] Emissions for cornmeal sifters, cornmeal silos, corn unloaders, and corn silos are total for 2 pieces of equipment each.
[2] There are six extruders. Emissions shown here are the totals from all six.
[3] All PM assumed to include total PM, PM_{10}, and $PM_{2.5}$.

Abbreviations:
CO - carbon monoxide
DTC - Dorito tortilla chip
FCP - fried cheese puff
hr - hour
lb - pound
NO_x - nitrogen oxide compounds (NO + NO_2)
PM - particulate matter
$PM_{2.5}$ -particulate matter less than 2.5 microns in diameter
PM_{10} - particulate matter less than 10 microns in diameter
SO_x - sulfur oxide compounds
TACs - toxic air contaminants
tpy - tons per year
VOC - volatile organic compound

Table C.2. Summary of Potential Emissions from Proposed Units
Frito-Lay, Inc.
Modesto, CA

Process	Equipment Description[1,2]	CO		NO_x		PM[3]		SO_x		VOC		TACs		Ammonia	
		(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
N-1919-17-0 FCP Process Line	Cornmeal Sifters	--	--	--	--	1.12E-04	4.90E-04	--	--	--	--	--	--	--	--
	Cornmeal Transfer	--	--	--	--	2.49E-03	1.09E-02	--	--	--	--	--	--	--	--
	Extruders	--	--	--	--	0.05	0.23	--	--	--	--	--	--	--	--
	Fryer	--	--	--	--	0.03	0.14	--	--	0.01	0.06	--	--	--	--
	Ambient Air Cooler	--	--	--	--	0.33	1.44	--	--	--	--	--	--	--	--
	Seasoner	--	--	--	--	0.02	0.08	--	--	--	--	--	--	--	--
N-1919-18-0 Receiving and Storage (Cornmeal)	Cornmeal Silos	--	--	--	--	6.75E-05	2.96E-04	--	--	--	--	--	--	--	--
	Cornmeal Unload Filter/Receiver	--	--	--	--	2.31E-03	1.01E-02	--	--	--	--	--	--	--	--
N-1919-19-0 DTC Process Line	Corn Clean	--	--	--	--	0.02	0.07	--	--	--	--	--	--	--	--
	Oven	0.29	1.28	0.31	1.36	0.06	0.27	0.01	0.02	0.06	0.26	0.03	0.15	0.03	0.12
	Fryer	--	--	--	--	0.11	0.47	--	--	0.01	0.05	--	--	--	--
	Ambient Air Cooler	--	--	--	--	0.33	1.44	--	--	--	--	--	--	--	--
	Seasoner	--	--	--	--	0.01	0.04	--	--	--	--	--	--	--	--
N-1919-20-0 Receiving and Storage (Corn)	Corn Unloaders	--	--	--	--	0.01	0.06	--	--	--	--	--	--	--	--
	Corn Silos	--	--	--	--	0.01	0.05	--	--	--	--	--	--	--	--
Total		**0.29**	**1.28**	**0.31**	**1.36**	**0.98**	**4.31**	**0.01**	**0.02**	**0.08**	**0.37**	**0.03**	**0.15**	**0.03**	**0.12**

Notes:
[1] Emissions for cornmeal sifters, cornmeal silos, corn unloaders, and corn silos are total for 2 pieces of equipment each.
[2] There are six extruders. Emissions shown here are the totals from all six.
[3] All PM assumed to include total PM, PM_{10}, and $PM_{2.5}$.

Abbreviations:
CO - carbon monoxide
DTC - Dorito tortilla chip
FCP - fried cheese puff
hr - hour
lb - pound
NO_x - nitrogen oxide compounds (NO + NO_2)
PM - particulate matter
$PM_{2.5}$ - particulate matter less than 2.5 microns in diameter
PM_{10} - particulate matter less than 10 microns in diameter
SO_x - sulfur oxide compounds
TACs - toxic air contaminants
tpy - tons per year
VOC - volatile organic compound

Table C.3. Emissions Calculations for Proposed Units
Frito-Lay, Inc.
Modesto, CA

Process	Equipment Description	Equipment Quantity	Actual Throughput[1]	Throughput Unit	Emission Factor, PM [2,3,4,5,6,7,8,9,10]	Units	Emission Factor, VOC[9]	Units	Control Device	Control Efficiency [11,12,13,14,15]	Pollutant Controlled	PM Emissions (lb/hr)	Actual PM Emissions (tpy)	VOC Emissions (lb/hr)	Actual VOC Emissions (tpy)
N-1919-17-0 FCP Process Line	Cornmeal Sifters	2	114	SCFM	0.0001146	gr/dscf	--	--	Polyester Bag Filter	--	PM	1.12E-04	0.0004	--	--
	Cornmeal Transfer	1	700	SCFM	1.0	mg/Nm^3	--	--	IQC Filter	99.99%	PM	0.002	0.01	--	--
	Extruders	8	4,400	lb/hr	4.19E-02	lb/hr	--	--	Water Scrubbing	95%	PM	0.04	0.16	--	--
	Fryer	1	5,400	lb/hr	0.03	lb/hr	0.085	lb/ton	Oil Mist Eliminator	95%	PM, VOC	0.03	0.10	0.01	0.04
	Ambient Air Cooler	1	5,400	lb/hr	0.26	lb/hr	--	--	--	--	PM	0.26	1.01	--	--
N-1919-18-0 Receiving and Storage (Cornmeal)	Cornmeal Silos	2	18,932	lb/hr	0.025	lb/ton grain loaded	--	--	IQC Filter	99.99%	PM	2.37E-05	9.09E-05	--	--
	Cornmeal Unload Filter/Receiver	1	650	SCFM	1.0	mg/Nm^3	--	--	IQC Filter	99.99%	PM	0.002	0.01	--	--
N-1919-19-0 DTC Process Line	Corn Clean	1	11,263	lb/hr	0.075	lb/ton grain handled	--	--	Bin vent filter	99%	PM	0.00	0.02	--	--
	Fryer	1	5,400	lb/hr	0.8	lb/ton chips	0.085	lb/ton	Oil Mist Eliminator	95%	PM, VOC	0.11	0.41	0.01	0.04
	Ambient Air Cooler	1	5,400	lb/hr	0.26	lb/hr	--	--	--	--	PM	0.26	1.01	--	--
N-1919-20-0 Receiving and Storage (Corn)	Corn Unloaders	2	22,526	lb/hr	0.032	lb/ton grain loaded	--	--	Bin vent filter	99%	PM	0.004	0.01	--	--
	Corn Silos	2	22,526	lb/hr	0.025	lb/ton grain loaded	--	--	Bin vent filter	99%	PM	0.003	0.01	--	--

Notes:

[1] Design capacities for the equipment provided by the facility.

[2] The emission factor for the cornmeal sifters is a controlled emission factor. This value is the mean outlet particle concentration, as specified in a manufacturer data sheet for Shick Esteve Polyester filter bags.

[3] Emissions from the cornmeal transfer and cornmeal unload filter/receiver steps are controlled via IQC filter. The facility uses STS 26 TubeFrame filters to control these processes. Brochures from the manufacturer state that these filters allow for extremely low emissions, less than 1.0 mg/Nm^3. Therefore, these values were used as controlled emission factors.

[4] The emission factor for the extruders is based on a February 2001 source test from Frito-Lay's Rancho Cucamonga facility, and scaled based on the differences in extruder capacity at the two facilities. The extruders at that facility are equipped with rotoclones, so this emission factor is controlled.

[5] The emission factor for the FCP fryer is based on a July 2001 source test from Frito-Lay's Rancho Cucamonga facility, and scaled based on the differences in fryer capacity at the two facilities. The fryer at that facility is equipped with an oil mist eliminator, so this emission factor is controlled.

[6] The emission factor for both ambient air coolers is based on two source tests: one from Frito-Lay's Kern facility in July 2005, and one from Frito-Lay's Modesto facility in April 1999. This emission factor was scaled based on ambient air cooler capacity at the facilities.

[7] The emission factors for the cornmeal and corn silos were updated in accordance with comments received from SJVAPCD. The District stated that the appropriate uncontrolled emission factor should be 0.025 lb PM per ton of grain received for storage (bin vent).

[8] The corn clean process at the facility will be equipped with a cyclone. The emission factor for this unit is taken from AP-42, Table 9.9.1-1, for a grain cleaner served by a cyclone. Available: https://www3.epa.gov/ttn/chief/ap42/ch09/final/c9s0909-1.pdf.

[9] The DTC Fryer emission factors for VOC and PM and the FCP Fryer emission factor for VOC were all obtained from AP-42, Table 9.13.3-2. PM emission factors account for both condensable and filterable portions. Available: https://www3.epa.gov/ttn/chief/ap42/ch09/final/c9s13-3.pdf.

[10] Emission factor for the corn unloaders is from AP-42, Table 9.9.1-1. Available: https://www3.epa.gov/ttn/chief/ap42/ch09/final/c9s0909-1.pdf.

[11] Control efficiencies for the IQC filters that control the cornmeal transfer and cornmeal unload filter/receiver, as well as for the rotoclones that control the extruders, are presented for informational purposes only. The emission factors used for each of those units are already controlled.

[12] The Facility proposes to use Shick Esteve Model 8-1250 Insertable Quick Change (IQC) filters to control several emission units. Per manufacturer specification, this model uses an ePTFE membrane and has an efficiency rating of at least 99.9%. The National Filter Media Corporation claims that ePTFE membranes have an initial fractional efficiency of 99.98% for particulates 0.3 – 0.4 microns in diameter, and an initial fractional efficiency of 100% if the particulate matter size is greater than 0.55 microns in diameter. Based on the expected size of particulates at the facility, using a control efficiency of 99.99% is reasonable for this equipment type. Available: https://shickesteve.com/wp-content/uploads/2018/10/IQC-Cut-Sheet-1.pdf and https://www.nfm-filter.com/assets/files/NFM-FRACTIONAL-EFFICIENCY-CHART.pdf. Accessed: October 2020.

[13] The Facility proposes to use American Air Filter Type W Rotoclones to control the extruders. Per manufacturer specification, these wet dust collectors have control efficiencies of 98% or better. Available: https://aaf-ae.com/pdf/w-rotoclone.pdf.

[14] The Facility proposes to use oil mist eliminators from the company Heat and Control. Via email correspondence, Heat and Control has confirmed that their typical oil mist eliminator has a control efficiency of at least 95% for PM_{10}.

[15] Control efficiencies of 99% were applied to the bin vent filters in accordance with comments received from SJVAPCD in the Notice of Incomplete Application, dated September 30, 2020.

Conversion Factors:

0.026853	Nm^3/scf
453.592	g/lb
1000	mg/g
2000	lb/ton
60	min/hr
7000	grains/lb

Operating Schedule:

24	hr/day
320	day/year, actual
365	day/year, potential

Annual Usages:

86,500,000	lbs corn used/year
72,700,000	lbs cornmeal used/year
84,000,000	lbs oil used/year

Abbreviations:

DTC - Dorito tortilla chip	Nm^3 - normal cubic meter
FCP - fried cheese puff	PM - particulate matter
g - gram	SCFM - standard cubic feet per minute
hr - hour	SJVAPCD - San Joaquin Valley Air Pollution Control District
IQC - insertable quick change	tpy - tons per year
lb - pound	VOC - volatile organic compound
MERV - minimum efficiency reporting value	yr - year
mg - milligram	

Table C.4. Proposed Unit Potential to Emit
Frito-Lay, Inc.
Modesto, CA

Process	Equipment Description	Equipment Quantity	Design Capacity[1]	Design Capacity Unit	Annual Usage	Units	Emission Factor, PM [2,3,4,5,6,7,8,9,10]	Units	Emission Factor, VOC[9]	Units	Control Device	Control Efficiency [11,12,13,14,15]	Pollutant Controlled	PM PTE (lb/hr)	PM PTE (lb/day)	PM PTE (lb/yr)	PM PTE (tpy)	VOC PTE (lb/hr)	VOC PTE (lb/day)	VOC PTE (lb/yr)	VOC PTE (tpy)
N-1919-17-0 FCP Process Line	Cornmeal Sifters	2	114	SCFM	998,640	lb/yr	1.15E-04	gr/dscf	--	--	Polyester Bag Filter	--	PM	1.12E-04	0.00	1.0	4.90E-04	--	--	--	--
	Cornmeal Transfer	1	700	SCFM	6,132,000	lb/yr	1.0	mg/Nm^3	--	--	IQC Filter	99.99%	PM	0.002	0.06	21.8	0.01	--	--	--	--
	Extruders	8	4,400	lb/hr	38,544,000	lb/yr	4.19E-02	lb/hr	--	--	Water Scrubbing	98%	PM	5.24E-02	1.26	458.9	0.23	--	--	--	--
	Fryer	1	5,400	lb/hr	47,304,000	lb/yr	0.03	lb/hr	0.085	lb/ton	Oil Mist Eliminator	95%	PM, VOC	0.03	0.77	281.6	0.14	0.01	0.34	100.52	0.06
	Ambient Air Cooler	1	5,400	lb/hr	47,304,000	lb/yr	0.26	lb/hr	--	--	--	--	PM	0.33	7.86	2,870.3	1.44	--	--	--	--
N-1919-18-0 Receiving and Storage (Cornmeal)	Cornmeal Silos	2	54,000	lb/hr	473,040,000	lb/yr	0.025	lb/ton grain loaded	--	--	IQC Filter	99.99%	PM	6.75E-05	0.002	0.6	2.96E-04	--	--	--	--
	Cornmeal Unload Filter/Receiver	1	650	SCFM	5,694,000	lb/yr	1.0	mg/Nm^3	--	--	IQC Filter	99.99%	PM	0.002	0.06	20.2	0.01	--	--	--	--
N-1919-19-0 DTC Process Line	Corn Clean	1	45,000	lb/hr	394,200,000	lb/yr	0.075	lb/ton grain handled	--	--	Bin vent filter	99%	PM	0.02	0.41	147.8	0.07	--	--	--	--
	Fryer	1	5,400	lb/hr	47,304,000	lb/yr	0.8	lb/ton chips	0.085	lb/ton	Oil Mist Eliminator	95%	PM, VOC	0.11	2.59	946.1	0.47	0.01	0.28	100.52	0.05
	Ambient Air Cooler	1	5,400	lb/hr	47,304,000	lb/yr	0.26	lb/hr	--	--	--	--	PM	0.33	7.86	2,870.3	1.44	--	--	--	--
N-1919-20-0 Receiving and Storage (Corn)	Corn Unloaders	2	90,000	lb/hr	788,400,000	lb/yr	0.032	lb/ton grain loaded	--	--	Bin vent filter	99%	PM	0.01	0.35	126.1	0.06	--	--	--	--
	Corn Silos	2	90,000	lb/hr	788,400,000	lb/yr	0.025	lb/ton grain loaded	--	--	Bin vent filter	99%	PM	0.01	0.27	98.6	0.05	--	--	--	--

Notes:

[1] Design capacities for the equipment provided by the facility.

[2] The emission factor for the cornmeal sifters is a controlled emission factor. This value is the mean outlet particle concentration, as specified in a manufacturer data sheet for Shick Esteve Polyester filter bags.

[3] Emissions from the cornmeal transfer and cornmeal unload filter/receiver steps are controlled via IQC filter. The facility uses STS 26 TubeFrame filters to control these processes. Brochures from the manufacturer state that these filters allow for extremely low emissions, less than 1.0 mg/Nm^3. Therefore, this value was used as the controlled emission factor.

[4] The emission factor for the extruders is based on a February 2001 source test from Frito-Lay's Rancho Cucamonga facility, and scaled based on the differences in extruder capacity at the two facilities. The extruders at that facility are equipped with rotoclones, so this emission factor is controlled.

[5] The emission factor for the FCP fryer is based on a July 2001 source test from Frito-Lay's Rancho Cucamonga facility, and scaled based on the differences in fryer capacity at the two facilities. The fryer at that facility is equipped with an oil mist eliminator, so this emission factor is controlled.

[6] The emission factor for both ambient air coolers is based on two source tests: one from Frito-Lay's Kern facility in July 2005, and one from Frito-Lay's Modesto facility in April 1999. This emission factor was scaled based on ambient air cooler capacity at the facilities.

[7] The emission factors for the cornmeal and corn silos were updated in accordance with comments received from SJVAPCD. The District stated that the appropriate uncontrolled emission factor should be 0.025 lb PM per ton of grain received for storage (bin vent).

[8] The corn clean process at the facility will be equipped with a cyclone. The emission factor for this unit is taken from AP-42, Table 9.9.1-1, for a grain cleaner served by a cyclone. Available: https://www3.epa.gov/ttn/chief/ap42/ch09/final/c9s0909-1.pdf.

[9] The DTC Fryer emission factors for VOC and PM and the FCP Fryer emission factor for VOC were all obtained from AP-42, Table 9.13.3-2. PM emission factors account for both condensable and filterable portions. Available: https://www3.epa.gov/ttn/chief/ap42/ch09/final/c9s13-3.pdf.

[10] Emission factor for the corn unloaders is from AP-42, Table 9.9.1-1. Available: https://www3.epa.gov/ttn/chief/ap42/ch09/final/c9s0909-1.pdf.

[11] Control efficiencies for the IQC filters that control the cornmeal transfer and cornmeal unload filter/receiver, as well as for the rotoclones that control the extruders, are presented for informational purposes only. The emission factors used for each of those units are already controlled.

[12] The Facility proposes to use Shick Esteve Model 8-1250 Insertable Quick Change (IQC) filters to control several emission units. Per manufacturer specification, this model uses an ePTFE membrane and has an efficiency rating of at least 99.9%. The National Filter Media Corporation claims that ePTFE membranes have an initial fractional efficiency of 99.98% for particulates 0.3 – 0.4 microns in diameter, and an initial fractional efficiency of 100% if the particulate matter size is greater than 0.55 microns in diameter. Based on the expected size of particulates at the facility, using a control efficiency of 99.99% is reasonable for this equipment type. Available: https://shickesteve.com/wp-content/uploads/2018/10/IQC-Cut-Sheet-1.pdf and https://www.nfm-filter.com/assets/files/NFM-FRACTIONAL-EFFICIENCY-CHART.pdf. Accessed: October 2020.

[13] The Facility proposes to use American Air Filter Type W Rotoclones to control the extruders. Per manufacturer specification, these wet dust collectors have control efficiencies of 98% or better. Available: https://aaf-ae.com/pdf/w-rotoclone.pdf.

[14] The Facility proposes to use oil mist eliminators from the company Heat and Control. Via email correspondence, Heat and Control has confirmed that their typical oil mist eliminator has a control efficiency of at least 95% for PM_{10}.

[15] Control efficiencies of 99% were applied to the bin vent filters in accordance with comments received from SJVAPCD in the Notice of Incomplete Application, dated September 30, 2020.

Conversion Factors:

0.026853	Nm^3/scf
453.592	g/lb
1000	mg/g
2000	lb/ton
60	min/hr
7000	grains/lb

Operating Schedule:

24	hr/day
320	day/year, actual
365	day/year, potential

Annual Usages:

86,500,000	lbs corn used/year
72,700,000	lbs cornmeal used/year
84,000,000	lbs oil used/year

Abbreviations:

DTC - Dorito tortilla chip
FCP - fried cheese puff
g - gram
hr - hour
IQC - insertable quick change
lb - pound
MERV - minimum efficiency reporting value
mg - milligram
Nm^3 - normal cubic meter
PM - particulate matter
SCFM - standard cubic feet per minute
SJVAPCD - San Joaquin Valley Air Pollution Control District
tpy - tons per year
VOC - volatile organic compound
yr - year

Table C.5. Seasoner Emissions
Frito-Lay, Inc.
Modesto, CA

Equipment	Throughput[1] (lb/hr)	Estimated Particulate Matter Air Release[2]	Uncontrolled Hourly Emissions (lb/hr)	Dust Collector Control Efficiency[1]	Controlled Hourly Emissions (lb/hr)	Controlled Daily Emissions (lb/day)	Actual Emissions		Potential Emissions	
							Annual Emissions (lb/yr)	Annual Emissions (tpy)	Annual Emissions (lb/yr)	Annual Emissions (tpy)
FCP Seasoner	1,855	0.10%	1.86	99%	0.02	0.45	142	0.07	162	0.08
DTC Seasoner	835	0.10%	0.84	99%	0.01	0.20	64	0.03	73	0.04

Notes:

[1] Throughputs and efficiencies provided by the facility.

[2] Estimated PM air release from similar equipment at another Frito-Lay facility.

Operating Schedule:

24 hours/day
320 days/year, actual
365 days/year, potential

Conversion Factor:

2000 lb/ton

Abbreviations:

DTC - Dorito tortilla chip
FCP - fried cheese puff
hr - hour
lb - pound
PM_{10} - particulate matter less than 10 microns in diameter
PTE - potential to emit
tpy - tons per year
yr - year

Table C.6. Criteria Pollutant Emissions from Combustion
Frito-Lay, Inc.
Modesto, CA

	CO[1]		NO_x[2]		PM[1]		SO_x[1]		VOC[1]	
	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
Actual Emissions	0.29	1.12	0.31	1.19	0.06	0.24	0.01	0.02	0.06	0.22
Potential Emissions	0.29	1.28	0.31	1.36	0.06	0.27	0.01	0.02	0.06	0.26

Notes:
[1]CO, PM, SOx, and VOC emissions calculated using emission factors from SCAQMD AER Reporting Tool Help and Support Manual.
[2]NO_x emissions calculated using manufacturer specifications for the oven's low-NOx burner.

DTC Oven Specifications:
8.5 MMBtu natural gas/hr

Operating Schedule:
24 hours/day
320 days/year, actual
365 days/year, potential

Conversion Factors:
1,020 BTU/scf Natural Gas
2,000 lb/ton

NO_x Emission Calculations:
30 ppm
3 $\%O_2$
8710 scf/MMBtu, F_d for natural gas
86,443 stack flow rate, scfh
46 lb NO_x/lb mol
385 scf/lb mole at STP
0.31 lb/hr NO_x

Abbreviations:
AER - annual emission reporting
BTU - British thermal unit
CO - carbon monoxide
DTC - Dorito tortilla chip
hr - hour
lb - pound
MMBtu - million British thermal units
NO_x - nitrogen oxides (NO + NO_2)
O_2 - oxygen
PM - particulate matter
ppm - parts per million
SCAQMD - South Coast Air Quality Management District
scf - standard cubic foot
scfh - standard cubic feet per hour
SO_x - sulfur oxides
STP - standard temperature and pressure
tpy - tons per year
VOC - volatile organic compound
yr - year

Table C.7. Toxic Air Contaminant Emissions from Combustion
Frito-Lay, Inc.
Modesto, CA

CAS No.	Pollutant	Emissions[1] (lb/hr)	Actual Annual Emissions		Potential Annual Emissions	
			Emissions (lb/yr)	Emissions (tpy)	Emissions (lb/yr)	Emissions (tpy)
75-07-0	acetaldehyde	3.58E-05	2.75E-01	1.38E-04	3.14E-01	1.57E-04
107-02-8	acrolein	2.25E-05	1.73E-01	8.64E-05	1.97E-01	9.86E-05
7664-41-7	ammonia	2.67E-02	2.05E+02	1.02E-01	2.34E+02	1.17E-01
71-43-2	benzene	6.67E-05	5.12E-01	2.56E-04	5.84E-01	2.92E-04
100-41-4	ethyl benzene	7.92E-05	6.08E-01	3.04E-04	6.94E-01	3.47E-04
50-00-0	formaldehyde	1.42E-04	1.09E+00	5.44E-04	1.24E+00	6.21E-04
110-54-3	hexane	5.25E-05	4.03E-01	2.02E-04	4.60E-01	2.30E-04
91-20-3	naphthalene	2.50E-06	1.92E-02	9.60E-06	2.19E-02	1.10E-05
1151	PAH (excluding naphthalene)	8.33E-07	6.40E-03	3.20E-06	7.30E-03	3.65E-06
115-07-1	propylene	6.09E-03	4.68E+01	2.34E-02	5.34E+01	2.67E-02
108-88-3	toluene	3.05E-04	2.34E+00	1.17E-03	2.67E+00	1.34E-03
1330-20-7	xylenes	2.27E-04	1.74E+00	8.70E-04	1.99E+00	9.93E-04
	Total	**3.37E-02**	**2.59E+02**	**1.29E-01**	**2.95E+02**	**1.48E-01**

Notes:

[1]TAC emission factors are SJVAPCD defaults for natural gas combustion for external combustion equipment with a rating of less than 10 MMBtu/hr. Available: https://www.valleyair.org/busind/pto/emission_factors/emission_factors_idx.htm.

DTC Oven Specifications:

8.5	Heat Input (MMBtu/hr)
0.0083	Natural Gas Usage (MMscf/hr)

Operating Schedule:

24	hours/day
320	days/year, actual
365	days/year, potential

Conversion Factors:

1,020	BTU/scf Natural Gas
2,000	lb/ton

Abbreviations:

BTU - British thermal unit
CAS - Chemical Abstracts Service
DTC - Dorito tortilla chip
hr - hour
lb - pound
MMBtu - million British thermal units
MMscf - million standard cubic feet
PAH - polycyclic aromatic hydrocarbons
scf - standard cubic foot
SJVAPCD - San Joaquin Valley Air Pollution Control District
TAC - toxic air contaminant
tpy - tons per year
yr - year

APPENDIX D
NON-PERMITTED OPERATION TABLES

Table D.1. CAP and GHG Emissions from Area Sources
Frito-Lay Inc.
Modesto, CA

Area Source Subcategory	*Incremental CAP Emissions[1] (tons/year)*						*Incremental GHG Emissions[1] (MT/year)*			
	ROG	**CO**	**SO_2**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
Architectural Coating	0.14	--	--	--	--	--	--	--	--	--
Consumer Products	0.71	--	--	--	--	--	--	--	--	--
Landscaping	0.00	0.01	--	0.00	0.00	0.00	0.02	0.00	--	0.02
Total	**0.85**	**0.01**	**--**	**0.00**	**0.00**	**0.00**	**0.02**	**0.00**	**--**	**0.02**

Notes:
[1] Emissions estimated using CalEEMod® version 2016.3.2.

Abbreviations:
CalEEMod® - California Emissions Estimator Model
CAP - criteria air pollutant
CH_4 - methane
CO - carbon monoxide
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
GHG - greenhouse gas
MT - metric ton
N_2O - nitrous oxide
NO_x - nitrogen oxide compounds (NO + NO_2)
$PM_{2.5}$ -particulate matter less than 2.5 microns in diameter
PM_{10} - particulate matter less than 10 microns in diameter
ROG - reactive organic gas
SO_2 - sulfur dioxide

Table D.2. Electricity Carbon Intensity Factor Determination
Frito-Lay Inc.
Modesto, CA

Energy Delivered [MWh]					
	2016	**2017**	**2018**	**Average**	**Units**
Total Energy Delivery[1]	83,407,514	81,945,110	80,368,675	--	MWh
from renewables	27,524,479	27,041,886	31,343,783	--	MWh
from non-renewables	55,883,034	54,903,224	49,024,892	--	MWh
% of Total Energy From Renewables[2]	33%	33%	39%	--	
% of Total Energy From Non-Renewables	67%	67%	61%	--	
CO_2 Intensity Factor per Total Energy Delivered[3]	294	210	206	237	lbs CO_2/MWh delivered
CO_2 Intensity Factor per Total Non-Renewable Energy[4]	438	314	338	364	lbs CO_2/MWh delivered

Estimated Intensity Factors for Total Energy Delivered[5]					
2020 RPS (33%)[6]	**293.7**	**210.4**	**226.6**	**243.56**	lbs CO_2/MWh delivered
2022 RPS (38.7%)[6]	**268.7**	**192.5**	**207.3**	**222.84**	lbs CO_2/MWh delivered
2026 RPS (50%)[6]	**219.2**	**157.0**	**169.1**	**163.07**	lbs CO_2/MWh delivered

Conversion Factor:

1000 MWh/GWh

Notes:

[1] The total energy delivered in years 2016, 2017, and 2018 determined using the CEC's Electricity Consumption by Entity database. Available: http://www.ecdms.energy.ca.gov/elecbyutil.aspx. Accessed: August 2020.

[2] The percentages of energy from renewable sources in 2016, 2017, and 2018 are from power content labels for the respective years. Available: https://www.pge.com/pge_global/local/assets/data/en-us/your-account/your-bill/understand-your-bill/bill-inserts/2017/november/power-content.pdf, https://www.pge.com/pge_global/common/pdfs/your-account/your-bill/understand-your-bill/bill-inserts/2018/10-18_PowerContent.pdf, and https://www.pge.com/pge_global/common/pdfs/your-account/your-bill/understand-your-bill/bill-inserts/2019/1019-Power-Content-Label.pdf. Accessed: August 2020.

[3] PG&E carbon intensites obtained from The Climate Registry. Available: https://www.theclimateregistry.org/our-members/cris-public-reports/. Accessed: August 2020.

[4] The emissions metric presented here is calculated based on the total CO_2 emissions divided by the energy delivered from non-renewable sources.

[5] The intensity factors for default RPS assumption are estimated by multiplying the percentage of energy delivered from non-renewable energy by the CO_2 emissions per total non-renewable energy metric calculated above. The estimate provided here assumes that renewable energy sources do not result in any CO_2 emissions.

[6] RPS for 2020 and 2026 based on California Senate Bill (SB) 100. RPS for 2022 was determined by linearly interpolating between the 2020 RPS (33%) and the 2026 RPS (50%), as listed in SB 100. Available: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB100. Accessed: July 2020.

Abbreviations:

CEC - California Energy Commission

CO_2 - carbon dioxide

GWh - gigawatt-hour

lbs - pounds

MWh - megawatt-hour

RPS - Renewable Portfolio Standard

Table D.3. GHG Emissions from Facility Electricity Usage
Frito-Lay, Inc.
Modesto, CA

Electricity Use Rate[1] (MW)	Annual Electricity Use (MWh)	Incremental Electricity Emissions[2,3]			
		CO_2	CH_4	N_2O	CO_2e
		(MT/yr)			
2.00	17,520	1,771	0.23	0.05	1,791

Conversion Factors:

2204.62	lb/MT
1000	kWh/MWh
8760	hour/year

Notes:

[1] Electricity usage provided by the Facility.

[2] CO_2 emission factor is based on the RPS carbon intensity value as calculated in **Table 2**.

[3] CH_4 and N_2O emission factors are CalEEMod® version 2016.3.2 defaults for nonresidential land uses. Available: http://www.aqmd.gov/docs/default-source/caleemod/05_appendix-d2016-3-2.pdf?sfvrsn=4, Table 8.2. Accessed: July 2020.

Abbreviations:

CalEEMod® - California Emissions Estimator Model	lb - pound
CEC - California Energy Commission	MT - metric ton
CH_4 - methane	MWh - megawatt hour
CO_2 - carbon dioxide	N_2O - nitrous oxide
CO_2e - carbon dioxide equivalents	sqft - square feet
kWh - kilowatt hour	yr - year

Table D.4. CAP and GHG Emissions from Facility Natural Gas Usage
Frito-Lay, Inc.
Modesto, CA

Natural Gas Use[1] (ft^3/hr)	Annual Natural Gas Use (MMBtu/yr)	*Incremental CAP Emissions*[2]						*Incremental GHG Emissions*[2]			
		ROG	CO	SO_2	NO_x	PM_{10}	$PM_{2.5}$	CO_2	CH_4	N_2O	CO_2e
		(tons/yr)						(MT/yr)			
12,000	107,222	0.58	4.42	0.03	5.26	0.40	0.40	5,722	0.11	0.10	5,756

Conversion Factors:

2,000	lb/ton
1,000,000	Btu/MMBtu
2,204.62	lb/MT
1,020	Btu/scf Natural gas
8,760	hours/year

Notes:

[1] Natural gas usage provided by the Facility.

[2] CAP and GHG emission factors are CalEEMod® version 2016.3.2 defaults for nonresidential land uses. Available: http://www.aqmd.gov/docs/default-source/caleemod/05_appendix-d2016-3-2.pdf?sfvrsn=4, Table 8.2. Accessed: July 2020.

Abbreviations:

Btu - British thermal unit
CalEEMod® - California Emissions Estimator Model
CAP - criteria air pollutant
CEC - California Energy Commission
CH_4 - methane
CO - carbon monoxide
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
GHG - greenhouse gas
lb - pound
MMBtu - million British thermal units
MT - metric ton
N_2O - nitrous oxide
NO_x - nitrogen oxide compounds (NO + NO_2)
$PM_{2.5}$ -particulate matter less than 2.5 microns in diameter
PM_{10} - particulate matter less than 10 microns in diameter
ROG - reactive organic gas
SO_2 - sulfur dioxide
sqft - square feet
yr - year

Table D.5. Passenger Car Trip Determinations
Frito-Lay, Inc.
Modesto, CA

	Commuter Trip Length (miles/trip)	Increase in Peak Daily Trips as a Result of the Project (trips/day)
Passenger Cars	10.8	412

Notes:

[1] Estimated mileage is a CalEEMod® default for home-work trips in Stanislaus County, taken from Table 4.2 of Appendix D. Available: http://www.caleemod.com/. Accessed: August 2020.

[2] The number of daily one-way passenger car trips was provided by the facility. As a result of the Transformation Project, the facility expects to add 206 more employees. The increase in daily passenger car trips in was estimated assuming all employees drive to work and back each day.

Abbrevations:

CalEEMod - California Emissions Estimator Model

Table D.6. Truck Trip Length Determination
Frito-Lay, Inc.
Modesto, CA

Distribution Center City[1]	Distribution Center Location[1]	Distance from Facility to Distribution Center[2] (miles)	City Population[3]	Region	Average Trip Length, Weighted by Population	Percentage of Trips to Each Region[4]	Overall Trip Length Average (miles/trip)
Fresno	2929 S. Elm	96.7	530,093	Northern California	87	65%	**173**
San Jose	1774 Automation Parkway	85.4	7,753,000				
Santa Rosa	3033 Coffey Lane	148	177,586				
Bakersfield	6320 District Boulevard	207	383,579	Southern California	332	35%	
Torrance	1500 Francisco Street	324	10,040,000				
San Diego	4953 Paramount Drive	425	1,426,000				

Notes:

[1] Distribution center locations provided by the facility.

[2] Distance from facility to distribution centers measured using Google Earth Pro.

[3] City populations based on 2018 data from the United States Census Bureau. Distribution centers in San Jose and Torrance are using populations of their larger surrounding areas: the San Francisco Bay Area and Los Angeles County, respectively.

[4] It is assumed that 65% of truck deliveries from the Modesto facility will go to Northern California, and 35% of truck deliveries will go to Southern California.

Table D.7. Summary of Baseline and Project Mobile Scenarios
Frito-Lay, Inc.
Modesto, CA

	Truck Data			Passenger Car Data		
	Number of Daily Trips[1]	Trip Length (miles/trip)[2]	Fleet Mix[3]	Number of Daily Trips[4]	Trip Length (miles/trip)[5]	Fleet Mix[6]
Baseline Scenario	76	173	38 NG Trucks, 12 Diesel Trucks	1,082	10.8	EMFAC Default
Post-Project Scenario	93	173	38 NG Trucks, 12 Electric Trucks	1,494	10.8	EMFAC Default

Notes:

[1] Number of daily trips accounts for inbound and outbound deliveries. These values were based on the increased capacity of each process line as a result of the Transformation Project. Current production levels and load quantities were provided by Chris Bundy in an email dated 6/19/2020.

[2] Average trip length for trucks as determined in **Table 6**.

[3] Current and future fleet mix as described by the Facility.

[4] According to a data request, there are 131 and 410 employees at the Facility during minimum and maximum shift, respectively, for a total of 541 employees. As a result of the Transformation Project, the Facility expects to add 206 more employees. The number of daily passenger car trips in both scenarios was estimated assuming all employees drive to work and back each day.

[5] The average trip length for passenger cars is based on a CalEEMod default for home-work trips in Stanislaus County, taken from Table 4.2 of Appendix D. Available: http://www.caleemod.com/. Accessed: August 2020.

[6] The passenger vehicle fleet mix for the baseline and post-project scenarios are based on EMFAC2017 v1.0.3 defaults. These include LDA, LDT, and MDV vehicle classes. Available: https://arb.ca.gov/emfac/emissions-inventory. Accessed: December 2020.

Abbreviations:

CalEEMod - California Emissions Estimator Model

EMFAC - Emission Factor Model

LDA - passenger cars

LDT - light-duty trucks

MDV - medium-duty trucks

NG - natural gas

Table D.8. Baseline Scenario Emission Factors for Passenger Cars
Frito-Lay, Inc.
Modesto, CA

Year	Vehicle Class	Emission Factor Units	Mobile Emission Factors[1]								
			ROG	CO	SO_2	NO_x	PM_{10}	$PM_{2.5}$	CO_2	CH_4	N_2O
2022	Passenger Vehicles[2]	g/mile	0.0224	1.0712	0.0033	0.0948	0.0466	0.0194	332.1639	0.0052	0.0081
		g/trip	0.5100	2.8455	0.0007	0.3231	0.0022	0.0020	69.0625	0.0810	0.0336

Notes:

[1] Emission factors calculated using EMFAC2017 v1.0.3. Available: https://arb.ca.gov/emfac/emissions-inventory. Accessed: July 2020.

[2] Passenger vehicles include LDA, LDT1, LDT2, and MDV vehicle classes.

Abbreviations:

CH_4 - methane
CO - carbon monoxide
CO_2 - carbon dioxide
EMFAC - EMission FACtor model
g - gram
HHDT - heavy-heavy duty truck
LDA - passenger car
LDT - light-duty truck
LHDT - light-heavy duty truck
MDV - medium-duty truck
MHDT - medium-heavy duty truck
N_2O - nitrous oxide
NO_x - nitrogen oxide compounds (NO + NO_2)
$PM_{2.5}$ -particulate matter less than 2.5 microns in diameter
PM_{10} - particulate matter less than 10 microns in diameter
ROG - reactive organic gas
SO_2 - sulfur dioxide

Table D.9. Baseline Scenario Truck Emission Factors
Frito-Lay, Inc.
Modesto, CA

Vehicle Class	Emission Factor Units	Mobile Emission Factors - CY 2020								
		ROG	CO	SO_2	NO_x	PM_{10}	$PM_{2.5}$	CO_2	CH_4	N_2O
Diesel Trucks[1]	g/mile	0.14	0.52	0.01	4.07	0.17	0.10	1,473	0.01	0.23
	g/trip	0.00	0.00	0.00	1.80	0.00	0.00	0.00	0.00	0.00
	g/idle trip	0.51	6.32	0.01	6.50	0.01	0.01	1,217	0.02	0.19
NG Trucks[1]	g/mile	0.74	8.17	0.00	8.28	0.11	0.05	3,307	5.79	0.67
	g/trip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	g/idle trip	0.05	5.38	0.00	10.46	0.05	0.05	1,112	0.46	0.23
Baseline Truck Scenario[2]	g/mile	0.60	6.33	0.00	7.27	0.13	0.06	2,867	4.40	0.57
	g/trip	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.00	0.00
	g/idle trip	0.17	5.60	0.00	9.51	0.04	0.04	1,137	0.36	0.22

Baseline Scenario:

38 NG Trucks
12 Diesel Trucks

Notes:

[1] Emission factors for diesel and natural gas trucks obtained from EMFAC2017 v1.0.3. These emission factors are for heavy-heavy duty trucks in Stanislaus County in calendar year 2020. Available: https://arb.ca.gov/emfac/emissions-inventory. Accessed: December 2020.

[2] In the baseline, pre-project scenario, the truck fleet that makes deliveries to and from the facility consists of 38 natural gas fueled trucks and 12 diesel trucks.

Abbreviations:

CH_4 - methane
CO - carbon monoxide
CO_2 - carbon dioxide
CY - calendar year
EMFAC - EMission FACtor model
g - gram
LDA - passenger car
LDT - light-duty truck
MDV - medium-duty truck
NG - natural gas
N_2O - nitrous oxide
NO_x - nitrogen oxide compounds (NO + NO_2)
$PM_{2.5}$ -particulate matter less than 2.5 microns in diameter
PM_{10} - particulate matter less than 10 microns in diameter
ROG - reactive organic gas
SO_2 - sulfur dioxide

Table D.10. Project Scenario Emission Factors for Passenger Cars
Frito-Lay, Inc.
Modesto, CA

Year	Vehicle Class	Emission Factor Units	Mobile Emission Factors[1]								
			ROG	CO	SO_2	NO_x	PM_{10}	$PM_{2.5}$	CO_2	CH_4	N_2O
2022	Passenger Vehicles[2]	g/mile	0.02	0.86	0.00	0.07	0.05	0.02	310.99	0.00	0.01
		g/trip	0.42	2.60	0.00	0.27	0.00	0.00	64.54	0.07	0.03

Notes:

[1] Emission factors calculated using EMFAC2017 v1.0.3. Available: https://arb.ca.gov/emfac/emissions-inventory. Accessed: July 2020.

[2] Passenger vehicles include LDA, LDT1, LDT2, and MDV vehicle classes.

Abbreviations:

CH_4 - methane
CO - carbon monoxide
CO_2 - carbon dioxide
EMFAC - EMission FACtor model
g - gram
HHDT - heavy-heavy duty truck
LDA - passenger car
LDT - light-duty truck
LHDT - light-heavy duty truck
MDV - medium-duty truck
MHDT - medium-heavy duty truck
N_2O - nitrous oxide
NO_x - nitrogen oxide compounds (NO + NO_2)
$PM_{2.5}$ -particulate matter less than 2.5 microns in diameter
PM_{10} - particulate matter less than 10 microns in diameter
ROG - reactive organic gas
SO_2 - sulfur dioxide

Table D.11. Project Scenario Truck Emission Factors
Frito-Lay, Inc.
Modesto, CA

Vehicle Class	Emission Factor Units	Mobile Emission Factors - CY 2022								
		ROG	CO	SO_2	NO_x	PM_{10}	$PM_{2.5}$	CO_2	CH_4	N_2O
NG Trucks[1]	g/mile	0.61	8.73	0.00	6.79	0.11	0.05	3,233	5.27	0.66
	g/trip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	g/idle trip	0.05	5.40	0.00	9.37	0.04	0.04	1,079	0.43	0.22
Post-Project Truck Scenario[2]	g/mile	0.46	6.63	0.00	5.16	0.09	0.04	2,457	4.00	0.50
	g/trip	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	g/idle trip	0.03	4.11	0.00	7.12	0.03	0.03	820	0.33	0.17

Future Scenario:

38 NG Trucks
12 Electric Trucks[3]

Notes:

[1] Emission factors for diesel and natural gas trucks obtained from EMFAC2017 v1.0.3. These emission factors are for heavy-heavy duty trucks in Stanislaus County in calendar year 2020. Available: https://arb.ca.gov/emfac/emissions-inventory. Accessed: December 2020.

[2] In the future, post-project scenario, the truck fleet that makes deliveries to and from the facility consists of 38 natural gas fueled trucks and 12 electric trucks.

[3] Electric truck emissions are not shown in this table, as the electric trucks will have zero tailpipe emissions.

Abbreviations:

CH_4 - methane
CO - carbon monoxide
CO_2 - carbon dioxide
CY - calendar year
EMFAC - EMission FACtor model
g - gram
LDA - passenger car
LDT - light-duty truck
MDV - medium-duty truck
NG - natural gas
N_2O - nitrous oxide
NO_x - nitrogen oxide compounds (NO + NO_2)
$PM_{2.5}$ -particulate matter less than 2.5 microns in diameter
PM_{10} - particulate matter less than 10 microns in diameter
ROG - reactive organic gas
SO_2 - sulfur dioxide

Table D.12. Total Passenger Car and Truck Emissions in Each Scenario
Frito-Lay, Inc.
Modesto, CA

	Baseline Scenario [1]										***Post-Project Scenario*** [1]									
	CAP Emissions (ton/year)						**GHG Emissions (MT/year)**				**CAP Emissions (ton/year)**						**GHG Emissions (MT/year)**			
Mobile Source Activity	**ROG**	**CO**	**SO_2**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**	**CH_4**	**N_2O**	**CO_2e**	**ROG**	**CO**	**SO_2**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
Passenger Car Trips[2]	0.33	6.28	0.02	0.59	0.22	0.09	1,444	0.05	0.05	1,460	0.35	7.12	0.02	0.61	0.30	0.13	1,867	0.06	0.06	1,885
Truck Trips[3]	3.17	33.69	0.02	38.80	0.68	0.34	13,803	21.15	2.73	15,147	3.01	43.13	0.00	33.70	0.55	0.24	14,469	23.54	2.95	15,937
Total Emissions[4]	**3.50**	**39.97**	**0.03**	**39.39**	**0.90**	**0.43**	**15,247**	**21.21**	**2.78**	**16,607**	**3.36**	**50.26**	**0.02**	**34.31**	**0.86**	**0.37**	**16,336**	**23.60**	**3.00**	**17,821**

Conversion Factors:

453.592	grams/lb
2204.62	lb/MT
2000	lb/ton
365	day/year

Global Warming Potentials:

CO_2	1
CH_4	25
N_2O	298

[1] Baseline and post-project scenarios are as detailed in **Table 7**.
[2] Emissions from passenger car trips calculated using emission factors as derived in **Tables 8 and 10**. The trip length and number of trips were calculated in **Table 5**.
[3] Emissions from truck trips estimated using emission factors as derived in **Tables 9 and 11**. The number of daily one-way truck trips was provided by the facility, and the estimated mileage per trip is calculated in **Table 6**.
[4] Total emissions in each scenario were calculated as a sum of passenger car trips, truck trips, and truck idling.

Abbreviations:

CAP - criteria air pollutant
CH_4 - methane
CO - carbon monoxide
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
GHG - greenhouse gas
lb - pound
MT - metric ton
N_2O - nitrous oxide
NO_x - nitrogen oxide compounds (NO + NO_2)
$PM_{2.5}$ -particulate matter less than 2.5 microns in diameter
PM_{10} - particulate matter less than 10 microns in diameter
ROG - reactive organic gas
SO_2 - sulfur dioxide

Table D.13. Locomotive Trip Length per Air District
Frito-Lay, Inc.
Modesto, CA

Total Railway Distance within California		
Map Section[1]	**Length (m)**	**Length (mi)**
I-80 from CA Boundary to I-5	205,428	128
I-5 to SR120	94,989	59
Smaller Streets to Facility	42,842	27
Total Rail Distance Traveled	**343,258**	**213**
Distance within SJVAPCD[2]		
I-80 from CA Boundary to I-5	0	0
I-5 to SR120	60,290	37
Smaller Streets to Facility	42,842	27
Rail Distance Traveled within SJVAPCD	*103,131*	*64*
% of Emissions within SJVAPCD	**30.0%**	
Distance within Sacramento Air District[2]		
I-80 from CA Boundary to I-5	27,095	17
I-5 to SR120	17,866	11
Smaller Streets to Facility	0	0
Rail Distance Traveled within Sacramento	*44,961*	*28*
% of Emissions within Sacramento	**13.1%**	
Distance within Yolo Solano Air District[2]		
I-80 from CA Boundary to I-5	12,589	8
I-5 to SR120	16,827	10
Smaller Streets to Facility	0	0
Rail Distance Traveled within Yolo Solano	*29,415*	*18*
% of Emissions within Yolo Solano	**8.6%**	
Distance within Placer Air District[2]		
I-80 from CA Boundary to I-5	133,835	83
I-5 to SR120	0	0
Smaller Streets to Facility	0	0
Rail Distance Traveled within Placer	*133,835*	*83*
% of Emissions within Placer	**39.0%**	
Distance within Northern Sierra Air District[2]		
I-80 from CA Boundary to I-5	31,975	20
I-5 to SR120	0	0
Smaller Streets to Facility	0	0
Rail Distance Traveled within N. Sierra	*31,975*	*20*
% of Emissions within N. Sierra	**9.3%**	

Conversion Factors:

1609.34 meters/mile

Notes:

[1] It was estimated that after entering California, the railroad tracks approximately followed the direction of Interstate 80, Interstate 5, and State Route 120. The total distance of each of these segments was calculated in ArcGIS Pro. Available: https://www.esri.com/en-us/arcgis/products/arcgis-pro/overview. Accessed: July 2020.

[2] A map of California air districts was placed on top of the estimated railroad path. The percentages of emissions attributed to each district were calculated by taking the percentage of total rail miles traveled in each district. The portions of the track that overlapped with each district boundary were also calculated in ArcGIS Pro. Available: https://www.esri.com/en-us/arcgis/products/arcgis-pro/overview. Accessed: July 2020.

Abbreviations:

CA - California
CEQA - California Environmental Quality Act
I-5 - Interstate 5
I-80 - Interstate 80
m - meters
mi - miles
SJVAPCD - San Joaquin Valley Air Pollution Control District
SR120 - State Route 120

Table D.14. CAP Emission Factors for Locomotives
Frito-Lay, Inc.
Modesto, CA

	HC[1]	ROG[2]	CO[1]	SO_2[3]	NO_x[4]	PM_{10}[4,5]	$PM_{2.5}$[4,5]
Emission Factors (g/gal)	3.20	3.37	26.62	0.10	68.57	1.01	1.01
Emission Factors (g/ton-mile)[6]	0.011	0.012	0.093	0.0003	0.240	0.004	0.004

Conversion Factors and Constants:

20.8	bhp-hr/gal[7]
248,707,812,000	ton-miles, freight trains[6]
870,814,873	gallons of diesel fuel consumed, freight trains[6]
285.6	ton-mile/gal
3,200	g/gal, density of diesel[3]
1	unitless conversion factor (fraction of fuel sulfur converted to SO_2)[3]
15	ppm, sulfur content of ultra-low sulfur diesel
907,185	g/ton

Notes:

[1] Emission factors for HC and CO are obtained from Tables 1 and 7 in US EPA guidance, Emission Factors for Locomotives. Values used are for large line-haul trains in calendar year 2022. Available: https://nepis.epa.gov/Exe/ZyPDF.cgi/P100500B.PDF?Dockey=P100500B.PDF. Accessed: August 2020.

[2] ROG emissions can be estimated as 1.053 times HC emissions per US EPA guidance, Emission Factors for Locomotives. Available: https://nepis.epa.gov/Exe/ZyPDF.cgi/P100500B.PDF?Dockey=P100500B.PDF. Accessed: August 2020.

[3] SO_X emission factors were calculated using methodology outlined in US EPA guidance, Emission Factors for Locomotives. Available: https://nepis.epa.gov/Exe/ZyPDF.cgi/P100500B.PDF?Dockey=P100500B.PDF. Accessed: August 2020.

[4] Emission factors for NOx and PM are obtained from Table 8-1 in CARB guidance, 2016 Line Haul Locomotive Model & Update. Available: https://ww3.arb.ca.gov/msei/ordiesel/locolinehaul2017ei.docx. Accessed: August 2020.

[5] It is conservatively assumed that PM, PM_{10}, and $PM_{2.5}$ emissions are all equal.

[6] Emission factors were converted from grams per gallon to grams per ton-mile using the total ton-miles that Union Pacific freight trains travelled in 2019 and the total gallons of diesel fuel consumed by Union Pacific freight trains in 2019. These values were taken from pages 86 and 93, respectively, of the 2019 Union Pacific Class I Railroad Annual Report. Available: https://www.up.com/cs/groups/public/@uprr/@investor/documents/investordocuments/pdf_up_r1_2019.pdf. Accessed: August 2020.

[7] Bhp-hr/gal conversion factor taken from Table 3 of US EPA guidance. Value used is for large-line haul locomotives. Available: https://nepis.epa.gov/Exe/ZyPDF.cgi/P100500B.PDF?Dockey=P100500B.PDF. Accessed: August 2020.

[8] In accordance with US EPA regulations, it is assumed that all diesel used in locomotives is ULSD. Available: https://www.epa.gov/diesel-fuel-standards/diesel-fuel-standards-and-rulemakings. Accessed: August 2020.

Abbreviations:

bhp - brake horsepower
CARB - California Air Resources Boar
g - gram
gal - gallon
HC - hydrocarbon
hr - hour
NO_x - nitrogen oxide compounds (NO
PM - particulate matter
$PM_{2.5}$ -particulate matter less than 2.5 microns in diameter
PM_{10} - particulate matter less than 10 microns in diameter
ppm - parts per million
ROG - reactive organic gas
SO_2 - sulfur dioxide
ULSD - ultra low sulfur diesel
US EPA - United States Environmental Protection Agency

Table D.15. CAP Emissions from Locomotives
Frito-Lay, Inc.
Modesto, CA

	HC	ROG	CO	SO_2	NO_x	PM_{10}	$PM_{2.5}$
Incremental Emissions (ton/year)[1,2]	0.668	0.704	5.559	0.020	14.316	0.212	0.212
Incremental SJVAPCD Emissions (ton/year)[3]	0.201	0.211	1.670	0.006	4.301	0.064	0.064

Conversions and Constants:

2,000	lb/ton
52	week/year
907,185	g/ton
213	mi, one-way trip length
211.75	tons, locomotive[4]
32	tons, covered hopper railcar (empty)[5]
307.75	tons, weight, per train, unloaded
69,346	tons, weight of unloaded trains, annual
57,461	tons, weight of freight, annual
126,808	tons, total weight to FL per year

Facility Information:[6]

3	railcars per train
13	railcars/week
4	trains/week
225	trains/year
41,472,000	lb/year, corn used annually
33,792,000	lb/year, cornmeal used annually
39,658,894	lb/year, oil used annually

Notes:

[1] Criteria air pollutant emissions are calculated by multiplying emission factors by the total locomotive weight and trip length.

[2] Total locomotive weight includes the weight of the locomotive, railcars, and loaded freight containers.

[3] Criteria air pollutant emissions within San Joaquin Valley were calculated by multiplying the total locomotive emissions by the percentage of the rail route that is within the SJVAPCD. The rail route breakdown in shown in **Table 13**.

[4] Locomotive weight estimated from 2014 fleet data for Norfolk Southern. Available: https://www.epa.gov/sites/production/files/2014-08/documents/smith.pdf. Accessed: August 2020.

[5] Large covered hopper weight estimated using the load limit and gross weight for Union Pacific covered hoppers. Available: https://www.up.com/customers/all/equipment/descriptions/covered_hoppers/index.htm. Accessed: August 2020.

[6] Railcar delivery frequency and freight quantities as provided by the facility via data request.

Abbreviations:

CO - carbon monoxide
g - gram
HC - hydrocarbon
lb - pound
mi - mile
NO_x - nitrogen oxide compounds (NO + NO_2)
$PM_{2.5}$ -particulate matter less than 2.5 microns in diameter
PM_{10} - particulate matter less than 10 microns in diameter
ROG - reactive organic gas
SJVAPCD - San Joaquin Valley Air Pollution Control District
SO_2 - sulfur dioxide

Table D.16. GHG Emission Factors for Locomotives
Frito-Lay, Inc.
Modesto, CA

	CO_2[1]	CH_4[2]	N_2O[2]	CO_2e
Emission Factors (g/gal)	10,202	0.80	0.26	10,299
Emission Factors (g/ton-mile)[3]	35.72	0.003	0.001	36.06

Conversion Factors and Constants:

248,707,812,000	ton-miles, freight trains[3]
870,814,873	gallons of diesel fuel consumed, freight trains[3]
285.6	ton-mile/gal
3,200	g/gal, density of diesel[1]
44.01	g/mol, molecular weight of carbon dioxide
12.01	g/mol, molecular weight of carbon
87%	carbon content of diesel fuel by mass[1]

Global Warming Potentials:

CO_2	1
CH_4	25
N_2O	298

Notes:

[1] CO_2 emission factors were calculated using methodology outlined in US EPA guidance, Emission Factors for Locomotives. Available: https://nepis.epa.gov/Exe/ZyPDF.cgi/P100500B.PDF?Dockey=P100500B.PDF. Accessed: December 2020.

[2] CH_4 and N_2O emission factors obtained from Table 5 in US EPA guidance, Emission Factors for Greenhouse Gas Inventories. Emission factors chosen are for Diesel Locomotives. Available: https://www.epa.gov/sites/production/files/2015-07/documents/emission-factors_2014.pdf. Accessed: December 2020.

[3] Emission factors were converted from grams per gallon to grams per ton-mile using the total ton-miles that Union Pacific freight trains travelled in 2019 and the total gallons of diesel fuel consumed by Union Pacific freight trains in 2019. These values were taken from pages 86 and 93, respectively, of the 2019 Union Pacific Class I Railroad Annual Report. Available: https://www.up.com/cs/groups/public/@uprr/@investor/documents/investordocuments/pdf_up_r1_2019.pdf. Accessed: August 2020.

Abbreviations:

CH_4 - methane

CO_2 - carbon dioxide

CO_2e - carbon dioxide equivalents

g - gram

gal - gallon

mol - mole

N_2O - nitrous oxide

US EPA - United States Environmental Protection Agency

Table D.17. GHG Emissions from Locomotives
Frito-Lay, Inc.
Modesto, CA

	CO_2	CH_4	N_2O	CO_2e
Incremental Emissions (ton/year)[1,2]	2,130	0.17	0.05	2,150
Incremental SJVAPCD Emissions (MT/year)[3]	581	0.05	0.01	586

Conversions and Constants:

2,000	lb/ton
52	week/year
907,185	g/ton
1.10231	ton/metric ton
213	mi, one-way trip length
211.75	tons, locomotive[4]
32	tons, covered hopper railcar (empty)[5]
307.75	tons, weight, per train, unloaded
69,346	tons, weight of unloaded trains, annual
57,461	tons, weight of freight, annual
126,808	tons, total weight to Frito Lay per year

Facility Information:[6]

3	railcars per train
13	railcars/week
4	trains/week
225	trains/year
41,472,000	lb/year, corn used annually
33,792,000	lb/year, cornmeal used annually
39,658,894	lb/year, oil used annually

Notes:

[1] Greenhouse gas emissions are calculated by multiplying emission factors by the total locomotive weight and trip length.

[2] Total locomotive weight includes the weight of the locomotive, railcars, and loaded freight containers.

[3] Greenhouse emissions within San Joaquin Valley were calculated by multiplying the total locomotive emissions by the percentage of the rail route that is within the SJVAPCD. This methodology in shown in **Table 13**.

[4] Locomotive weight estimated from 2014 fleet data for Norfolk Southern. Available: https://www.epa.gov/sites/production/files/2014-08/documents/smith.pdf. Accessed: August 2020.

[5] Large covered hopper weight estimated using the load limit and gross weight for Union Pacific covered hoppers. Available: https://www.up.com/customers/all/equipment/descriptions/covered_hoppers/index.htm. Accessed: August 2020.

[6] Railcar delivery frequency and freight quantities as provided by the facility via data request.

Abbreviations:

CH_4 - methane

CO_2 - carbon dioxide

CO_2e - carbon dioxide equivalents

g - gram

lb - pound

mi - mile

MT - metric ton

N_2O - nitrous oxide

SJVAPCD - San Joaquin Valley Air Pollution Control District

Table D.18. Locomotive CAP Emissions in Other Air Districts and Associated Threshold Comparisons
Frito-Lay, Inc.
Modesto, CA

Air District		ROG	CO	SO_2	NO_x	PM_{10}	$PM_{2.5}$
Sacramento	Threshold[1] (lb/day)	65	--	--	65	80	82
	Percentage of Emissions in District[2]	13.1%	--	--	13.1%	13.1%	13.1%
	Total Emissions (lb/day)	0.5	--	--	10.3	0.2	0.2
	Exceeds Threshold?	**No**	**--**	**--**	**No**	**No**	**No**
Yolo-Solano	Threshold[3] (tpy)	10	--	--	10	14.6	--
	Percentage of Emissions in District[2]	8.6%	--	--	8.6%	8.6%	--
	Total Emissions (tpy)	0.06	--	--	1.23	0.10	--
	Exceeds Threshold?	**No**	**--**	**--**	**No**	**No**	--
Placer	Threshold[4] (lb/day)	55	--	--	55	82	--
	Percentage of Emissions in District[2]	39.0%	--	--	39.0%	39.0%	--
	Total Emissions (lb/day)	1.5	--	--	30.6	0.5	--
	Exceeds Threshold?	**No**	**--**	**--**	**No**	**No**	--
Northern Sierra	Threshold[5] (lb/day)	24	--	--	24	79	--
	Percentage of Emissions in District[2]	9.3%	--	--	9.3%	9.3%	--
	Total Emissions (lb/day)	0.4	--	--	7.3	0.1	--
	Exceeds Threshold?	**No**	**--**	**--**	**No**	**No**	--

Conversion Factors:

2000 lb/ton
365 day/year

Notes:

[1] SMAQMD Thresholds of Significance Table taken from the District's CEQA Guide. Available: http://www.airquality.org/LandUseTransportation/Documents/CH2ThresholdsTable4-2020.pdf. Accessed: August 2020.

[2] Percentage of railcar emissions in each district were based on the mileage that trains will travel in each district. These distances were measured in ArcGIS Pro.

[3] YSAQMD Thresholds of Significance for Criteria Pollutants of Concern taken from Table 1 of the District's Handbook for Assessing and Mitigating Air Quality Impacts. Available: http://www.ysaqmd.org/wp-content/uploads/Planning/CEQAHandbook2007.pdf. Accessed: August 2020.

[4] Operational phase project-level criteria pollutant thresholds found on PCAPCD website. Available: https://www.placer.ca.gov/1804/CEQA-Thresholds. Accessed: August 2020.

[5] NSAQMD thresholds taken from District Guidelines for Assessing and Mitigating Air Quality Impacts of Land Use Projects. Thresholds shown are Level A thresholds. Available: https://www.mynevadacounty.com/DocumentCenter/View/15131/NSAQMD-Attachment-Land-Use-Guidelines-PDF. Accessed: August 2020.

Abbreviations:

CEQA - California Environmental Quality Act
CO - carbon monoxide
lb - pound
NO_x - nitrogen oxide compounds (NO + NO_2)
NSAQMD - Northern Sierra Air Quality Management District
PCAPCD - Placer County Air Pollution Control District
$PM_{2.5}$ -particulate matter less than 2.5 microns in diameter
PM_{10} - particulate matter less than 10 microns in diameter
ROG - reactive organic gas
SMAQMD - Sacramento Metropolitan Air Quality Management District
SO_2 - sulfur dioxide
tpy - tons per year
YSAQMD - Yolo-Solano Air Quality Management District

Table D.19. Locomotive GHG Emissions in Other Air Districts and Associated Threshold Comparisons
Frito-Lay, Inc.
Modesto, CA

Air District		CO_2e
Sacramento	Threshold[1] (MT/year)	1,100
	Percentage of Emissions in District[2]	13.1%
	Total Emissions (MT/year)	281.7
	Exceeds Threshold?	**No**
Yolo-Solano	Threshold (MT/year)	--
	Percentage of Emissions in District[2]	--
	Total Emissions (MT/year)	--
	Exceeds Threshold?	--
Placer	Threshold[3] (MT/year)	1,100
	Percentage of Emissions in District[2]	39.0%
	Total Emissions (MT/year)	838.4
	Exceeds Threshold?	**No**
Northern Sierra	Threshold[4] (MT/year)	1,100
	Percentage of Emissions in District[2]	9.3%
	Total Emissions (MT/year)	200.3
	Exceeds Threshold?	**No**

Conversion Factors:

2000 lb/ton
365 day/year

Notes:

[1] SMAQMD Thresholds of Significance Table taken from the District's CEQA Guide. For comparison purposes, the threshold here is for construction. Operational compliance is demonstrated via consistency with the Climate Change Scoping Plan. Available: http://www.airquality.org/LandUseTransportation/Documents/CH2ThresholdsTable4-2020.pdf. Accessed: December 2020.

[2] Percentage of railcar emissions in each district were based on the mileage that trains will travel in each district. These distances were measured in ArcGIS Pro.

[3] Greenhouse gas thresholds found on PCAPCD website. Value shown is the de minimis level. Available: https://www.placer.ca.gov/1804/CEQA-Thresholds. Accessed: December 2020.

[4] Per guidance, operational emissions would not have a significant impact on the environment if projected GHG emissions are less than 1,100 metric trons of CO2e per year. Available: https://www.mynevadacounty.com/DocumentCenter/View/11224/90-Greenhouse-Gas-Emissions-PDF. Accessed: December 2020.

Abbreviations:

CEQA - California Environmental Quality Act
CO_2e - carbon dioxide equivalents
GHG - greenhouse gas
lb - pound
MT - metric ton
PCAPCD - Placer County Air Pollution Control District
SMAQMD - Sacramento Metropolitan Air Quality Management District

Table D.20. Criteria Air Pollutant Mobile Source Emissions
Frito-Lay, Inc.
Modesto, CA

Mobile Source Activity	Incremental Project Emissions[1] (ton/year)					
	ROG	**CO**	**SO_2**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
Passenger Car Trips[2]	0.03	0.85	0.00	0.02	0.08	0.03
Truck Trips[2]	-0.16	9.44	-0.02	-5.10	-0.12	-0.10
Train Trips[3]	0.21	1.67	0.01	4.30	0.06	0.06
Total Emissions[4]	**0.1**	**12.0**	**0.0**	**-0.8**	**0.0**	**0.0**

Notes:

[1] Mobile source emissions shown in this table only represent changes expected to occur as a result of the project.

[2] Emissions from passenger cars and trucks as calculated in **Table 12**.

[3] Emissions from trains as calculated in **Table 15**.

[4] CAP totals are the sum of emissions expected from passenger cars, trucks, and trains.

Abbreviations:

CAP - criteria air pollutant

CO - carbon monoxide

NO_x - nitrogen oxide compounds (NO + NO_2)

$PM_{2.5}$ -particulate matter less than 2.5 microns in diameter

PM_{10} - particulate matter less than 10 microns in diameter

ROG - reactive organic gas

SO_2 - sulfur dioxide

Table D.21. Greenhouse Gas Mobile Source Emissions
Frito-Lay, Inc.
Modesto, CA

Mobile Source Activity	Incremental Project Emissions[1] (MT/year)			
	CO_2	**CH_4**	**N_2O**	**CO_2e**
Passenger Car Trips[2]	423	0.01	0.01	425
Truck Trips[2]	666	2.4	0.22	790
Train Trips[3]	581	0.05	0.01	586
Total Emissions[4]	**1,669**	**2.4**	**0.237**	**1,801**

Notes:

[1] Mobile source emissions shown in this table only represent changes expected to occur as a result of the project.

[2] Emissions from passenger cars and trucks as calculated in **Table 12**.

[3] Emissions from trains as calculated in **Table 17**.

[4] GHG totals are the sum of emissions expected from passenger cars, trucks, and trains.

Abbreviations:

CH_4 - methane

CO_2 - carbon dioxide

CO_2e - carbon dioxide equivalents

GHG - greenhouse gas

MT - metric ton

N_2O - nitrous oxide

Table D.22. GHG Emissions from Water Usage
Frito-Lay, Inc.
Modesto, CA

Land Use	Water Usage (Mgal/year)	*Incremental GHG Emissions (MT/year)*			
		Total CO_2	**CH_4**	**N_2O**	**CO_2e**
Manufacturing	105.12	90.84	3.43	0.08	201.23

Notes:
[1] Emissions estimated using CalEEMod® version 2016.3.2.

Abbreviations:
CalEEMod® - California Emissions Estimator Model
CH_4 - methane
CO_2 - carbon dioxide
CO_2e - carbon dioxide equivalents
GHG - greenhouse gas
Mgal - million gallons
MT - metric ton
N_2O - nitrous oxide

From Project Description:

200	gallon/min
105120000	gallon/year

Table D.23. GHG Emissions from Solid Waste Disposal
Frito-Lay, Inc.
Modesto, CA

Land Use	Waste Disposed (tons)	*Incremental GHG Emissions [2] (MT/year)*			
		Total CO_2	CH_4	N_2O	CO_2e
Manufacturing	74.81	15.19	0.90	--	37.62

Notes:

[1] Amount of waste disposed calculated by scaling the weight of non-hazardous waste created by the facility in 2020, using the increased capacity of the facility after the Project.

[2] Emissions estimated using CalEEMod® version 2016.3.2.

Abbreviations:

CalEEMod® - California Emissions Estimator Model

CH_4 - methane

CO_2 - carbon dioxide

CO_2e - carbon dioxide equivalents

GHG - greenhouse gas

MT - metric ton

N_2O - nitrous oxide

Table D.24. Net Change in CAP Emissions Expected after Project Implementation
Frito-Lay, Inc.
Modesto, CA

	Incremental CAP Emissions[1] (tons/year)					
	ROG	**CO**	**SO_2**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
Area Sources[2]	0.8	0.0	--	0.0	0.0	0.0
Natural Gas Usage[3]	0.6	4.4	0.0	5.3	0.4	0.4
Mobile Emissions[4]	0.1	12.0	0.0	-0.8	0.0	0.0
Totals[5]	**1.5**	**16.4**	**0.02**	**4.5**	**0.4**	**0.4**
SJVAPCD Thresholds[6]	**10**	**100**	**27**	**10**	**15**	**15**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes:

[1] CAP emissions shown in this table only represent changes expected to occur as a result of the project.

[2] Emissions from area sources as calculated in **Table 1**.

[3] Emissions from natural gas usage as calculated in **Table 4**.

[4] Emissions from mobile sources as shown in **Table 20**.

[5] Total CAP emissions account for emissions from area sources, natural gas usage, and mobile emissions.

[6] Thresholds shown are SJVAPCD Air Quality Thresholds of Significance Operational Emissions:Non-Permitted Equipment and Activities. Available: http://www.valleyair.org/transportation/0714-GAMAQI-Criteria-Pollutant-Thresholds-of-Significance.pdf. Accessed: December 2020.

Abbreviations:

CAP - criteria air pollutant

CO - carbon monoxide

NO_x - nitrogen oxide compounds (NO + NO_2)

$PM_{2.5}$ -particulate matter less than 2.5 microns in diameter

PM_{10} - particulate matter less than 10 microns in diameter

ROG - reactive organic gas

SJVAPCD - San Joaquin Valley Air Pollution Control District

SO_2 - sulfur dioxide

Table D.25. Net Change in GHG Emissions Expected after Project Implementation
Frito-Lay, Inc.
Modesto, CA

	Incremental GHG Emissions[1] (MT/year)			
	CO_2	**CH_4**	**N_2O**	**CO_2e**
Area Sources[2]	0.0	0.0	--	0.0
Electricity Usage[3]	1,771	0.2	0.049	1,791
Natural Gas Usage[4]	5,722	0.1	0.1	5,756
Mobile Emissions[5]	1,669	2.4	0.237	1,801
Water Usage[6]	91	3.4	0.1	201
Solid Waste Disposal[7]	15	0.9	--	38
Totals[8]	**9,268**	**7.1**	**0.5**	**9,587**

Notes:

[1] GHG emissions shown in this table only represent changes expected to occur as a result of the project.

[2] Emissions from area sources as calculated in **Table 1**.

[3] Emissions from electricity usage as calculated in **Table 3**.

[4] Emissions from natural gas usage as calculated in **Table 4**.

[5] Emissions from mobile sources as shown in **Table 21**.

[6] Emissions from water usage as shown in **Table 22**.

[7] Emissions from solid waste disposal as shown in **Table 23**.

[8] Total GHG emissions account for emissions from area sources, natural gas usage, electricity usage, mobile emissions, water usage, and solid waste disposal.