TECHNICAL MEMORANDUM

TO: Caitlin Gilleran, Panorama Environmental

FROM: Michael Ratte, RCH Group

DATE: June 2, 2017

SUBJECT: CPUC Fulton to Fitch Air Quality Impacts

PG&E proposes to reinforce the electric transmission system in Sonoma County by replacing the conductor on a 9.9-mile-long section of the Fulton-Hopland 60 kV Power Line (Fulton-Hopland Line) between the communities of Fulton and Healdsburg. Construction would involve fourteen (generally sequential) phases: Survey, Vegetation Removal and Trimming, Site Improvements and Reestablishment, Drainage Crossings, Auger LDS Pole Holes, Pole Delivery, Material, Equipment, Supply Haul, LDS Pole Install – Ground, Conductor Installation, Auger TSP Holes, TSP Installation, Restoration and Cleanup, Circuit Breaker Installation, and LDS Pole Install – Aerial, Road Subgrade Preparation, and Asphalt Road Paving. Construction activities are expected to commence in July of 2018 and be completed in January of 2020. An air quality impact analysis was conducted to estimate the air quality impacts due to the construction and operation of the proposed project. This air quality impact assessment provides the basis for preparing the air quality analyses in the CEQA Initial Study. **Attachment A** provides a detailed summary of the construction emissions inventory. **Attachment B** provides the construction equipment schedule and other assumptions for the construction emissions inventory. **Attachment** C provides the emissions estimation output for the construction off-road equipment.

Air Quality Overview

Primary air emissions from the proposed project include construction emissions associated with fugitive dust (from grading, loading/unloading, and vehicle movement on unpaved surfaces), heavy construction equipment (cranes, loaders, excavators, etc), helicopter usage (fugitive dust and combustion emissions), and construction workers commuting to and from the project site. Operation and maintenance activities that would affect air quality will not increase as a result of the proposed project.

The air quality analysis is consistent with the methods described in the Bay Area Air Quality Management District (BAAQMD) *CEQA Air Quality Guidelines* (dated June 2010, updated in May 2011, and revised in May 2012).[1] Mitigation measures are presented to reduce impacts to less than significant, as applicable.

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[1] The Air District's June 2010 adopted thresholds of significance were challenged in a lawsuit. Although the BAAQMD's adoption of significance thresholds for air quality analysis has been subject to judicial actions, the lead

The air quality analysis includes a review of criteria pollutant[2] emissions such as carbon monoxide (CO)[3], nitrogen oxides (NO_x), sulfur dioxide (SO_2), volatile organic compounds (VOC) as reactive organic gases (ROG)[4], particulate matter less than or equal to 10 micrometers (coarse particulate or PM10), particulate matter less than or equal to 2.5 micrometers (fine particulate or PM2.5).[5] The air quality analysis also addresses health impacts due to air toxics emissions such as diesel particulate matter (DPM). Impacts on climate change are addressed through a greenhouse gas (GHG) emissions inventory.

Regulatory models used to estimate air quality impacts include (but not limited to):

- California Air Resources Board's (CARB) EMFAC[6]emissions inventory model. EMFAC is the latest emission inventory model that calculates emission inventories and emission rates for motor vehicles operating on roads in California. This model reflects CARB's current understanding of how vehicles travel and how much they emit. EMFAC can be used to show how California motor vehicle emissions have changed over time and are projected to change in the future.
- CARB OFFROAD[7] emissions inventory model. OFFROAD is the latest emission inventory model that calculates emission inventories and emission rates for off-road equipment such as loaders, excavators, and off-road haul trucks operating in California. This model reflects CARB's current understanding of how equipment operates and how much they emit. OFFROAD can be used to show how California off-road equipment emissions have changed over time and are projected to change in the future.

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agency has determined that BAAQMD's Revised Draft Options and Justification Report (October 2009) provide substantial evidence to support the BAAQMD recommended thresholds. Therefore, the lead agency has determined the BAAQMD recommended thresholds are appropriate for use in this analysis.

2 Criteria air pollutants refer to those air pollutants for which the United States Environmental Protection Agency (USEPA) and California Air Resources Board (CARB) has established National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) under the Federal Clean Air Act (CAA).

3 CO is a non–reactive pollutant that is a product of incomplete combustion of organic material, and is mostly associated with motor vehicle traffic, and in wintertime, with wood–burning stoves and fireplaces.

4 VOC means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions and thus, a precursor of ozone formation. ROGs are any reactive compounds of carbon, excluding methane, CO, CO_2, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and other exempt compounds. The terms VOC and ROG are often used interchangeably.

5 PM10 and PM2.5 consists of airborne particles that measure 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. PM10 and PM2.5 represent fractions of particulate matter that can be inhaled into the air passages and the lungs, causing adverse health effects.

6 CARB EMFAC2014 User's Guide, April 30, 2014, https://www.arb.ca.gov/msei/msei.htm

7 CARB OFFROAD Instructions, http://www.arb.ca.gov/msprog/ordiesel/info_1085/oei_write_up.pdf

- CalEEMod (California Emissions Estimator Model Version 2013.2.2)[8] land use emissions model estimates emissions due to demolition and construction activities and operations.[9]

The northern segment of the proposed project is located within the Northern Sonoma County Air Pollution Control District (NSCAPCD), which covers the northern and coastal regions of Sonoma County.[10] The NSCAPCD is designated "attainment" or "unclassifiable" for all pollutants. The BAAQMD and San Francisco Bay Area Air Basin encompasses Alameda, Contra Costa, Santa Clara, San Francisco, San Mateo, Marin, and Napa Counties, and the southern portions of Solano and Sonoma Counties. The southern segment of the proposed project is located within the BAAQMD. The Bay Area Air Basin is currently designated "nonattainment" for state and national (1-hour and 8-hour) ozone standards, for the state PM10 standards, and for state and national (annual average and 24-hour) PM2.5 standards. ROG and NO_x are precursors to ozone formation. The Bay Area is designated "attainment" or "unclassifiable" with respect to the other ambient air quality standards.

Thresholds of Significance

The BAAQMD *CEQA Air Quality Guidelines* thresholds of significance applied to assess project-level air quality impacts are:

- Average daily construction exhaust emissions of 54 pounds per day of ROG, NO_x, or PM2.5 or 82 pounds per day of PM10;
- Average daily operation emissions of 54 pounds per day of ROG, NO_x, or PM2.5 or 82 pounds per day of PM10; or result in maximum annual emissions of 10 tons per year of ROG, NO_x, or PM2.5 or 15 tons per year of PM10;
- Exposure of persons by siting a new source or a new sensitive receptor to substantial levels of air toxics resulting in (a) a cancer risk level greater than 10 in one million, (b) a noncancerous risk (chronic or acute) hazard index greater than 1.0, or (c) an increase of annual average PM2.5 of greater than 0.3 micrograms per cubic meter ($\mu g/m^3$). For this threshold, sensitive receptors include residential uses, schools, parks, daycare centers, nursing homes, and medical centers; and
- Frequently and for a substantial duration, create or expose sensitive receptors to substantial objectionable odors affecting a substantial number of people.

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[8] CARB California Emissions Estimator Model User's Guide, July 2013. http://www.caleemod.com/

[9] On October 14 of 2016, the California Air Pollution Control Officers Association released an upgrade to CalEEMod (Version 2016.3.1). The upgrades include the use of CARB's OFFROAD and EMFAC2014 emissions model (the previous version used the EMFAC2011 emissions model) updates and trip rates from Institute of Transportation Engineers 9th edition of the Trip Generation Manual (the previous version used the 8th edition). The likely outcome of the model update for the proposed project is that the reported estimated emissions are slightly higher (conservative) than the values with the upgraded (CalEEMod 2016.3.1) version.

[10] The dividing line begins just West of Valley Ford, going North past the East end of the Occidental area. It then runs Northeast between Graton and Forestville, and cuts across the Northwest corner of the Windsor city limit. It then runs due East all the way to the East edge of Sonoma County; http://sonomacounty.ca.gov/TPW/Air-Quality/Air-Quality-District-Boundaries/

The BAAQMD *CEQA Air Quality Guidelines* also identify a project-specific threshold of 1,100 metric tons of CO_2e per year, which is also considered a cumulatively considerable contribution to the global GHG burden.

NSCAPCD has adopted the BAAQMD *CEQA Air Quality Guidelines* and thresholds of significance.

Construction Air Quality Impacts

The proposed project would generate short-term emissions of air pollutants, including fugitive dust and equipment exhaust emissions from construction activities. The BAAQMD *CEQA Air Quality Guidelines* recommend quantification of construction-related exhaust emissions and comparison of those emissions to significance thresholds. The CalEEMod (California Emissions Estimator Model) was used to quantify construction-related pollutant emissions for the proposed project.

Construction activities are expected to commence in July of 2018 with project site surveys, followed by additional site preparation and construction tasks. Construction activities are expected to be completed by the end of January of 2020 with aerial pole installation. During the 19 month period there will be some periods in which construction activity is dormant (i.e., to avoid wildlife migration, rainy season, etc.) such that the active construction activities would occur over a thirteen month period. A total of approximately 2,132 haul truck trips were estimated during site improvements and a total of approximately 800 haul trucks were estimated during pole delivery, LDS pole installation and TSP installation, and 90 haul trucks were estimated during the Fitch Substation pavement installation. An average daily construction crew of 14 employees would be present.

Helicopter operations are assumed to occur daily (up to ten hours per day and seven days per week) and involve a Hughes 500D or similar (small helicopter) and/or Bel1 214B or similar (large helicopter) depending on the duties required. Helicopter activities would include landing and takeoffs (LTO) and cruise operations. Helicopter activity would involve a total of 742 operations; which is approximately 728 operations (52 weeks of operations) for the Hughes 500D and approximately 14 operations (two weeks of operations) for the Bell 214B. A single Hughes 500D helicopter may be used in the Southern Segment for approximately two to three hours on two separate occasions. At least one Hughes 500D helicopter may be used each day construction occurs in the Northern Segment (approximately 10 to 12 months) and up to three helicopters (two Hughes 500D and one Bell 214B) may be used simultaneously during peak construction periods (approximately 8 to 11 days).

Table 1 provides the estimated construction exhaust emissions that would be associated with the proposed project and compares those emissions to the BAAQMD's significance thresholds for construction emissions. Notably, BAAQMD's significance thresholds for construction emissions do not include fugitive dust. As the construction phases are sequential, the average daily construction period emissions (i.e., total construction emissions divided by the number of construction days or 390 days) were compared to the BAAQMD significance thresholds. Of the

9.9 mile proposed project length between the communities of Fulton and Healdsburg,[11] approximately 3.6 miles (34 percent) is located within the NSCAPCD and approximately 6.3 miles (66 percent) is located within the BAAQMD. The air emissions were apportioned accordingly. **Table 1** shows the air emissions without and with the Applicant Proposed Measures (APM) to reduce fugitive dust and combustion exhaust emissions.

The following provides a summary of the construction emissions:

- Construction-related ROG, NOx, PM10, and PM2.5 exhaust emissions would be below the significance thresholds within NSCAPCD, and thus, a less than significant impact on air quality within the NSCAPCD.
- Construction-related ROG, NOx, PM10, and PM2.5 exhaust emissions would be below the significance thresholds within BAAQMD, and thus, a less than significant impact on air quality within the BAAQMD.

Table 1: Estimated Average Daily Construction Exhaust Emissions (pounds)

Condition	ROG	NO_x	PM10	PM2.5	CO
	Without APM				
Construction Equipment and Vehicles	2.33	38.3	1.18	1.17	34.9
Helicopter Activities	54.0	23.2	0.76	0.76	68.3
Total Proposed Project	**56.3**	**61.6**	**1.94**	**1.92**	**103**
Total Proposed Project within NSCAPCD	**19.1**	**20.9**	**0.66**	**0.65**	**35.1**
Total Proposed Project within BAAQMD	**37.2**	**40.6**	**1.28**	**1.27**	**68.1**
BAAQMD Significance Threshold	54	54	82	54	---
Potentially Significant (Yes or No)?	No	No	No	No	No
	APM AIR-1 and AIR-2				
Construction Equipment and Vehicles	2.21	36.4	1.12	1.11	33.2
Helicopter Activities	54.0	23.2	0.76	0.76	68.3
Total Proposed Project	**56.2**	**59.6**	**1.88**	**1.87**	**102**
Total Proposed Project within NSCAPCD	**19.1**	**20.3**	**0.64**	**0.63**	**34.5**
Total Proposed Project within BAAQMD	**37.1**	**39.4**	**1.24**	**1.23**	**67.0**
BAAQMD Significance Threshold	54	54	82	54	---
Potentially Significant (Yes or No)?	No	No	No	No	No

SOURCES: CalEEMod Version 2013.2.2 and FOCA Guidance on Determination of Helicopter Emissions, Edition 1, March 2009.

Applicant Proposed Measures

The BAAQMD's *CEQA Air Quality Guidelines* consider construction-related air quality impacts to be less than significant if best management practices are employed to reduce construction-related emissions. PG&E shall implement the following APM to further reduce fugitive dust and combustion exhaust emissions:

[11] The boundary between NSCAPCD and BAAQMD is near the intersection of Mount Weske Drive and Brookes Road along the proposed project.

APM AIR-1: Fugitive Dust Emissions

Per BAAQMD *CEQA Air Quality Guidelines*, PG&E shall implement the following Applicant Proposed Measures to further reduce fugitive dust emission:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) in active construction zones shall be watered two times per day during dry conditions.
- All haul trucks transporting soil, sand, or other loose material off site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers or equivalent method at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles-per-hour.
- Post a publicly visible sign with the telephone number and person to contact at PG& regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.
- Helicopter landing zone shall be watered prior to takeoff and landings.

APM AIR-2: Exhaust Emissions

Per BAAQMD *CEQA Air Quality Guidelines*, PG&E shall implement the following Applicant Proposed Measures to further reduce exhaust emission:

- Minimize unnecessary construction vehicle idling time. The ability to limit construction vehicle idling time will depend on the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel-powered vehicles, have extended warm-up times following start-up that limit their availability for use following start-up. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The project will apply a "common sense" approach to vehicle use, so that idling is reduced as far as possible below the maximum of five consecutive minutes allowed by California law; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen will include briefings to crews on vehicle use as part of pre-construction conferences. Those briefings will include discussion of a "common sense" approach to vehicle use. Clear signage shall be provided for construction workers at all access points indicating idling restrictions.
- All construction equipment shall be regularly maintained in accordance with PG&E standards. All equipment shall be checked by a certified visible emissions evaluator.

APM AIR-1 is estimated to reduce fugitive dust emissions by 80 percent. Notably, with ***APM AIR-1***, fugitive dust emissions during the construction period would decrease from 8.3 tons to 1.8 tons of PM10 and decrease from 0.9 tons to 0.2 tons of PM2.5. ***APM AIR-2*** is estimated to reduce combustion exhaust emissions by three percent.

In conclusion, construction-related ROG, NO_x, PM10, and PM2.5 exhaust emissions with ***APM AIR-1 through AIR-2*** would be below the significance thresholds within each air district, and thus, a less than significant air quality impact within the BAAQMD and within the NSCAPCD.

Operational Air Quality Impacts

Other than the use of sulfur hexafluoride (SF_6) circuit breakers (and associated GHG emissions), operation and maintenance activities that would affect air quality will not increase as a result of the proposed project. PG&E will continue to employ standard Best Management Practices—such as minimizing vehicle trips and keeping vehicles and equipment well maintained—during operation of the proposed project.

Health Impacts

Diesel-powered equipment and vehicles such as haul trucks, back hoes, and cranes would be used during construction of the proposed project. Operation of diesel-powered equipment would generate diesel exhaust emissions. Diesel exhaust is a complex mixture of gases and fine particles and includes over 40 substances that are listed by the USEPA as hazardous air pollutants and by the CARB as toxic air contaminants.[12] Additionally, helicopters would be operated throughout construction which, depending upon engine type, may be fueled by either aviation turbine fuel or aviation gasoline, which can also contain air toxics such as formaldehyde.

Some receptors are considered more sensitive to air pollutants than others, because of preexisting health problems, proximity to the emissions source, or duration of exposure to air pollutants. Land uses such as primary and secondary schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because the very young, the old, and the infirm are more susceptible to respiratory infections and other air quality-related health problems than the general public. Residential areas are also considered sensitive to poor air quality because people in residential areas are often at home for extended periods. Recreational land uses are moderately sensitive to air pollution because vigorous exercise associated with recreation places having a high demand on respiratory system function. Children under 16 years are more susceptible to carcinogens compared to adults. As such, child care centers and schools are higher risk sensitive receptors.

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[12] In August of 1998, CARB identified particulate emissions from diesel-fueled engines as a toxic air contaminant. CARB developed the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. The document represents a proposal to reduce diesel particulate emissions, with the goal to reduce emissions and the associated health risk by 75 percent in 2010 and by 85 percent in 2020. The program aims to require the use of state-of-the-art catalyzed diesel particulate filters and ultra-low sulfur diesel fuel on diesel-fueled engines.

Diesel particulate matter (DPM) is the most complex of diesel emissions. Diesel particulates, as defined by most emission standards, are sampled from diluted and cooled exhaust gases. This definition includes both solid and liquid material that condenses during the dilution process. The basic fractions of DPM are elemental carbon; heavy hydrocarbons derived from the fuel and lubricating oil and hydrated sulfuric acid derived from the fuel sulfur. DPM contains a large portion of the polycyclic aromatic hydrocarbons found in diesel exhaust. Diesel particulates include small nuclei particles of diameters below 0.04 micrometers (μm) and their agglomerates of diameters up to 1 μm.

Within the project area, the majority of the sensitive receptors including child care centers, schools, residences, and elder care facilities are located along the Southern Segment. Construction vehicles and trucks carrying construction equipment to and from work sites would travel along construction routes to and from staging yards in the vicinity of sensitive receptors. Truck traffic and associated diesel exhaust would increase for approximately three months at any one sensitive receptor during construction of this segment. Residences were identified within varying distances to the project area, as close as being adjacent to the existing PG&E right-of-way and 130 feet from the closest pole construction location along the transmission line corridor. The Fulton-Shiloh segment runs adjacent to many residential receptors living in the Larkfield-Wikiup residential neighborhood and is very close to schools such as Mark West Elementary School and San Miguel Elementary School.

In accordance with California Code of Regulations (CCR) § 2485, trucks with a gross vehicle weight rating over 10,000 pounds must not idle longer than five consecutive minutes except under extenuating circumstances. As required by CCR § 2480, a vehicle stopping at or within 100 feet of a school must not idle for more than 30 seconds. Idling restriction regulations would limit impacts to sensitive receptors in the vicinity of the staging yards, construction routes, and work areas in the Southern Segment. Construction would be limited in duration and scope along the Southern Segment. Receptors located near the five landing zones may experience increased emissions during helicopter take-off and landing activities. However, given the type of construction requirements, helicopter activities along the Southern Segment will be infrequent during the construction period and will be divided between five different landing zones.

Construction-related emissions would be short term in duration. Secondly, due to the linear nature of the proposed project, emissions would generally only occur for a few days to a week at a given location. Therefore, it is not anticipated that exposure to construction-related DPM or other air toxics would result in an adverse health impacts and health impacts to sensitive receptors would be less than significant.

Greenhouse Gas Emissions

"Global warming" and "global climate change" are the terms used to describe the increase in the average temperature of the earth's near-surface air and oceans since the mid-20th century and its projected continuation. Warming of the climate system is now considered to be unequivocal (IPCC, 2007), with global surface temperature increasing approximately 1.33 degrees Fahrenheit (°F) over the last 100 years. Continued warming is projected to increase global average temperature between 2 and 11°F over the next 100 years.

Natural processes and human actions have been identified as the causes of this warming. The International Panel on Climate Change (IPCC) concludes that variations in natural phenomena such as solar radiation and volcanoes produced most of the warming from pre-industrial times to 1950 and had a small cooling effect afterward. After 1950, however, increasing GHG concentrations resulting from human activity such as fossil fuel burning and deforestation have been responsible for most of the observed temperature increase. These basic conclusions have been endorsed by more than 45 scientific societies and academies of science, including all of the

national academies of science of the major industrialized countries. Since 2007, no scientific body of national or international standing has maintained a dissenting opinion.

Increases in GHG concentrations in the earth's atmosphere are thought to be the main cause of human-induced climate change. GHG naturally trap heat by impeding the exit of solar radiation that has hit the earth and is reflected back into space. Some GHG occur naturally and are necessary for keeping the earth's surface inhabitable. However, increases in the concentrations of these gases in the atmosphere during the last 100 years have decreased the amount of solar radiation that is reflected back into space, intensifying the natural greenhouse effect and resulting in the increase of global average temperature.

Gases that trap heat in the atmosphere are referred to as GHG because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse does. The accumulation of GHG has been implicated as the driving force for global climate change. The primary GHG are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), ozone, and water vapor.

While the presence of the primary GHG in the atmosphere are naturally occurring, CO_2, CH_4, and N_2O are also emitted from human activities, accelerating the rate at which these compounds occur within earth's atmosphere. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas methane results from off-gassing associated with agricultural practices and landfills. Other GHG include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, and are generated in certain industrial processes. Greenhouse gases are typically reported in "carbon dioxide-equivalent" measures (CO_2e).[13]

There is international scientific consensus that human-caused increases in GHG have and will continue to contribute to global warming. Potential global warming impacts in California may include, but are not limited to, loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include a global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.[14]

The estimated construction GHG emissions are 3,457 metric tons of CO_2e. As indicated, 30-year amortized annual construction related GHG emissions would be approximately 115 metric tons of CO_2e per year. The proposed project will not require a change in PG&E's existing O&M activities, with the exception of actions taken to address potential leakage of SF_6 from new circuit breakers, and will not result in a net change in long-term vehicle or equipment exhaust emissions. Estimated potential SF_6 emissions assume a one percent leak rate (36.2 metric tons of CO_2e per year), reduced to 0.5 percent (18.1 metric tons of CO_2e per year) through implementation of ***APM GHG***.

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[13] Because of the differential heat absorption potential of various GHG, GHG emissions are frequently measured in "carbon dioxide-equivalents," which present a weighted average based on each gas's heat absorption (or "global warming") potential.

[14] 2006 Final Climate Action Team Report to the Governor and Legislature. March 2006. http://www.climatechange.ca.gov/climate_action_team/reports/2006report/2006-04-03_FINAL_CAT_REPORT.PDF.

Estimated 30-year amortized construction and operational GHG emissions from the proposed project are presented in **Table 2**. The GHG construction and unmitigated operational emissions would be 151 metric tons of CO_2e per year. The GHG construction and mitigated operational emissions would be 133 metric tons of CO_2e per year. Therefore, the GHG emissions are below the BAAQMD significance threshold of 1,100 metric tons of CO_2e per year.

Table 2: Estimated Greenhouse Gas Emissions

Source	Annual CO_2e Metric Tons
Construction Equipment and Vehicles	933
Helicopter Activities	2,524
Total Proposed Project (Construction)	**3,457**
Total Proposed Project (30-Year Amortized Construction)	**115**
Operational Emissions (Without APM)	**36.2**
Total GHG Emissions (Construction plus Operational)	**151**
Operational Emissions (With APM GHG)	**18.1**
Total GHG Emissions (Construction plus Operational)	**133**
BAAQMD Significance Threshold	1,100
Potentially Significant (Yes or No)?	No

SOURCES: CalEEMod Version 2013.2.2 and FOCA Guidance on Determination of Helicopter Emissions, Edition 1, March 2009.

Operation and Maintenance of the proposed project will have less-than-significant GHG-related impacts. PG&E will continue to employ standard Best Management Practices—such as minimizing vehicle trips and keeping vehicles and equipment well maintained—during operations, and will comply with CARB Early Action Measures as these policies become effective. PG&E shall also implement the following mitigation measure that is specifically related to avoiding and minimizing potential SF_6 emissions:

APM GHG: Minimize SF_6 Emissions

- Incorporate the new circuit breakers at Fitch Mountain Substation into PG&E's system-wide SF_6 emission reduction program. CARB has adopted the Regulation for Reducing SF_6 Emissions from Gas-Insulated Switchgear (Sections 95350 to 95359, Title 17, California Code of Regulations), which requires that the company-wide SF_6 emission rate not exceed 1 percent by 2020. Since 1998, PG&E has implemented a programmatic plan to inventory, track, and recycle SF_6 inputs, and inventory and monitor system-wide SF_6 leakage rates to facilitate timely replacement of leaking breakers. PG&E has improved its leak detection procedures and increased awareness of SF_6 issues within the company. X-ray technology is now used to inspect internal circuit breaker components to eliminate dismantling of breakers, reducing SF_6 handling and accidental releases. PG&E is an active member of USEPA SF_6 Emission Reduction Partnership for Electrical Power Systems.
- Require that the new circuit breakers at Fitch Mountain Substation have a manufacturer's guaranteed maximum leakage rate of 0.5 percent per year or less for SF_6.

- Maintain the new substation circuit breakers in accordance with PG&E's maintenance standards.
- Comply with CARB Early Action Measures as these policies become effective.

Attachment A

Construction Emission Calculations

- Summary of Emissions w/o APM
- Summary of Emissions w/ APM AIR-1 and AIR-2
- Summary of Annual Emissions Onsite vs. Offsite w/o APM
- Summary of Annual Emissions Onsite vs. Offsite w/ APM AIR-1 and AIR-2
- Summary of Average Daily Emissions Onsite vs. Offsite w/o APM
- Summary of Average Daily Emissions Onsite vs. Offsite w/ APM AIR-1 and AIR-2
- Summary of Maximum Daily Emissions Onsite vs. Offsite w/o APMs
- Summary of Maximum Daily Emissions Onsite vs. Offsite w/ APM AIR-1 and AIR-2
- Vegetation Removal and Trimming
- EMFAC Emissions Calculations
- EMFAC2014 Data
- Equipment List Updates
- Helicopter Fugitive Emissions
- Helicopter Combustion Emissions

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Total Project Emissions w/o APM

	ROG	Nox	CO	SO2	Fugitive PM10	Exhaust PM10	Total PM10	Fugitive PM2.5	Exhaust PM2.5	Total PM2.5
	tons									
CalEEMod Total	0.3	7.5	5.6	0.0	0.2	0.2	0.4	0.1	0.2	0.3
EMFAC	0.0	0.0	0.1	0.0		0.0	0.0		0.0	0.0
Veg. Trim Equipment	0.1	0.0	1.0			0.0	0.0		0.0	0.0
Helicopters	10.5	4.5	13.3	1.3	8.2	0.1	8.3	0.8	0.1	1.0
Total	11.0	12.0	20.1	1.3	8.3	0.4	8.7	0.9	0.4	1.3

Average Daily Emissions w/o APM

	ROG	Nox	CO	SO2	Fugitive PM10	Exhaust PM10	Total PM10	Fugitive PM2.5	Exhaust PM2.5	Total PM2.5
	average lbs/day									
CalEEMod Total	1.5	38.2	28.8	0.1	0.8	1.1	1.9	0.3	1.1	1.4
EMFAC	0.0	0.1	0.7	0.0		0.0	0.0		0.0	0.0
Veg. Trim Equipment	0.7	0.0	5.3			0.1	0.1		0.1	0.1
Helicopters	54.0	23.2	68.3	6.4	42.0	0.8	42.7	4.2	0.8	5.0
Total	56.3	61.6	103	6.5	42.8	1.9	44.7	4.5	1.9	6.5

Peak Daily Emissions wo APM

	ROG	Nox	CO	SO2	Fugitive PM10	Exhaust PM10	Total PM10	Fugitive PM2.5	Exhaust PM2.5	Total PM2.5
	lbs/day									
CalEEMod Total	4.4	101	75.8	0.2	7.8	3.0	10.8	3.3	3.0	6.3
EMFAC	0.1	0.2	1.8	0.0		0.0	0.0		0.0	0.0
Veg. Trim Equipment	9.6	0.2	69.0			1.4	1.4		1.4	1.4
Helicopters	73.9	93.6	92.9	15.3	66.2	2.7	68.9	6.6	2.7	9.3
Total	88.0	195	239	15.5	74.0	7.1	81.1	9.9	7.0	17.0

Peak Daily Emission Notes

Peak daily ROG, SO2, Fugitive PM10, and Total PM10 occur between 9/30/2019 and 1/26/2020.
Peak daily NOx, CO, Fugitive PM2.5, and Total PM2.5 occur between 8/6/2018 and 8/31/2018.
Peak daily Exhaust PM10 and Exhaust PM2.5 occur between 10/14/2018 and 11/11/2018.

Notes:

Average lbs/day is based on a 13-month construction schedule at 30 days per month
Northern Segment: July 2018 through December 2018 (six months)
Northern Segment: May 2019 through June 2019 (two months)
Southern Segment: September 2019 through January 2020 (five months)
Substation Modifications: intermittently throughout the project
Consistent with the BAAQMD CEQA Air Quality Guidelines updated May 2012, the measures associated with minimizing vehicle idling time and maintaining equipment are assumed to reduce emissions 5%.

PG&E Fulton-Fitch CPUC: Summary of Emissions w/ APM AIR-1 and AIR-2
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Total Project Emissions w/ APM AIR-1 and AIR-2

	ROG	Nox	CO	SO2	Fugitive PM10	Exhaust PM10	Total PM10	Fugitive PM2.5	Exhaust PM2.5	Total PM2.5
	tons									
CalEEMod Total	0.3	7.1	5.3	0.0	0.2	0.2	0.4	0.1	0.2	0.3
EMFAC	0.0	0.0	0.1	0.0		0.0	0.0		0.0	0.0
Veg. Trim Equipment	0.1	0.0	1.0			0.0	0.0		0.0	0.0
Helicopters	10.5	4.5	13.3	1.3	1.7	0.1	1.8	0.2	0.1	0.3
Total	11.0	11.6	19.8	1.3	1.8	0.4	2.2	0.2	0.4	0.6

Average Daily Emissions w/ APM AIR-1 and AIR-2

	ROG	Nox	CO	SO2	Fugitive PM10	Exhaust PM10	Total PM10	Fugitive PM2.5	Exhaust PM2.5	Total PM2.5
	average lbs/day									
CalEEMod Total	1.5	36.3	27.4	0.1	0.8	1.0	1.8	0.3	1.0	1.3
EMFAC	0.0	0.1	0.7	0.0		0.0	0.0		0.0	0.0
Veg. Trim Equipment	0.7	0.0	5.0			0.1	0.1		0.1	0.1
Helicopters	54.0	23.2	68.3	6.4	8.5	0.8	9.3	0.9	0.8	1.6
Total	56.2	59.6	102	6.5	9.3	1.9	11.2	1.2	1.9	3.1

Peak Daily Emissions w/ APM AIR-1 and AIR-2

	ROG	Nox	CO	SO2	Fugitive PM10	Exhaust PM10	Total PM10	Fugitive PM2.5	Exhaust PM2.5	Total PM2.5
	lbs/day									
CalEEMod Total	4.1	95.9	72.0	0.2	7.8	2.8	10.6	3.3	2.8	6.1
EMFAC	0.1	0.2	1.7	0.0		0.0	0.0		0.0	0.0
Veg. Trim Equipment	9.1	0.2	65.6			1.3	1.3		1.3	1.3
Helicopters	73.9	93.6	92.9	15.3	13.4	2.7	16.1	1.3	2.7	4.0
Total	87.3	190	232	15.5	21.2	6.8	28.1	4.7	6.8	11.5

Peak Daily Emission Notes

Peak daily ROG, SO2, Fugitive PM10, and Total PM10 occur between 9/30/2019 and 1/26/2020.
Peak daily NOx, CO, Fugitive PM2.5, and Total PM2.5 occur between 8/6/2018 and 8/31/2018.
Peak daily Exhaust PM10 and Exhaust PM2.5 occur between 10/14/2018 and 11/11/2018.

Notes:

Average lbs/day is based on a 13-month construction schedule at 30 days per month
Northern Segment: July 2018 through December 2018 (six months)
Northern Segment: May 2019 through June 2019 (two months)
Southern Segment: September 2019 through January 2020 (five months)
Substation Modifications: intermittently throughout the project
Consistent with the BAAQMD CEQA Air Quality Guidelines updated May 2012, the measures associated with minimizing vehicle idling time and maintaining equipment are assumed to reduce emissions 5%.

PG&E Fulton-Fitch CPUC: Summary of Emissions Onsite vs. Offsite w/o APM

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Total Project Emissions w/o APM

	ROG	Nox	CO	SO2	Fugitive PM10	Exhaust PM10	Total PM10	Fugitive PM2.5	Exhaust PM2.5	Total PM2.5
	tons									
Survey - Onsite	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Survey - Offsite	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Veg. Removal - Onsite	0.18	1.15	1.81	0.00	0.00	0.05	0.05	0.00	0.05	0.05
Veg. Removal - Offsite	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Site Improvement - Onsite	0.00	0.12	0.08	0.00	0.06	0.00	0.06	0.03	0.00	0.03
Site Improvement - Offsite	0.02	0.26	0.31	0.00	0.02	0.00	0.02	0.01	0.00	0.01
Drainage Crossings - Onsite	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage Crossings - Offsite	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Auger LDS Holes - Onsite	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Auger LDS Holes - Offsite	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pole Delivery - Onsite	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pole Delivery - Offsite	0.00	0.05	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Material Haul - Onsite	0.01	0.24	0.16	0.00	0.00	0.01	0.01	0.00	0.01	0.01
Material Haul - Offsite	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LDS Install, Ground - Onsite	0.09	1.89	1.47	0.00	0.00	0.08	0.08	0.00	0.08	0.08
LDS Install, Ground - Offsite	0.01	0.04	0.07	0.00	0.01	0.01	0.01	0.00	0.00	0.00
Conductor Installation - Onsite	0.07	2.18	1.56	0.00	0.00	0.05	0.05	0.00	0.05	0.05
Conductor Installation - Offsite	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Auger TSP Holes - Onsite	0.00	0.16	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Auger TSP Holes - Offsite	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TSP Installation - Onsite	0.01	0.31	0.22	0.00	0.00	0.01	0.01	0.00	0.01	0.01
TSP Installation - Offsite	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Restoration - Onsite	0.01	0.13	0.11	0.00	0.05	0.00	0.05	0.02	0.00	0.03
Restoration - Offsite	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Breaker Install - Onsite	0.03	0.77	0.56	0.00	0.00	0.02	0.02	0.00	0.02	0.02
Breaker Install - Offsite	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LDS Install, Aerial - Onsite	10.52	4.53	13.33	1.25	8.19	0.15	8.33	0.82	0.15	0.97
LDS Install, Aerial - Offsite	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Road Subgrade Prep - Onsite	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Road Subgrade Prep - Offsite	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Road Paving - Onsite	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Road Paving - Offsite	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Onsite	10.9	11.6	19.5	1.3	8.3	0.4	8.7	0.9	0.4	1.2
Total Offsite	0.0	0.4	0.6	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Total	11.0	11.9	20.1	1.3	8.3	0.4	8.7	0.9	0.4	1.3

PG&E Fulton-Fitch CPUC: Summary of Annual Emissions Onsite vs. Offsite w/ APM AIR-1 and AIR-2
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Total Project Emissions w/ APM AIR-1 and AIR-2

	ROG	Nox	CO	SO2	Fugitive PM10	Exhaust PM10	Total PM10	Fugitive PM2.5	Exhaust PM2.5	Total PM2.5
	tons									
Survey - Onsite	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Survey - Offsite	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Veg. Removal - Onsite	0.17	1.09	1.72	0.00	0.00	0.04	0.04	0.00	0.04	0.04
Veg. Removal - Offsite	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Site Improvement - Onsite	0.00	0.12	0.08	0.00	0.03	0.00	0.03	0.01	0.00	0.01
Site Improvement - Offsite	0.02	0.25	0.29	0.00	0.02	0.00	0.02	0.00	0.00	0.01
Drainage Crossings - Onsite	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage Crossings - Offsite	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Auger LDS Holes - Onsite	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Auger LDS Holes - Offsite	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pole Delivery - Onsite	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pole Delivery - Offsite	0.00	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Material Haul - Onsite	0.01	0.23	0.16	0.00	0.00	0.01	0.01	0.00	0.01	0.01
Material Haul - Offsite	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LDS Install, Ground - Onsite	0.09	1.79	1.40	0.00	0.00	0.07	0.07	0.00	0.07	0.07
LDS Install, Ground - Offsite	0.01	0.04	0.07	0.00	0.01	0.01	0.01	0.00	0.00	0.00
Conductor Installation - Onsite	0.07	2.07	1.48	0.00	0.00	0.05	0.05	0.00	0.05	0.05
Conductor Installation - Offsite	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Auger TSP Holes - Onsite	0.00	0.15	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Auger TSP Holes - Offsite	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TSP Installation - Onsite	0.01	0.29	0.21	0.00	0.00	0.01	0.01	0.00	0.01	0.01
TSP Installation - Offsite	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Restoration - Onsite	0.01	0.13	0.10	0.00	0.02	0.00	0.02	0.01	0.00	0.01
Restoration - Offsite	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Breaker Install - Onsite	0.03	0.73	0.53	0.00	0.00	0.02	0.02	0.00	0.02	0.02
Breaker Install - Offsite	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LDS Install, Aerial - Onsite	10.52	4.53	13.33	1.25	1.66	0.15	1.81	0.17	0.15	0.31
LDS Install, Aerial - Offsite	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Road Subgrade Prep - Onsite	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Road Subgrade Prep - Offsite	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Road Paving - Onsite	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Road Paving - Offsite	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Onsite	10.9	11.3	19.2	1.3	1.7	0.4	2.1	0.2	0.4	0.5
Total Offsite	0.0	0.4	0.6	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Total	11.0	11.6	19.7	1.3	1.8	0.4	2.1	0.2	0.4	0.6

Notes:

Consistent with the BAAQMD CEQA Air Quality Guidelines updated May 2012, the measures associated with minimizing vehicle idling time and maintaining equipment are assumed to reduce emissions 5%.

PG&E Fulton-Fitch CPUC: Summary of Emissions Onsite vs. Offsite w/o APM

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Average Daily Emissions w/o APM

	ROG	Nox	CO	SO2	Fugitive PM10	Exhaust PM10	Total PM10	Fugitive PM2.5	Exhaust PM2.5	Total PM2.5
	average lbs/day									
Survey - Onsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Survey - Offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Veg. Removal - Onsite	0.9	5.9	9.3	0.0	0.0	0.2	0.2	0.0	0.2	0.2
Veg. Removal - Offsite	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Site Improvement - Onsite	0.0	0.6	0.4	0.0	0.3	0.0	0.3	0.1	0.0	0.2
Site Improvement - Offsite	0.1	1.3	1.6	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Drainage Crossings - Onsite	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Drainage Crossings - Offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auger LDS Holes - Onsite	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auger LDS Holes - Offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pole Delivery - Onsite	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pole Delivery - Offsite	0.0	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Material Haul - Onsite	0.0	1.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Material Haul - Offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LDS Install, Ground - Onsite	0.5	9.7	7.5	0.0	0.0	0.4	0.4	0.0	0.4	0.4
LDS Install, Ground - Offsite	0.0	0.2	0.4	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Conductor Installation - Onsite	0.4	11.2	8.0	0.0	0.0	0.3	0.3	0.0	0.3	0.3
Conductor Installation - Offsite	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auger TSP Holes - Onsite	0.0	0.8	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auger TSP Holes - Offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TSP Installation - Onsite	0.1	1.6	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TSP Installation - Offsite	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Restoration - Onsite	0.0	0.7	0.5	0.0	0.2	0.0	0.3	0.1	0.0	0.1
Restoration - Offsite	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Breaker Install - Onsite	0.1	3.9	2.9	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Breaker Install - Offsite	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LDS Install, Aerial - Onsite	54.0	23.2	68.4	6.4	42.0	0.8	42.7	4.2	0.8	5.0
LDS Install, Aerial - Offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Road Subgrade Prep - Onsite	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Road Subgrade Prep - Offsite	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Asphalt Road Paving - Onsite	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Asphalt Road Paving - Offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Onsite	56.1	59.6	100.2	6.5	42.5	1.9	44.4	4.5	1.9	6.4
Total Offsite	0.2	2.0	3.0	0.0	0.3	0.1	0.3	0.1	0.0	0.1
Total	56.3	61.2	102.9	6.5	42.8	1.9	44.7	4.5	1.9	6.5

Notes:

Average lbs/day is based on a 13-month construction schedule at 30 days per month

Northern Segment: July 2018 through December 2018 (six months)

Northern Segment: May 2019 through June 2019 (two months)

Southern Segment: September 2019 through January 2020 (five months)

Substation Modifications: intermittently throughout the project

PG&E Fulton-Fitch CPUC: Summary of Average Daily Emissions Onsite vs. Offsite w/ APM AIR-1 and AIR-2
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Average Daily Emissions w/ APM AIR-1 and AIR-2

	ROG	Nox	CO	SO2	Fugitive PM10	Exhaust PM10	Total PM10	Fugitive PM2.5	Exhaust PM2.5	Total PM2.5
	average lbs/day									
Survey - Onsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Survey - Offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Veg. Removal - Onsite	0.9	5.6	8.8	0.0	0.0	0.2	0.2	0.0	0.2	0.2
Veg. Removal - Offsite	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Site Improvement - Onsite	0.0	0.6	0.4	0.0	0.1	0.0	0.1	0.1	0.0	0.1
Site Improvement - Offsite	0.1	1.3	1.5	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Drainage Crossings - Onsite	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Drainage Crossings - Offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auger LDS Holes - Onsite	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auger LDS Holes - Offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pole Delivery - Onsite	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pole Delivery - Offsite	0.0	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Material Haul - Onsite	0.0	1.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Material Haul - Offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LDS Install, Ground - Onsite	0.4	9.2	7.2	0.0	0.0	0.4	0.4	0.0	0.4	0.4
LDS Install, Ground - Offsite	0.0	0.2	0.4	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Conductor Installation - Onsite	0.4	10.6	7.6	0.0	0.0	0.3	0.3	0.0	0.3	0.3
Conductor Installation - Offsite	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auger TSP Holes - Onsite	0.0	0.8	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Auger TSP Holes - Offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TSP Installation - Onsite	0.1	1.5	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TSP Installation - Offsite	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Restoration - Onsite	0.0	0.6	0.5	0.0	0.1	0.0	0.1	0.1	0.0	0.1
Restoration - Offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Breaker Install - Onsite	0.1	3.7	2.7	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Breaker Install - Offsite	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LDS Install, Aerial - Onsite	54.0	23.2	68.4	6.4	8.5	0.8	9.3	0.9	0.8	1.6
LDS Install, Aerial - Offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Road Subgrade Prep - Onsite	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Road Subgrade Prep - Offsite	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Asphalt Road Paving - Onsite	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Asphalt Road Paving - Offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Onsite	56.0	57.8	98.6	6.5	8.7	1.9	10.6	1.0	1.8	2.8
Total Offsite	0.2	1.9	2.9	0.0	0.3	0.0	0.3	0.1	0.0	0.1
Total	56.2	59.3	101.2	6.5	9.0	1.9	10.9	1.0	1.9	2.9

Notes:

Average lbs/day is based on a 13-month construction schedule at 30 days per month

Northern Segment: July 2018 through December 2018 (six months)
Northern Segment: May 2019 through June 2019 (two months)
Southern Segment: September 2019 through January 2020 (five months)
Substation Modifications: intermittently throughout the project

Consistent with the BAAQMD CEQA Air Quality Guidelines updated May 2012, the measures associated with minimizing vehicle idling time and maintaining equipment are assumed to reduce emissions 5%.

PG&E Fulton-Fitch CPUC: Summary of Emissions Onsite vs. Offsite w/o APM
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Peak Daily Emissions During the Phase w/o APM

	ROG	Nox	CO	SO2	Fugitive PM10	Exhaust PM10	Total PM10	Fugitive PM2.5	Exhaust PM2.5	Total PM2.5
	lbs/day									
Survey - Onsite	0.0	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Survey - Offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Veg. Removal - Onsite	10.0	63.8	100.8	0.1	0.0	2.6	2.6	0.0	2.6	2.6
Veg. Removal - Offsite	0.1	0.1	0.9	0.0	0.2	0.0	0.2	0.0	0.0	0.0
Site Improvement - Onsite	0.4	12.2	8.4	0.0	5.7	0.3	5.9	2.7	0.3	3.0
Site Improvement - Offsite	2.1	25.8	30.6	0.1	1.9	0.4	2.2	0.5	0.3	0.8
Drainage Crossings - Onsite	0.1	1.5	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Drainage Crossings - Offsite	0.0	0.1	0.5	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Auger LDS Holes - Onsite	0.1	3.4	2.7	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Auger LDS Holes - Offsite	0.0	0.1	0.6	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Pole Delivery - Onsite	0.2	5.1	3.5	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Pole Delivery - Offsite	0.8	9.7	11.4	0.0	0.7	0.1	0.8	0.2	0.1	0.3
Material Haul - Onsite	0.2	6.9	4.7	0.0	0.0	0.2	0.2	0.0	0.2	0.2
Material Haul - Offsite	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LDS Install, Ground - Onsite	1.7	36.0	28.0	0.0	0.0	1.4	1.4	0.0	1.4	1.4
LDS Install, Ground - Offsite	0.1	0.8	1.4	0.0	0.2	0.1	0.3	0.0	0.0	0.1
Conductor Installation - Onsite	1.4	41.5	29.6	0.1	0.0	1.0	1.0	0.0	1.0	1.0
Conductor Installation - Offsite	0.0	0.1	0.6	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Auger TSP Holes - Onsite	0.4	12.5	8.3	0.0	0.0	0.3	0.3	0.0	0.3	0.3
Auger TSP Holes - Offsite	0.0	0.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TSP Installation - Onsite	0.5	14.7	10.7	0.0	0.0	0.4	0.4	0.0	0.3	0.3
TSP Installation - Offsite	0.1	0.6	1.3	0.0	0.2	0.0	0.2	0.0	0.0	0.1
Restoration - Onsite	0.3	6.6	5.3	0.0	2.3	0.2	2.4	1.2	0.2	1.4
Restoration - Offsite	0.0	0.1	0.5	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Breaker Install - Onsite	1.0	25.6	18.8	0.0	0.0	0.7	0.7	0.0	0.7	0.7
Breaker Install - Offsite	0.0	0.1	0.6	0.0	0.1	0.0	0.1	0.0	0.0	0.0
LDS Install, Aerial - Onsite	73.9	93.6	92.9	15.3	137.6	2.7	140.1	13.8	2.7	16.2
LDS Install, Aerial - Offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Road Subgrade Prep - Onsite	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Road Subgrade Prep - Offsite	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Asphalt Road Paving - Onsite	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Asphalt Road Paving - Offsite	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Peak Daily Emission Notes

Peak daily ROG, SO2, Fugitive PM10, and Total PM10 occur between 9/30/2019 and 1/26/2020.

Peak daily NOx, CO, Fugitive PM2.5, and Total PM2.5 occur between 8/6/2018 and 8/31/2018.

Peak daily Exhaust PM10 and Exhaust PM2.5 occur between 10/14/2018 and 11/11/2018.

PG&E Fulton-Fitch CPUC: Summary of Maximum Daily Emissions Onsite vs. Offsite w/ APM AIR-1 and AIR-2
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Peak Daily Emissions During the Phase w/ APM AIR-1 and AIR-2

	ROG	Nox	CO	SO2	Fugitive PM10	Exhaust PM10	Total PM10	Fugitive PM2.5	Exhaust PM2.5	Total PM2.5
	lbs/day									
Survey - Onsite	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Survey - Offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Veg. Removal - Onsite	9.5	60.6	95.7	0.1	0.0	2.5	2.5	0.0	2.4	2.4
Veg. Removal - Offsite	0.1	0.1	0.8	0.0	0.2	0.0	0.2	0.0	0.0	0.0
Site Improvement - Onsite	0.4	11.6	8.0	0.0	2.5	0.3	2.8	1.2	0.3	1.5
Site Improvement - Offsite	2.0	24.5	29.0	0.1	1.9	0.3	2.2	0.5	0.3	0.8
Drainage Crossings - Onsite	0.1	1.4	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Drainage Crossings - Offsite	0.0	0.1	0.5	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Auger LDS Holes - Onsite	0.1	3.2	2.6	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Auger LDS Holes - Offsite	0.0	0.1	0.6	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Pole Delivery - Onsite	0.2	4.8	3.3	0.0	0.0	0.1	0.1	0.0	0.1	0.1
Pole Delivery - Offsite	0.7	9.2	10.8	0.0	0.7	0.1	0.8	0.2	0.1	0.3
Material Haul - Onsite	0.2	6.5	4.5	0.0	0.0	0.2	0.2	0.0	0.2	0.2
Material Haul - Offsite	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LDS Install, Ground - Onsite	1.6	34.2	26.6	0.0	0.0	1.4	1.4	0.0	1.4	1.4
LDS Install, Ground - Offsite	0.1	0.7	1.4	0.0	0.2	0.1	0.3	0.0	0.0	0.1
Conductor Installation - Onsite	1.3	39.4	28.2	0.1	0.0	1.0	1.0	0.0	0.9	0.9
Conductor Installation - Offsite	0.0	0.1	0.6	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Auger TSP Holes - Onsite	0.4	11.9	7.9	0.0	0.0	0.3	0.3	0.0	0.3	0.3
Auger TSP Holes - Offsite	0.0	0.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TSP Installation - Onsite	0.5	14.0	10.1	0.0	0.0	0.3	0.3	0.0	0.3	0.3
TSP Installation - Offsite	0.1	0.6	1.2	0.0	0.2	0.0	0.2	0.0	0.0	0.1
Restoration - Onsite	0.3	6.3	5.1	0.0	1.0	0.2	1.2	0.6	0.2	0.7
Restoration - Offsite	0.0	0.1	0.5	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Breaker Install - Onsite	0.9	24.3	17.8	0.0	0.0	0.7	0.7	0.0	0.7	0.7
Breaker Install - Offsite	0.0	0.1	0.6	0.0	0.1	0.0	0.1	0.0	0.0	0.0
LDS Install, Aerial - Onsite	73.9	93.6	92.9	15.3	27.9	2.7	30.4	2.8	2.7	5.3
LDS Install, Aerial - Offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Road Subgrade Prep - Onsite	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Road Subgrade Prep - Offsite	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Asphalt Road Paving - Onsite	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Asphalt Road Paving - Offsite	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Notes:
Consistent with the BAAQMD CEQA Air Quality Guidelines updated May 2012, the measures associated with minimizing vehicle idling time and maintaining equipment are assumed to reduce emissions 5%.

"*Add equipment used for "Vegetation Removal and Trimming"* "

Equipment for this Phase is listed below.

Equipment	Quantity	Fuel	Days/Wk	Hrs/Day	No. Wks	Notes
Pickup Trucks	2	Gasoline	6	10	5	Removed from CalEEMod Input. Added to EMFAC Calculation (see below). Not likely to operate 10 hrs/day.
Bucket Trucks	2	Diesel	6	10	5	Previously included in CalEEMod input. Not likely to operate 10 hrs/day.
Chipper Truck	2	Diesel	6	4	5	Previously included in CalEEMod input. Hours operating reduced to accommodate chipper.
Chipper Engine	2	Diesel	6	6	5	Added to CalEEMod input. Chipper Truck will not be operating while Chipper Engine is operating.
Chainsaw	2	Gasoline	6	8	5	Emissions are estimated below.
Leaf Blowers	2	Gasoline	6	2	5	Emissions are estimated below. This equipment is unlikely to be used.

Emissions Estimates for Gasoline Fueled Equipment

		Total Emissions (lbs)					
Equipment	**Quantity**	ROG	CO	NOx	PM10	PM2.5	SOx
Pickup Trucks		INCLUDED WITH EMFAC CALCULATIONS					
Chainsaws (5 hp)	2	253.9	1499.3	4.8	40.7	40.7	-
Leaf Blowers (2 hp)	2	34.2	572.1	1.5	0.1	0.1	-
Total		**288.0**	**2071.4**	**6.3**	**40.8**	**40.8**	**-**

		Daily Emissions (lbs/day)					
Equipment	**Quantity**	ROG	CO	NOx	PM10	PM2.5	SOx
Pickup Trucks		INCLUDED WITH EMFAC CALCULATIONS					
Chainsaws (5 hp)	2	8.5	50.0	0.2	1.4	1.4	-
Leaf Blowers (2 hp)	2	1.1	19.1	0.0	0.0	0.0	-
Total		**9.6**	**69.0**	**0.2**	**1.4**	**1.4**	**-**

Sources

Pickup trucks: see EMFAC calculations.

Chainsaw/Leaf Blower factors: EPA (2010). *Exhaust Emission Factors for Nonroad Engines Modeling - Spark-Ignition.* Phase 2 small SI engines

Notes

SO2 assumed to be negligible.

PG&E Fulton-Fitch CPUC: EMFAC Emissions Calculations

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"...reclassify any pickup trucks or on road vehicles to EMFAC2014 as appropriate

Total Emissions

Phase	Category	Quantity	Days/Wk	Total Wks	Hours/Day	Miles/Hour	Miles/Day	Emissions (lbs) ROG	CO	NOx	PM10	PM2.5	SOx
Survey	MDV	1	4	5	8	15	120	0.64	10.13	1.30	0.25	0.104	0.028
Vegetation Removal and Trimming	MDV	2	6	5	10	15	150	2.39	38.00	4.87	0.93	0.389	0.105
Site Improvements and Reestablishment	MDV	1	4	4	8	15	120	0.51	8.11	1.04	0.20	0.083	0.022
Drainage Crossings	MDV	1	4	4	4	15	60	0.25	4.05	0.52	0.10	0.041	0.011
Auger LDS Pole Holes	MDV	1	5	6	6	15	90	0.72	11.40	1.46	0.28	0.117	0.032
LDS Pole Install - Aerial	MDV	1	7	4	4	15	60	0.45	7.09	0.91	0.17	0.073	0.020
LDS Pole Install - Ground	MDV	1	7	4	6	15	90	0.67	10.64	1.36	0.26	0.109	0.029
TSP Installation	MDV	2	7	6	6	15	90	2.01	31.92	4.09	0.78	0.327	0.088
Conductor Installation	MDV	3	7	15	7	15	105	8.78	139.64	17.90	3.41	1.429	0.387
Right-of-Way Restoration and Cleanup	MDV	1	5	8	6	15	90	0.96	15.20	1.95	0.37	0.155	0.042
Road Subgrade Prep	MDV	3	5	2	2	15	30	0.24	3.80	0.49	0.09	0.039	0.011
Asphalt Road Paving	MDV	3	5	1	2	15	30	0.12	1.90	0.24	0.05	0.019	0.005
							Total	**17.7**	**281.9**	**36.1**	**6.9**	**2.9**	**0.8**

Peak Daily Emissions

Phase	Category	Quantity	Hours/Day	Miles/Hour	Miles/Day	Emissions (lbs) ROG	CO	NOx	PM10	PM2.5	SOx
Survey	MDV	1	8	15	120	0.03	0.51	0.06	0.01	0.005	0.001
Vegetation Removal and Trimming	MDV	2	10	15	150	0.08	1.27	0.16	0.03	0.013	0.004
Site Improvements and Reestablishment	MDV	1	8	15	120	0.03	0.51	0.06	0.01	0.005	0.001
Drainage Crossings	MDV	1	4	15	60	0.02	0.25	0.03	0.01	0.003	0.001
Auger LDS Pole Holes	MDV	1	6	15	90	0.02	0.38	0.05	0.01	0.004	0.001
LDS Pole Install - Aerial	MDV	1	4	15	60	0.02	0.25	0.03	0.01	0.003	0.001
LDS Pole Install - Ground	MDV	1	6	15	90	0.02	0.38	0.05	0.01	0.004	0.001
TSP Installation	MDV	2	6	15	90	0.05	0.76	0.10	0.02	0.008	0.002
Conductor Installation	MDV	3	7	15	105	0.08	1.33	0.17	0.03	0.014	0.004
Right-of-Way Restoration and Cleanup	MDV	1	6	15	90	0.02	0.38	0.05	0.01	0.004	0.001
Road Subgrade Prep	MDV	3	2	15	30	0.02	0.38	0.05	0.01	0.004	0.001
Asphalt Road Paving	MDV	3	2	15	30	0.02	0.38	0.05	0.01	0.004	0.001
						0.43	**6.78**	**0.87**	**0.17**	**0.07**	**0.02**

Notes

Assumes one engine start/stop per hour, rounded up.

EMFAC2014 (v1.0.7) Emission Rates
Region Type: Air District
Region: Bay Area AQMD
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

Calendar Year: **2018**

Region	CalYr	VehClass	MdlYr	Speed	Fuel	ROG_RUN	ROG_STRE	ROG_HOT:	ROG_RUN	ROG_REST	ROG_DIUR	CO_RUNEX	CO_STREX	NOx_RUNI	NOx_STRE	PM10_RUI	PM10_STR	PM10_PM	PM10_PM	PM2_5_RU	PM2_5_ST	PM2_5_PM	PM2_5_PM	SOx_RUNE	SOx_STREX
Bay Area A	2018	MDV	Aggregate	Aggregate	GAS	0.043894	0.350651	0.190122	0.606893	0.365543	0.386159	1.626779	4.324828	0.218427	0.405203	0.001818	0.00272	0.008	0.03675	0.001674	0.002505	0.002	0.01575	0.00522	0.001243

Calendar Year: **2019**

Region	CalYr	VehClass	MdlYr	Speed	Fuel	ROG_RUN	ROG_STRE	ROG_HOT:	ROG_RUN	ROG_REST	ROG_DIUR	CO_RUNEX	CO_STREX	NOx_RUNI	NOx_STRE	PM10_RUI	PM10_STR	PM10_PM	PM10_PM	PM2_5_RU	PM2_5_ST	PM2_5_PM	PM2_5_PM	SOx_RUNE	SOx_STREX
Bay Area A	2019	MDV	Aggregate	Aggregate	GAS	0.039772	0.318334	0.186388	0.592685	0.36674	0.381231	1.50524	3.979181	0.196963	0.366874	0.001838	0.002696	0.008	0.03675	0.001692	0.002483	0.002	0.01575	0.005099	0.001216

Calendar Year: **2020**

Region	CalYr	VehClass	MdlYr	Speed	Fuel	ROG_RUN	ROG_STRE	ROG_HOT:	ROG_RUN	ROG_REST	ROG_DIUR	CO_RUNEX	CO_STREX	NOx_RUNI	NOx_STRE	PM10_RUI	PM10_STR	PM10_PM	PM10_PM	PM2_5_RU	PM2_5_ST	PM2_5_PM	PM2_5_PM	SOx_RUNE	SOx_STREX
Bay Area A	2020	MDV	Aggregate	Aggregate	GAS	0.036036	0.288349	0.182199	0.578969	0.36667	0.375963	1.39572	3.658991	0.177861	0.331162	0.001837	0.002667	0.008	0.03675	0.001691	0.002456	0.002	0.01575	0.004974	0.001188

"Clarify equipment included as "Other Material Handling Equipment" and reclassify any pickup trucks or on road vehicles to EMFAC2014 as appropriate"

All of the following equipment is gasoline fueled. Remaining equipment modeled in CalEEMod is diesel fueled.

Activity	Equipment	Quantity
Survey	Pickup Truck	1
Vegetation Removal and Trimming	Pickup Truck	2
Vegetation Removal and Trimming	Chainsaws	4
Vegetation Removal and Trimming	Leaf Blowers	2
Site Improvements and Reestablishment	Pickup Truck	1
Drainage Crossings	Pickup Truck	1
LDS Pole Install - Aerial	Crew Cab Pickup Truck	1
LDS Pole Install - Ground	Crew Cab Pickup Truck	1
Auger TSP Pole Holes	Pickup Truck	1
TSP Installation	Pickup Truck	1
TSP Installation	Crew Cab Pickup Truck	1
Conductor Installation	Pickup Truck	3
Right-of-Way Restoration and Cleanup	Pickup Truck	1
Road Subgrade Prep	Crew Cab Pickup Truck	3
Asphalt Road Paving	Crew Cab Pickup Truck	3

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Total Project Emissions w/o Mitigation Measures

Activity	Qty.	Equip.	Mode	Days/ Week	LTO/ Day	Duration (weeks)	PM10 (tons)	Average PM10 (lbs/day)	Maximum PM10 (lbs/day)	PM2.5 (tons)	Average PM2.5 (lbs/day)	Maximum PM2.5 (lbs/day)
Pole Installation	2	light duty - Hughes 500	LTO	7	3	52	3.61	18.5	19.9	0.36	1.85	1.99
Pole Installation	1	heavy duty - Bell 214B	LTO	7	3	2	0.07	0.36	9.93	0.01	0.04	0.99
Total							**3.68**	**18.9**	**29.8**	**0.37**	**1.89**	**2.98**

Total Project Emissions w/ Mitigation Measures AIR-1 and AIR-2

Activity	Qty.	Equip.	Mode	Days/ Week	LTO/ Day	Duration (weeks)	PM10 (tons)	Average PM10 (lbs/day)	Maximum PM10 (lbs/day)	PM2.5 (tons)	Average PM2.5 (lbs/day)	Maximum PM2.5 (lbs/day)
Pole Installation	2	light duty - Hughes 500	LTO	7	3	52	1.63	8.34	8.94	0.16	0.83	0.89
Pole Installation	1	heavy duty - Bell 214B	LTO	7	3	2	0.03	0.16	4.47	0.00	0.02	0.45
Total							**1.66**	**8.50**	**13.4**	**0.17**	**0.85**	**1.34**

Notes:

Average lbs/day is based on a 13-month construction schedule at 30 days per month

Northern Segment: July 2018 through December 2018 (six months)

Northern Segment: May 2019 through June 2019 (two months)

Southern Segment: September 2019 through January 2020 (five months)

Substation Modifications: intermittently throughout the project

Emission Factor Source: Dr. J. A. Gillies et. al. December 31, 2007. *Particulate Matter Emissions for Dust from Unique Military Activities* .

Measurements indicated approximately 0.5 kg of PM10 during takeoff and 1 kg during landing.

Measurements were conducted in dry, unpaved, desert in Arizona.

The model used in testing was a UH-1H Huey, more similar to the Bell 214B above.

It is assumed the light duty Hughes 500 would produce less fugitive dust emissions.

The 0.5 kg takeoff and 1 kg landing emission factor is conservatively assumed for both helicopters.

The landing and takeoff surface is assumed to be watered, reducing fugitive dust emissions 55%.

PM2.5/PM10 Factor: Western Governors' Association. September 7, 2006. *WRAP Fugitive Dust Handbook.*

The emission factor for PM2.5 for unpaved roads is 0.1 x PM10 emissions.

Total Project Emissions w/o Mitigation Measures

Activity	Qty.	Equip.	Mode	LTO/ Day	Days/ Week	Hours/ Day	Duration (weeks)	Power (shp)	Fuel Consumption (lb/hr)	Emission Factors (lb/hr) HC	Nox	CO	SOx	PM10	Emissions total (tons) HC	Nox	CO	SOx	PM10	Emissions Peak daily (lbs/day) HC	Nox	CO	SOx	PM10	GHG Emissions Fuel Consumption (lb/day)	Fuel Consumption (gal/day)	Fuel Consumption (gal)	CO2 (metric tons)
Pole Installation	2	light duty - Hughes 500	LTO	3	7	0.68	52	317	482	4.4	0.6	5.7	0.5	0.0	3.22	0.43	4.20	0.39	0.01	17.7	2.38	23.1	2.12	0.08	651	109	39,687	330
Pole Installation	2	light duty - Hughes 500	Operation		7	9.33	52	317	218	2.1	1.1	2.6	0.2	0.0	7.19	3.59	8.98	0.81	0.12	39.5	19.7	49.3	4.43	0.66	4,071	682	248,227	2,067
Pole Installation	1	heavy duty - Bell 214B	LTO	3	7	0.68	2	1850	1163	2.7	3.2	3.5	1.3	0.1	0.04	0.05	0.05	0.02	0.00	5.55	6.57	7.02	2.56	0.19	785	132	1,841	15
Pole Installation	1	heavy duty - Bell 214B	Operation		7	9.33	2	1850	613	1.2	7.0	1.4	0.7	0.2	0.08	0.45	0.09	0.04	0.01	11.2	64.9	13.4	6.22	1.78	5,716	958	13,405	112
Total															**10.5**	**4.53**	**13.3**	**1.25**	**0.15**	**73.9**	**93.6**	**92.9**	**15.3**	**2.71**	**11,224**	**1,880**	**303,162**	**2,524**

Total Project Emissions w/ Mitigation Measures AIR-1 and AIR-2

Activity	Qty.	Equip.	Mode	LTO/ Day	Days/ Week	Hours/ Day	Duration (weeks)	Power (shp)	Fuel Consumption (lb/hr)	Emission Factors (lb/hr) HC	Nox	CO	SOx	PM10	Emissions total (tons) HC	Nox	CO	SOx	PM10	Emissions Peak daily (lbs/day) HC	Nox	CO	SOx	PM10	GHG Emissions Fuel Consumption (lb/day)	Fuel Consumption (gal/day)	Fuel Consumption (gal)	CO2 (metric tons)
Pole Installation	2	light duty - Hughes 500	LTO	3	7	0.68	52	317	482	4.4	0.6	5.7	0.5	0.0	3.22	0.43	4.20	0.39	0.01	17.7	2.38	23.1	2.12	0.08	651	109	39,687	330
Pole Installation	2	light duty - Hughes 500	Operation		7	9.33	52	317	218	2.1	1.1	2.6	0.2	0.0	7.19	3.59	8.98	0.81	0.12	39.5	19.7	49.3	4.43	0.66	4,071	682	248,227	2,067
Pole Installation	1	heavy duty - Bell 214B	LTO	3	7	0.68	2	1850	1163	2.7	3.2	3.5	1.3	0.1	0.04	0.05	0.05	0.02	0.00	5.55	6.57	7.02	2.56	0.19	785	132	1,841	15
Pole Installation	1	heavy duty - Bell 214B	Operation		7	9.33	2	1850	613	1.2	7.0	1.4	0.7	0.2	0.08	0.45	0.09	0.04	0.01	11.2	64.9	13.4	6.22	1.78	5,716	958	13,405	112
Total															**10.5**	**4.53**	**13.3**	**1.25**	**0.15**	**73.9**	**93.6**	**92.9**	**15.3**	**2.71**	**11,224**	**1,880**	**303,162**	**2,524**

Emission factors were obtained from the *FOCA Guidance on Determination of Helicopter Emissions, Edition 1, March 2009*
Emission factors for Bell 214B (singe engine @ 1,850 shp) were derived from the emission factors for the Bell 412 (twin engines @ 1,800 shp each)
LTO = Landing and take-off cycle
Each day of 10-hour helicopter operations assumes 3 LTOs at 13.5 minutes each. The remaining time is assumed to be operational (no idle time has been assumed).
Jet Fuel assumed to contain an average 0.054% wt. sulfur per the FAA's Aviation Emissions, Impacts & Mitigation: a Primer, dated January 2015

SF6 Insulated Breaker Emissions - Greenhouse Gas

Emissions Scenario	Quantity	Equipment	SF6 Capacity (lbs/breaker)	Leak Rate	Emissions (MT/year) SF6	CO2e
Without APM	2	Circuit Breaker	175	1%	0.0016	36.2
With APM	2	Circuit Breaker	175	1%	0.0008	18.1

Notes:
Circuit breakers were conservatively assumed to contain 175 pounds of SF6 consistant with the PG&E: Embarcadero-Potrero 230 KV Transmission Line Project PEA.
The Global Warming Potential of SF6 is 22,800 (CFR Title 40 Part 98 Subpart A).

Attachment B

CalEEMod Input Assumptions

- Estimated Project Construction Schedule
- Estimated Project Construction Equipment Usage
- Construction Trips and Trip Lengths
- Estimated Helicopter Operations

PG&E proposes to reinforce the electric transmission system in Sonoma County by replacing the conductor on a 9.9-mile-long section of the Fulton-Hopland 60 kV Power Line (Fulton-Hopland Line) between the communities of Fulton and Healdsburg. Construction would involve fourteen (generally sequential) phases: Survey, Vegetation Removal and Trimming, Site Improvements and Reestablishment, Drainage Crossings, Auger LDS Pole Holes, Pole Delivery, Material, Equipment, Supply Haul, LDS Pole Install – Ground, Conductor Installation, Auger TSP Holes, TSP Installation, Restoration and Cleanup, Circuit Breaker Installation, and LDS Pole Install – Aerial, Road Subgrade Preparation, and Asphalt Road Paving.

Project construction would generate short-term emissions of air pollutants, including fugitive dust and equipment exhaust emissions. CalEEMod (California Emissions Estimator Model Version 2013.2.2)[1] emissions model estimates emissions due to construction activities. Air quality calculations were performed for combustion sources such as on-road vehicles from employees and haul trucks as well as onsite construction equipment such as loaders and excavators. Fugitive dust from grading, loading/unloading, and vehicle movement on unpaved surfaces was also calculated.

Construction activities are expected to commence in July of 2018 with project site surveys, followed by additional site preparation and construction tasks. Construction activities are expected to be completed by the end of January of 2020 with aerial pole installation. During the 18 month period there may be some periods in which construction activity could be dormant (i.e., to avoid wildlife migration, rainy season, etc.) such that the construction activities would occur over a 13 month period.

Table 1 provides the estimated construction schedule for each phase. The project construction site work area, including staging areas, access areas, access roads, and temporary easement during construction is 30.4 acres.

[1] California Emissions Estimator Model User's Guide, July 2013. http://www.caleemod.com/

Table 1: Estimated Project Construction Schedule

Phase	Description	Phase Type	Start	End	Days per Week	Working Days
1	Survey	Site Preparation	7/2/2018	8/5/2018	5	25
2	Vegetation Removal and Trimming	Site Preparation	8/6/2018	9/13/2018	6	36
3	Site Improvements and Reestablishment	Site Preparation	8/6/2018	8/31/2018	5	20
4	Drainage Crossings	Site Preparation	9/3/2018	9/30/2018	5	20
5	Auger LDS Pole Holes	Construction	9/3/2018	10/14/2018	5	30
6	Pole Delivery	Construction	9/3/2018	9/16/2018	5	10
7	Material, Equipment, Supply Haul	Construction	9/3/2018	11/11/2018	7	70
8	LDS Pole Install - Ground	Construction	9/17/2018	12/30/2018	7	105
9	Conductor Installation	Construction	9/17/2018	12/30/2018	7	105
10	Auger TSP Holes	Construction	10/14/2018	11/18/2018	5	25
11	TSP Installation	Construction	11/19/2018	12/30/2018	7	42
12	Restoration and Cleanup	Site Preparation	12/3/2018	1/25/2019	5	40
13	Circuit Breaker Installation	Construction	2/4/2019	4/26/2019	5	60
14	Road Subgrade Preparation	Site Preparation	4/27/2019	5/10/2019	5	10
15	Asphalt Road Paving	Paving	5/11/2019	5/17/2019	5	5
16	LDS Pole Install - Aerial	Construction	9/30/2019	1/26/2020	7	119

SOURCE: CalEEMod Version 2013.2.2.

The estimated construction equipment associated with the proposed project along with the number of pieces of equipment, daily hours of operation, horsepower (hp), and load factor (i.e., percent of full throttle) are shown in **Table 2**.

Table 2: Estimated Project Construction Equipment Usage

Phase	Equipment Type	Amount	Daily Hours	HP	Load Factor
Vegetation Removal and Trimming	Crushing/Processing Equipment	2	8.0	200	0.78
Vegetation Removal and Trimming	Off-Highway Trucks	4	8.0	400	0.38
Site Improvements and Reestablishment	Off-Highway Trucks	1	1.8	400	0.38
Site Improvements and Reestablishment	Off-Highway Trucks	1	2.8	400	0.38
Site Improvements and Reestablishment	Rubber Tired Dozers	1	6.4	255	0.40
Site Improvements and Reestablishment	Skid Steer Loaders	1	1.4	64	0.37
Drainage Crossings	Crawler Tractors	1	1.8	208	0.43
Auger LDS Pole Holes	Bore/Drill Rigs	1	2.0	205	0.50
Auger LDS Pole Holes	Skid Steer Loaders	1	6.0	64	0.37
Pole Delivery	Off-Highway Trucks	1	4.0	400	0.38
Material, Equipment, Supply Haul	Off-Highway Trucks	1	1.4	400	0.38
Material, Equipment, Supply Haul	Off-Highway Trucks	1	4.0	400	0.38
LDS Pole Install - Ground	Air Compressors	1	2.9	78	0.48
LDS Pole Install - Ground	Generator Sets	6	8.0	84	0.74
LDS Pole Install - Ground	Off-Highway Trucks	1	0.8	400	0.38

LDS Pole Install - Ground	Skid Steer Loaders	1	1.1	64	0.37
LDS Pole Install - Ground	Skid Steer Loaders	1	2.7	64	0.37
LDS Pole Install - Ground	Tractor/Loaders/Backhoes	1	4.3	97	0.37
Conductor Installation	Cranes	3	1.0	226	0.29
Conductor Installation	Generator Sets	1	1.2	84	0.74
Conductor Installation	Off-Highway Trucks	1	6.1	400	0.38
Conductor Installation	Off-Highway Trucks	2	6.1	400	0.38
Conductor Installation	Off-Highway Trucks	2	6.1	400	0.38
Auger TSP Holes	Crawler Tractors	1	6.0	208	0.43
Auger TSP Holes	Off-Highway Trucks	1	6.0	400	0.38
TSP Installation	Cranes	1	4.3	226	0.29
TSP Installation	Off-Highway Trucks	2	4.3	400	0.38
TSP Installation	Off-Highway Trucks	1	0.9	400	0.38
Restoration and Cleanup	Graders	1	4.0	174	0.41
Restoration and Cleanup	Off-Highway Trucks	1	2.0	400	0.38
Restoration and Cleanup	Rubber Tired Dozers	1	1.5	255	0.40
Circuit Breaker Installation	Aerial Lifts	1	8.0	62	0.31
Circuit Breaker Installation	Cranes	1	8.0	226	0.29
Circuit Breaker Installation	Excavators	1	8.0	162	0.38
Circuit Breaker Installation	Forklifts	1	8.0	89	0.20
Circuit Breaker Installation	Generator Sets	1	1.6	84	0.74
Circuit Breaker Installation	Off-Highway Trucks	1	8.0	400	0.38
Circuit Breaker Installation	Skid Steer Loaders	1	8.0	64	0.37
Road Subgrade Preparation	Skid Steer Loaders	1	10.0	64	0.37
Road Subgrade Preparation	Tractor/Loaders/Backhoes	1	10.0	97	0.37
Asphalt Road Paving	Paver	1	10.0	125	0.42
Asphalt Road Paving	Skid Steer Loaders	1	10.0	64	0.37
Asphalt Road Paving	Tractor/Loaders/Backhoes	1	10.0	97	0.37

SOURCE: CalEEMod Version 2013.2.2.

A total of approximately 2,132 haul truck trips were estimated during site improvements and a total of approximately 800 haul trucks were estimated during pole delivery, LDS pole installation and TSP installation, and 90 haul trucks were estimated during the Fitch Substation pavement installation. An average daily construction crew of 15 employees would be present. **Table 3** provides a list of the expected trips and trip lengths by construction phase of haul trucks, vendors, and construction workers. Truck trip emissions were based on EMFAC[2] emissions factors, the number of trips, and the hours of operations (at a rate of 15 miles per hour). Chainsaw and leaf blower emissions were based on the USEPA's Exhaust Emission

[2] CARB EMFAC User's Guide, December 20, 2012, http://www.arb.ca.gov/msei/modeling.htm

Factors for Nonroad Engines Modeling - Spark-Ignition.[3] There are expected to be two chainsaws and two leaf blower usage during construction activities.

Table 3: Construction Trips and Trip Lengths

Phase	Equipment Count	Worker Trips	Vendor Trips	Haul Truck Trips	Worker Trip Length (mile)	Vendor Trip Length (mile)	Haul Trip Length (mile)
Vegetation Removal and Trimming	6	20	0	0	12.4	7.3	20
Site Improvements and Reestablishment	4	12	0	2,132	12.4	7.3	20
Drainage Crossings	1	12	0	0	12.4	7.3	20
Auger LDS Pole Holes	2	14	0	0	12.4	7.3	20
Pole Delivery	1	2	0	400	12.4	7.3	20
Material, Equipment, Supply Haul	2	4	0	0	12.4	7.3	20
LDS Pole Install - Ground	11	14	0	300	12.4	7.3	20
Conductor Installation	9	14	0	0	12.4	7.3	20
Auger TSP Holes	2	14	0	0	12.4	7.3	20
TSP Installation	4	14	0	100	12.4	7.3	20
Restoration and Cleanup	3	12	0	0	12.4	7.3	20
Circuit Breaker Installation	7	16	0	0	12.4	7.3	20
Road Subgrade Preparation	2	6	0	60	12.4	7.3	20
Asphalt Road Paving	3	6	0	30	12.4	7.3	20

SOURCE: CalEEMod Version 2013.2.2.

Helicopters will be used to remove and deliver poles, materials, equipment, concrete, and workers, and to set poles. Two small helicopters (Hughes 500D or similar) will be used to carry humans and materials. A large helicopter (Bell 214B or similar) will be used for flying in new poles and removing old poles. Helicopters will fly directly from the landing zone to the alignment, and will follow the alignment to pole sites. Helicopters may also touch down at locations along the alignment other than landing zones when transporting workers and equipment. At the end of each day, helicopters will return to Santa Rosa Airport or another appropriately equipped facility. Approximately six landing zones will be used, including two located within project staging areas. Each landing zone requires an area of approximately one acre. Any site used as a helicopter landing zone will be maintained with necessary fueling and support equipment for helicopters.

Helicopter operations are assumed to occur daily (up to ten hours per day and seven days per week) and involve a Hughes 500D or similar (small helicopter) and/or Bel1 214B or similar (large helicopter) depending on the duties required. The Hughes 500D is rated at 317 hp and the Bell 214B is rated at 1850 hp; both helicopters are single engine powered. Helicopter activities would include landing and takeoffs (LTO) and cruise operations. **Table 4** provides a summary of the helicopter operations.

[3] United States Environmental Protection Agency, Exhaust Emission Factors for Nonroad Engines Modeling - Spark-Ignition, July 2010, https://www3.epa.gov/otaq/models/nonrdmdl/nonrdmdl2010/420r10019.pdf

Helicopter activity would involve a total of 742 operations; which is approximately 728 operations (52 weeks of operations) for the Hughes 500D and approximately 14 operations (two weeks of operations) for the Bell 214B. A single Hughes 500D helicopter may be used in the Southern Segment for approximately two to three hours on two separate occasions. At least one Hughes 500D helicopter may be used each day construction occurs in the Northern Segment (approximately 10 to 12 months) and up to three helicopters (two Hughes 500D and one Bell 214B) may be used simultaneously during peak construction periods (approximately 8 to 11 days).

Table 4: Estimated Helicopter Operations

Phase	Quantity	Helicopter Type	Mode	Hours per Day	Maximum Duration (weeks)	HP
Pole Installation	2	light duty - Hughes 500D	LTO	0.68	52	317
Pole Installation	2	light duty - Hughes 500D	Operation	9.33	52	317
Pole Installation	1	heavy duty - Bell 214B	LTO	0.68	2	1850
Pole Installation	1	heavy duty - Bell 214B	Operation	9.33	2	1850

Helicopter fugitive dust emissions were based on the emission factors developed by the Desert Research Institute; which found measurements indicating approximately 0.5 kilograms of PM10 emissions during takeoff and 1 kilograms of PM10 emissions during landing.[4] Approximately 10 percent of the PM10 emissions were considered PM2.5.[5] Helicopter combustion emissions were based on the *Guidance on Determination of Helicopter Emissions*.[6] The helicopter combustion emission calculations were reviewed per the FAA's *Aviation Emissions and Air Quality Handbook*[7] and the FAA's Aviation Environmental Design Tool.[8] Default aircraft time-in-mode values were used for each helicopter (e.g., a total of 13.5 minutes within ground idle mode, takeoff, and approach).

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4 Desert Research Institute, Particulate Matter Emissions for Dust from Unique Military Activities, December 31, 2009, http://www.dtic.mil/dtic/tr/fulltext/u2/a478503.pdf

5 Western Governors' Association, WRAP Fugitive Dust Handbook, September 7, 2006, http://www.wrapair.org/forums/dejf/fdh/content/FDHandbook_Rev_06.pdf

6 Guidance on the Determination of Helicopter Emissions, March 2009, https://www.bazl.admin.ch/bazl/en/home/specialists/regulations-and-guidelines/environment/pollutant-emissions/triebwerkemissionen/guidance-on-the-determination-of-helicopter-emissions.html

7 Federal Aviation Administration, Aviation Emissions and Air Quality Handbook, Version 3, Update 1, January, 2015, https://www.faa.gov/regulations_policies/policy_guidance/envir_policy/airquality_handbook/

8 Federal Aviation Administration, Aviation Environmental Design Tool, https://www.faa.gov/about/office_org/headquarters_offices/apl/research/models/aedt/

Attachment C

CalEEMod Output Files

- Annual
- Maximum Daily

PG&E Fulton-Fitch

Sonoma-San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	0.00	User Defined Unit	30.40	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2020
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land Use - The project construction site work area, including staging areas, access areas, access roads, and temporary easement during construction is 30.4 acres.

Construction Phase - Non-default phases enterd.

Off-road Equipment - Project specific equipment list.

Off-road Equipment - Project specific equipment

Off-road Equipment - Project specific equipment.

Off-road Equipment - Project specific equipment

Off-road Equipment - Non-default equipment used.

Off-road Equipment - Project specific equipment

Off-road Equipment - Project specific equipment used.

Off-road Equipment - Project specific equipment

Off-road Equipment - Project specific equipment

Off-road Equipment - Project specific equipment

Off-road Equipment - Project specific equipment

Off-road Equipment - Project specific equipment

Off-road Equipment - Project-specific equipment list.

Off-road Equipment - Project specific equipment

Off-road Equipment - Non-default equipment entered: pickup truck

Off-road Equipment - Project specific equipment.

Off-road Equipment - Project-specific equipment

Trips and VMT - Non-default number of workers used based on information provided by PG&E. Includes imported gravel, new poles hauled on site, and old poles hauled off site.

Grading - Graded acres based on cut work area information provided by LAV Pinnacle Engineering.

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Construction Off-road Equipment Mitigation - Non-default equipment used.

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	21.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
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tblConstructionPhase	NumDays	500.00	105.00
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tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00

tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	PhaseEndDate	2/1/2019	11/18/2018
tblConstructionPhase	PhaseEndDate	4/19/2019	4/26/2019
tblConstructionPhase	PhaseEndDate	9/13/2019	1/26/2020
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tblConstructionPhase	PhaseEndDate	10/26/2018	9/16/2018
tblConstructionPhase	PhaseEndDate	11/25/2018	11/11/2018
tblConstructionPhase	PhaseEndDate	2/24/2019	12/30/2018
tblConstructionPhase	PhaseEndDate	4/14/2019	12/30/2018
tblConstructionPhase	PhaseEndDate	8/3/2018	8/5/2018
tblConstructionPhase	PhaseEndDate	2/22/2019	1/25/2019
tblConstructionPhase	PhaseEndDate	9/15/2018	9/16/2018
tblConstructionPhase	PhaseEndDate	10/12/2018	8/31/2018
tblConstructionPhase	PhaseEndDate	9/28/2018	9/30/2018
tblConstructionPhase	PhaseStartDate	12/31/2018	10/14/2018
tblConstructionPhase	PhaseStartDate	1/26/2019	2/4/2019
tblConstructionPhase	PhaseStartDate	5/18/2019	9/30/2019
tblConstructionPhase	PhaseStartDate	10/1/2018	9/3/2018
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tblGrading	AcresOfGrading	2.25	0.00
tblGrading	MaterialExported	0.00	240.00
tblGrading	MaterialExported	0.00	345.00
tblGrading	MaterialImported	0.00	240.00

tblGrading	MaterialImported	0.00	17,413.00
tblGrading	MaterialImported	0.00	240.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Asphalt Road Paving
tblOffRoadEquipment	PhaseName		Asphalt Road Paving
tblOffRoadEquipment	UsageHours	7.00	4.30
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	1.00
tblOffRoadEquipment	UsageHours	8.00	1.60
tblOffRoadEquipment	UsageHours	8.00	1.20
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	1.50
tblOffRoadEquipment	UsageHours	8.00	6.40
tblOffRoadEquipment	UsageHours	7.00	4.30
tblOffRoadEquipment	UsageHours	8.00	10.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	HaulingTripNumber	0.00	100.00
tblTripsAndVMT	HaulingTripNumber	47.00	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	60.00
tblTripsAndVMT	HaulingTripNumber	0.00	30.00
tblTripsAndVMT	HaulingTripNumber	2,220.00	2,132.00

tblTripsAndVMT	HaulingTripNumber	0.00	400.00
tblTripsAndVMT	HaulingTripNumber	0.00	300.00
tblTripsAndVMT	WorkerTripNumber	0.00	14.00
tblTripsAndVMT	WorkerTripNumber	0.00	14.00
tblTripsAndVMT	WorkerTripNumber	8.00	12.00
tblTripsAndVMT	WorkerTripNumber	0.00	16.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	15.00	20.00
tblTripsAndVMT	WorkerTripNumber	10.00	12.00
tblTripsAndVMT	WorkerTripNumber	3.00	12.00
tblTripsAndVMT	WorkerTripNumber	0.00	14.00
tblTripsAndVMT	WorkerTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	0.00	4.00
tblTripsAndVMT	WorkerTripNumber	0.00	14.00
tblTripsAndVMT	WorkerTripNumber	0.00	14.00

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					
2018	0.5592	5.4733	3.7111	9.3300e-003	0.1309	0.2347	0.3656	0.0538	0.2236	0.2775			826.6253	0.1642	0.0000	830.0736
2019	0.0689	0.7194	0.5461	1.1600e-003	0.0291	0.0321	0.0612	0.0142	0.0296	0.0438			102.3453	0.0294	0.0000	102.9625
2020					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Total	**0.6281**	**6.1927**	**4.2572**	**0.0105**	**0.1600**	**0.2668**	**0.4268**	**0.0680**	**0.2533**	**0.3212**			**928.9706**	**0.1936**	**0.0000**	**933.0361**

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					
2018	0.2645	6.5533	4.9285	9.3300e-003	0.0873	0.1801	0.2674	0.0319	0.1797	0.2116			826.6245	0.1642	0.0000	830.0727
2019	0.0367	0.9023	0.6951	1.1600e-003	0.0167	0.0258	0.0425	7.3200e-003	0.0258	0.0331			102.3452	0.0294	0.0000	102.9624
2020					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Total	**0.3012**	**7.4556**	**5.6236**	**0.0105**	**0.1040**	**0.2058**	**0.3099**	**0.0392**	**0.2054**	**0.2447**			**928.9697**	**0.1936**	**0.0000**	**933.0351**

	ROG	NOx	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	**52.04**	**-20.39**	**-32.10**	**0.00**	**35.00**	**22.84**	**27.40**	**42.30**	**18.89**	**23.84**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

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

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 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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
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
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
Waste						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
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**

	ROG	NOx	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	Survey	Site Preparation	7/2/2018	8/5/2018	5	25	
2	Vegetation Removal and Trimming	Site Preparation	8/6/2018	9/16/2018	6	36	
3	Site Improvements and Reestablishment	Site Preparation	8/6/2018	8/31/2018	5	20	
4	Drainage Crossings	Site Preparation	9/3/2018	9/30/2018	5	20	
5	Auger LDS Pole Holes	Building Construction	9/3/2018	10/14/2018	5	30	

6	Pole Delivery	Building Construction	9/3/2018	9/16/2018	5	10
7	Material, Equipment, Supply Haul	Building Construction	9/3/2018	11/11/2018	7	70
8	LDS Pole Install - Ground	Building Construction	9/17/2018	12/30/2018	7	105
9	Conductor Installation	Building Construction	9/17/2018	12/30/2018	7	105
10	Auger TSP Holes	Building Construction	10/14/2018	11/18/2018	5	25
11	TSP Installation	Building Construction	11/19/2018	12/30/2018	7	42
12	Restoration and Cleanup	Site Preparation	12/3/2018	1/25/2019	5	40
13	Circuit Breaker Installation	Building Construction	2/4/2019	4/26/2019	5	60
14	Road Subgrade Prep	Site Preparation	4/27/2019	5/10/2019	5	10
15	Asphalt Road Paving	Paving	5/11/2019	5/17/2019	5	5
16	LDS Pole Install - Aerial	Building Construction	9/30/2019	1/26/2020	7	119

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Vegetation Removal and Trimming	Crushing/Proc. Equipment	2	8.00	200	0.78
Vegetation Removal and Trimming	Off-Highway Trucks	4	8.00	400	0.38
Site Improvements and Reestablishment	Off-Highway Trucks	1	1.80	400	0.38
Site Improvements and Reestablishment	Off-Highway Trucks	1	2.80	400	0.38
Site Improvements and Reestablishment	Rubber Tired Dozers	1	6.40	255	0.40
Site Improvements and Reestablishment	Skid Steer Loaders	1	1.40	64	0.37
Drainage Crossings	Crawler Tractors	1	1.80	208	0.43
Auger LDS Pole Holes	Bore/Drill Rigs	1	2.00	205	0.50
Auger LDS Pole Holes	Skid Steer Loaders	1	6.00	64	0.37
Pole Delivery	Off-Highway Trucks	1	4.00	400	0.38
Material, Equipment, Supply Haul	Off-Highway Trucks	1	1.40	400	0.38
Material, Equipment, Supply Haul	Off-Highway Trucks	1	4.00	400	0.38

LDS Pole Install - Ground	Air Compressors	1	2.90	78	0.48
LDS Pole Install - Ground	Generator Sets	6	8.00	84	0.74
LDS Pole Install - Ground	Off-Highway Trucks	1	0.80	400	0.38
LDS Pole Install - Ground	Skid Steer Loaders	1	1.10	64	0.37
LDS Pole Install - Ground	Skid Steer Loaders	1	2.70	64	0.37
LDS Pole Install - Ground	Tractors/Loaders/Backhoes	1	4.30	97	0.37
Conductor Installation	Cranes	3	1.00	226	0.29
Conductor Installation	Generator Sets	1	1.20	84	0.74
Conductor Installation	Off-Highway Trucks	1	6.10	400	0.38
Conductor Installation	Off-Highway Trucks	2	6.10	400	0.38
Conductor Installation	Off-Highway Trucks	2	6.10	400	0.38
Auger TSP Holes	Crawler Tractors	1	6.00	208	0.43
Auger TSP Holes	Off-Highway Trucks	1	6.00	400	0.38
TSP Installation	Cranes	1	4.30	226	0.29
TSP Installation	Off-Highway Trucks	2	4.30	400	0.38
TSP Installation	Off-Highway Trucks	1	0.90	400	0.38
Restoration and Cleanup	Graders	1	4.00	174	0.41
Restoration and Cleanup	Off-Highway Trucks	1	2.00	400	0.38
Restoration and Cleanup	Rubber Tired Dozers	1	1.50	255	0.40
Circuit Breaker Installation	Aerial Lifts	1	8.00	62	0.31
Circuit Breaker Installation	Cranes	1	8.00	226	0.29
Circuit Breaker Installation	Excavators	1	8.00	162	0.38
Circuit Breaker Installation	Forklifts	1	8.00	89	0.20
Circuit Breaker Installation	Generator Sets	1	1.60	84	0.74
Circuit Breaker Installation	Off-Highway Trucks	1	8.00	400	0.38
Circuit Breaker Installation	Skid Steer Loaders	1	8.00	64	0.37
Road Subgrade Prep	Skid Steer Loaders	1	10.00	64	0.37
Road Subgrade Prep	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Asphalt Road Paving	Pavers	1	10.00	125	0.42
Asphalt Road Paving	Skid Steer Loaders	1	10.00	64	0.37
Asphalt Road Paving	Tractors/Loaders/Backhoes	1	10.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
LDS Pole Install - Aerial	0			0.00	12.40	7.30				
Vegetation Removal and Trimming	6	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Improvements and Reestablishment	4	12.00	0.00	2,132.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Drainage Crossings	1	12.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Auger LDS Pole Holes	2	14.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Pole Delivery	1	2.00	0.00	400.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Material, Equipment, Supply Haul	2	4.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
LDS Pole Install - Ground	11	14.00	0.00	300.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Conductor Installation	9	14.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Auger TSP Holes	2	14.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
TSP Installation	4	14.00	0.00	100.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Restoration and Cleanup	3	12.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Circuit Breaker Installation	7	16.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Road Subgrade Prep	2	6.00	0.00	60.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Road Paving	3	6.00	0.00	30.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Survey	0			0.00	12.40	7.30				

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Survey - 2018

Unmitigated Construction On-Site

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

Category	tons/yr										MT/yr					
Fugitive Dust					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**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	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
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker					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**

Mitigated Construction On-Site

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

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	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
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker					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**

3.3 Vegetation Removal and Trimming - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Off-Road	0.0873	0.8561	0.4145	1.5400e-003		0.0300	0.0300		0.0283	0.0283			137.4799	0.0295	0.0000	138.0996
Total	**0.0873**	**0.8561**	**0.4145**	**1.5400e-003**	**0.0000**	**0.0300**	**0.0300**	**0.0000**	**0.0283**	**0.0283**			**137.4799**	**0.0295**	**0.0000**	**138.0996**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	1.1800e-003	1.6700e-003	0.0160	4.0000e-005	3.2400e-003	3.0000e-005	3.2700e-003	8.6000e-004	2.0000e-005	8.9000e-004			2.7277	1.4000e-004	0.0000	2.7306
Total	**1.1800e-003**	**1.6700e-003**	**0.0160**	**4.0000e-005**	**3.2400e-003**	**3.0000e-005**	**3.2700e-003**	**8.6000e-004**	**2.0000e-005**	**8.9000e-004**			**2.7277**	**1.4000e-004**	**0.0000**	**2.7306**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Off-Road	0.0351	1.1426	0.7594	1.5400e-003		0.0257	0.0257		0.0257	0.0257			137.4798	0.0295	0.0000	138.0994
Total	**0.0351**	**1.1426**	**0.7594**	**1.5400e-003**	**0.0000**	**0.0257**	**0.0257**	**0.0000**	**0.0257**	**0.0257**			**137.4798**	**0.0295**	**0.0000**	**138.0994**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	1.1800e-003	1.6700e-003	0.0160	4.0000e-005	3.2400e-003	3.0000e-005	3.2700e-003	8.6000e-004	2.0000e-005	8.9000e-004			2.7277	1.4000e-004	0.0000	2.7306

Total	**1.1800e-003**	**1.6700e-003**	**0.0160**	**4.0000e-005**	**3.2400e-003**	**3.0000e-005**	**3.2700e-003**	**8.6000e-004**	**2.0000e-005**	**8.9000e-004**			**2.7277**	**1.4000e-004**	**0.0000**	**2.7306**

3.4 Site Improvements and Reestablishment - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0567	0.0000	0.0567	0.0274	0.0000	0.0274			0.0000	0.0000	0.0000	0.0000
Off-Road	0.0132	0.1433	0.0981	1.5000e-004		6.1600e-003	6.1600e-003		5.6700e-003	5.6700e-003			13.7305	4.2700e-003	0.0000	13.8202
Total	**0.0132**	**0.1433**	**0.0981**	**1.5000e-004**	**0.0567**	**6.1600e-003**	**0.0628**	**0.0274**	**5.6700e-003**	**0.0331**			**13.7305**	**4.2700e-003**	**0.0000**	**13.8202**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0208	0.2578	0.3002	7.8000e-004	0.0178	3.4900e-003	0.0213	4.8800e-003	3.2100e-003	8.0900e-003			68.9913	5.1000e-004	0.0000	69.0020
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	3.9000e-004	5.6000e-004	5.3400e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	3.0000e-004			0.9092	5.0000e-005	0.0000	0.9102
Total	**0.0212**	**0.2584**	**0.3055**	**7.9000e-004**	**0.0189**	**3.5000e-003**	**0.0224**	**5.1700e-003**	**3.2200e-003**	**8.3900e-003**			**69.9005**	**5.6000e-004**	**0.0000**	**69.9122**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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					0.0255	0.0000	0.0255	0.0124	0.0000	0.0124			0.0000	0.0000	0.0000	0.0000
Off-Road	3.7400e-003	0.1216	0.0802	1.5000e-004		2.7600e-003	2.7600e-003		2.7600e-003	2.7600e-003			13.7304	4.2700e-003	0.0000	13.8202
Total	**3.7400e-003**	**0.1216**	**0.0802**	**1.5000e-004**	**0.0255**	**2.7600e-003**	**0.0283**	**0.0124**	**2.7600e-003**	**0.0151**			**13.7304**	**4.2700e-003**	**0.0000**	**13.8202**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0208	0.2578	0.3002	7.8000e-004	0.0178	3.4900e-003	0.0213	4.8800e-003	3.2100e-003	8.0900e-003			68.9913	5.1000e-004	0.0000	69.0020
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	3.9000e-004	5.6000e-004	5.3400e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	3.0000e-004			0.9092	5.0000e-005	0.0000	0.9102
Total	**0.0212**	**0.2584**	**0.3055**	**7.9000e-004**	**0.0189**	**3.5000e-003**	**0.0224**	**5.1700e-003**	**3.2200e-003**	**8.3900e-003**			**69.9005**	**5.6000e-004**	**0.0000**	**69.9122**

3.5 Drainage Crossings - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Off-Road	1.4100e-003	0.0188	5.8700e-003	2.0000e-005		7.1000e-004	7.1000e-004		6.5000e-004	6.5000e-004			1.5829	4.9000e-004	0.0000	1.5932

Total	**1.4100e-003**	**0.0188**	**5.8700e-003**	**2.0000e-005**	**0.0000**	**7.1000e-004**	**7.1000e-004**	**0.0000**	**6.5000e-004**	**6.5000e-004**			**1.5829**	**4.9000e-004**	**0.0000**	**1.5932**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	3.9000e-004	5.6000e-004	5.3400e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	3.0000e-004			0.9092	5.0000e-005	0.0000	0.9102
Total	**3.9000e-004**	**5.6000e-004**	**5.3400e-003**	**1.0000e-005**	**1.0800e-003**	**1.0000e-005**	**1.0900e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**			**0.9092**	**5.0000e-005**	**0.0000**	**0.9102**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Off-Road	4.3000e-004	0.0147	9.2300e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004			1.5829	4.9000e-004	0.0000	1.5932
Total	**4.3000e-004**	**0.0147**	**9.2300e-003**	**2.0000e-005**	**0.0000**	**3.1000e-004**	**3.1000e-004**	**0.0000**	**3.1000e-004**	**3.1000e-004**			**1.5829**	**4.9000e-004**	**0.0000**	**1.5932**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	3.9000e-004	5.6000e-004	5.3400e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	3.0000e-004			0.9092	5.0000e-005	0.0000	0.9102
Total	**3.9000e-004**	**5.6000e-004**	**5.3400e-003**	**1.0000e-005**	**1.0800e-003**	**1.0000e-005**	**1.0900e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**			**0.9092**	**5.0000e-005**	**0.0000**	**0.9102**

3.6 Auger LDS Pole Holes - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.0600e-003	0.0280	0.0227	6.0000e-005		1.0700e-003	1.0700e-003		9.8000e-004	9.8000e-004			5.0690	1.5800e-003	0.0000	5.1022
Total	**2.0600e-003**	**0.0280**	**0.0227**	**6.0000e-005**		**1.0700e-003**	**1.0700e-003**		**9.8000e-004**	**9.8000e-004**			**5.0690**	**1.5800e-003**	**0.0000**	**5.1022**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000

Worker	6.9000e-004	9.7000e-004	9.3500e-003	2.0000e-005	1.8900e-003	2.0000e-005	1.9100e-003	5.0000e-004	1.0000e-005	5.2000e-004			1.5911	8.0000e-005	0.0000	1.5928
Total	**6.9000e-004**	**9.7000e-004**	**9.3500e-003**	**2.0000e-005**	**1.8900e-003**	**2.0000e-005**	**1.9100e-003**	**5.0000e-004**	**1.0000e-005**	**5.2000e-004**			**1.5911**	**8.0000e-005**	**0.0000**	**1.5928**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.8900e-003	0.0505	0.0350	6.0000e-005		1.5000e-003	1.5000e-003		1.5000e-003	1.5000e-003			5.0690	1.5800e-003	0.0000	5.1022
Total	**1.8900e-003**	**0.0505**	**0.0350**	**6.0000e-005**		**1.5000e-003**	**1.5000e-003**		**1.5000e-003**	**1.5000e-003**			**5.0690**	**1.5800e-003**	**0.0000**	**5.1022**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	9.7000e-004	9.3500e-003	2.0000e-005	1.8900e-003	2.0000e-005	1.9100e-003	5.0000e-004	1.0000e-005	5.2000e-004			1.5911	8.0000e-005	0.0000	1.5928
Total	**6.9000e-004**	**9.7000e-004**	**9.3500e-003**	**2.0000e-005**	**1.8900e-003**	**2.0000e-005**	**1.9100e-003**	**5.0000e-004**	**1.0000e-005**	**5.2000e-004**			**1.5911**	**8.0000e-005**	**0.0000**	**1.5928**

3.7 Pole Delivery - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.9200e-003	0.0207	0.0105	3.0000e-005		7.6000e-004	7.6000e-004		7.0000e-004	7.0000e-004			3.0005	9.3000e-004	0.0000	3.0201
Total	**1.9200e-003**	**0.0207**	**0.0105**	**3.0000e-005**		**7.6000e-004**	**7.6000e-004**		**7.0000e-004**	**7.0000e-004**			**3.0005**	**9.3000e-004**	**0.0000**	**3.0201**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.8900e-003	0.0484	0.0563	1.5000e-004	3.3300e-003	6.6000e-004	3.9900e-003	9.2000e-004	6.0000e-004	1.5200e-003			12.9440	1.0000e-004	0.0000	12.9460
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	5.0000e-005	4.5000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005			0.0758	0.0000	0.0000	0.0759
Total	**3.9200e-003**	**0.0484**	**0.0568**	**1.5000e-004**	**3.4200e-003**	**6.6000e-004**	**4.0800e-003**	**9.4000e-004**	**6.0000e-004**	**1.5400e-003**			**13.0197**	**1.0000e-004**	**0.0000**	**13.0218**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	8.0000e-004	0.0254	0.0174	3.0000e-005		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004			3.0005	9.3000e-004	0.0000	3.0201

Total	**8.0000e-004**	**0.0254**	**0.0174**	**3.0000e-005**		**5.9000e-004**	**5.9000e-004**		**5.9000e-004**	**5.9000e-004**			**3.0005**	**9.3000e-004**	**0.0000**	**3.0201**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.8900e-003	0.0484	0.0563	1.5000e-004	3.3300e-003	6.6000e-004	3.9900e-003	9.2000e-004	6.0000e-004	1.5200e-003			12.9440	1.0000e-004	0.0000	12.9460
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	5.0000e-005	4.5000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005			0.0758	0.0000	0.0000	0.0759
Total	**3.9200e-003**	**0.0484**	**0.0568**	**1.5000e-004**	**3.4200e-003**	**6.6000e-004**	**4.0800e-003**	**9.4000e-004**	**6.0000e-004**	**1.5400e-003**			**13.0197**	**1.0000e-004**	**0.0000**	**13.0218**

3.8 Material, Equipment, Supply Haul - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0182	0.1957	0.0988	3.1000e-004		7.1400e-003	7.1400e-003		6.5700e-003	6.5700e-003			28.3549	8.8300e-003	0.0000	28.5403
Total	**0.0182**	**0.1957**	**0.0988**	**3.1000e-004**		**7.1400e-003**	**7.1400e-003**		**6.5700e-003**	**6.5700e-003**			**28.3549**	**8.8300e-003**	**0.0000**	**28.5403**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	6.5000e-004	6.2300e-003	2.0000e-005	1.2600e-003	1.0000e-005	1.2700e-003	3.4000e-004	1.0000e-005	3.5000e-004			1.0608	5.0000e-005	0.0000	1.0619
Total	**4.6000e-004**	**6.5000e-004**	**6.2300e-003**	**2.0000e-005**	**1.2600e-003**	**1.0000e-005**	**1.2700e-003**	**3.4000e-004**	**1.0000e-005**	**3.5000e-004**			**1.0608**	**5.0000e-005**	**0.0000**	**1.0619**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	7.6000e-003	0.2400	0.1647	3.1000e-004		5.5700e-003	5.5700e-003		5.5700e-003	5.5700e-003			28.3548	8.8300e-003	0.0000	28.5402
Total	**7.6000e-003**	**0.2400**	**0.1647**	**3.1000e-004**		**5.5700e-003**	**5.5700e-003**		**5.5700e-003**	**5.5700e-003**			**28.3548**	**8.8300e-003**	**0.0000**	**28.5402**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	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

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	6.5000e-004	6.2300e-003	2.0000e-005	1.2600e-003	1.0000e-005	1.2700e-003	3.4000e-004	1.0000e-005	3.5000e-004			1.0608	5.0000e-005	0.0000	1.0619
Total	**4.6000e-004**	**6.5000e-004**	**6.2300e-003**	**2.0000e-005**	**1.2600e-003**	**1.0000e-005**	**1.2700e-003**	**3.4000e-004**	**1.0000e-005**	**3.5000e-004**			**1.0608**	**5.0000e-005**	**0.0000**	**1.0619**

3.9 LDS Pole Install - Ground - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1806	1.4941	1.3495	2.3500e-003		0.0947	0.0947		0.0940	0.0940			203.4578	0.0194	0.0000	203.8643
Total	**0.1806**	**1.4941**	**1.3495**	**2.3500e-003**		**0.0947**	**0.0947**		**0.0940**	**0.0940**			**203.4578**	**0.0194**	**0.0000**	**203.8643**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.9200e-003	0.0363	0.0422	1.1000e-004	2.5000e-003	4.9000e-004	2.9900e-003	6.9000e-004	4.5000e-004	1.1400e-003			9.7080	7.0000e-005	0.0000	9.7095
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-003	3.4100e-003	0.0327	8.0000e-005	6.6200e-003	5.0000e-005	6.6800e-003	1.7600e-003	5.0000e-005	1.8100e-003			5.5690	2.9000e-004	0.0000	5.5750
Total	**5.3200e-003**	**0.0397**	**0.0749**	**1.9000e-004**	**9.1200e-003**	**5.4000e-004**	**9.6700e-003**	**2.4500e-003**	**5.0000e-004**	**2.9500e-003**			**15.2769**	**3.6000e-004**	**0.0000**	**15.2844**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0905	1.8877	1.4655	2.3500e-003		0.0754	0.0754		0.0754	0.0754			203.4576	0.0194	0.0000	203.8641
Total	**0.0905**	**1.8877**	**1.4655**	**2.3500e-003**		**0.0754**	**0.0754**		**0.0754**	**0.0754**			**203.4576**	**0.0194**	**0.0000**	**203.8641**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.9200e-003	0.0363	0.0422	1.1000e-004	2.5000e-003	4.9000e-004	2.9900e-003	6.9000e-004	4.5000e-004	1.1400e-003			9.7080	7.0000e-005	0.0000	9.7095
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-003	3.4100e-003	0.0327	8.0000e-005	6.6200e-003	5.0000e-005	6.6800e-003	1.7600e-003	5.0000e-005	1.8100e-003			5.5690	2.9000e-004	0.0000	5.5750
Total	**5.3200e-003**	**0.0397**	**0.0749**	**1.9000e-004**	**9.1200e-003**	**5.4000e-004**	**9.6700e-003**	**2.4500e-003**	**5.0000e-004**	**2.9500e-003**			**15.2769**	**3.6000e-004**	**0.0000**	**15.2844**

3.10 Conductor Installation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1690	1.8218	0.9149	2.8000e-003		0.0683	0.0683		0.0630	0.0630			254.8250	0.0783	0.0000	256.4686

Total	**0.1690**	**1.8218**	**0.9149**	**2.8000e-003**		**0.0683**	**0.0683**		**0.0630**	**0.0630**			**254.8250**	**0.0783**	**0.0000**	**256.4686**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-003	3.4100e-003	0.0327	8.0000e-005	6.6200e-003	5.0000e-005	6.6800e-003	1.7600e-003	5.0000e-005	1.8100e-003			5.5690	2.9000e-004	0.0000	5.5750
Total	**2.4000e-003**	**3.4100e-003**	**0.0327**	**8.0000e-005**	**6.6200e-003**	**5.0000e-005**	**6.6800e-003**	**1.7600e-003**	**5.0000e-005**	**1.8100e-003**			**5.5690**	**2.9000e-004**	**0.0000**	**5.5750**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0691	2.1691	1.4862	2.8000e-003		0.0509	0.0509		0.0509	0.0509			254.8247	0.0783	0.0000	256.4683
Total	**0.0691**	**2.1691**	**1.4862**	**2.8000e-003**		**0.0509**	**0.0509**		**0.0509**	**0.0509**			**254.8247**	**0.0783**	**0.0000**	**256.4683**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-003	3.4100e-003	0.0327	8.0000e-005	6.6200e-003	5.0000e-005	6.6800e-003	1.7600e-003	5.0000e-005	1.8100e-003			5.5690	2.9000e-004	0.0000	5.5750
Total	**2.4000e-003**	**3.4100e-003**	**0.0327**	**8.0000e-005**	**6.6200e-003**	**5.0000e-005**	**6.6800e-003**	**1.7600e-003**	**5.0000e-005**	**1.8100e-003**			**5.5690**	**2.9000e-004**	**0.0000**	**5.5750**

3.11 Auger TSP Holes - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0131	0.1559	0.0637	2.0000e-004		5.7900e-003	5.7900e-003		5.3300e-003	5.3300e-003			17.8473	5.5600e-003	0.0000	17.9640
Total	**0.0131**	**0.1559**	**0.0637**	**2.0000e-004**		**5.7900e-003**	**5.7900e-003**		**5.3300e-003**	**5.3300e-003**			**17.8473**	**5.5600e-003**	**0.0000**	**17.9640**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	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

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-004	8.1000e-004	7.7900e-003	2.0000e-005	1.5800e-003	1.0000e-005	1.5900e-003	4.2000e-004	1.0000e-005	4.3000e-004			1.3259	7.0000e-005	0.0000	1.3274
Total	**5.7000e-004**	**8.1000e-004**	**7.7900e-003**	**2.0000e-005**	**1.5800e-003**	**1.0000e-005**	**1.5900e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**			**1.3259**	**7.0000e-005**	**0.0000**	**1.3274**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	4.7900e-003	0.1566	0.1038	2.0000e-004		3.5100e-003	3.5100e-003		3.5100e-003	3.5100e-003			17.8473	5.5600e-003	0.0000	17.9640
Total	**4.7900e-003**	**0.1566**	**0.1038**	**2.0000e-004**		**3.5100e-003**	**3.5100e-003**		**3.5100e-003**	**3.5100e-003**			**17.8473**	**5.5600e-003**	**0.0000**	**17.9640**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-004	8.1000e-004	7.7900e-003	2.0000e-005	1.5800e-003	1.0000e-005	1.5900e-003	4.2000e-004	1.0000e-005	4.3000e-004			1.3259	7.0000e-005	0.0000	1.3274
Total	**5.7000e-004**	**8.1000e-004**	**7.7900e-003**	**2.0000e-005**	**1.5800e-003**	**1.0000e-005**	**1.5900e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**			**1.3259**	**7.0000e-005**	**0.0000**	**1.3274**

3.12 TSP Installation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0255	0.2819	0.1321	3.9000e-004		0.0108	0.0108		9.9400e-003	9.9400e-003			35.7467	0.0111	0.0000	35.9804
Total	**0.0255**	**0.2819**	**0.1321**	**3.9000e-004**		**0.0108**	**0.0108**		**9.9400e-003**	**9.9400e-003**			**35.7467**	**0.0111**	**0.0000**	**35.9804**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.7000e-004	0.0121	0.0141	4.0000e-005	8.3000e-004	1.6000e-004	1.0000e-003	2.3000e-004	1.5000e-004	3.8000e-004			3.2360	2.0000e-005	0.0000	3.2365
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	9.6000e-004	1.3600e-003	0.0131	3.0000e-005	2.6500e-003	2.0000e-005	2.6700e-003	7.0000e-004	2.0000e-005	7.3000e-004			2.2276	1.1000e-004	0.0000	2.2300
Total	**1.9300e-003**	**0.0135**	**0.0272**	**7.0000e-005**	**3.4800e-003**	**1.8000e-004**	**3.6700e-003**	**9.3000e-004**	**1.7000e-004**	**1.1100e-003**			**5.4636**	**1.3000e-004**	**0.0000**	**5.4665**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	9.5900e-003	0.3075	0.2077	3.9000e-004		7.0300e-003	7.0300e-003		7.0300e-003	7.0300e-003			35.7467	0.0111	0.0000	35.9804

Total	**9.5900e-003**	**0.3075**	**0.2077**	**3.9000e-004**		**7.0300e-003**	**7.0300e-003**		**7.0300e-003**	**7.0300e-003**			**35.7467**	**0.0111**	**0.0000**	**35.9804**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.7000e-004	0.0121	0.0141	4.0000e-005	8.3000e-004	1.6000e-004	1.0000e-003	2.3000e-004	1.5000e-004	3.8000e-004			3.2360	2.0000e-005	0.0000	3.2365
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	9.6000e-004	1.3600e-003	0.0131	3.0000e-005	2.6500e-003	2.0000e-005	2.6700e-003	7.0000e-004	2.0000e-005	7.3000e-004			2.2276	1.1000e-004	0.0000	2.2300
Total	**1.9300e-003**	**0.0135**	**0.0272**	**7.0000e-005**	**3.4800e-003**	**1.8000e-004**	**3.6700e-003**	**9.3000e-004**	**1.7000e-004**	**1.1100e-003**			**5.4636**	**1.3000e-004**	**0.0000**	**5.4665**

3.13 Restoration and Cleanup - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0226	0.0000	0.0226	0.0124	0.0000	0.0124			0.0000	0.0000	0.0000	0.0000
Off-Road	8.5100e-003	0.0884	0.0531	8.0000e-005		4.3100e-003	4.3100e-003		3.9600e-003	3.9600e-003			7.7318	2.4100e-003	0.0000	7.7823
Total	**8.5100e-003**	**0.0884**	**0.0531**	**8.0000e-005**	**0.0226**	**4.3100e-003**	**0.0269**	**0.0124**	**3.9600e-003**	**0.0164**			**7.7318**	**2.4100e-003**	**0.0000**	**7.7823**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	5.8000e-004	5.6100e-003	1.0000e-005	1.1400e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004			0.9547	5.0000e-005	0.0000	0.9557
Total	**4.1000e-004**	**5.8000e-004**	**5.6100e-003**	**1.0000e-005**	**1.1400e-003**	**1.0000e-005**	**1.1400e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**			**0.9547**	**5.0000e-005**	**0.0000**	**0.9557**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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					0.0102	0.0000	0.0102	5.5900e-003	0.0000	5.5900e-003			0.0000	0.0000	0.0000	0.0000
Off-Road	2.5200e-003	0.0689	0.0520	8.0000e-005		1.7800e-003	1.7800e-003		1.7800e-003	1.7800e-003			7.7318	2.4100e-003	0.0000	7.7823
Total	**2.5200e-003**	**0.0689**	**0.0520**	**8.0000e-005**	**0.0102**	**1.7800e-003**	**0.0119**	**5.5900e-003**	**1.7800e-003**	**7.3700e-003**			**7.7318**	**2.4100e-003**	**0.0000**	**7.7823**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	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

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	5.8000e-004	5.6100e-003	1.0000e-005	1.1400e-003	1.0000e-005	1.1400e-003	3.0000e-004	1.0000e-005	3.1000e-004			0.9547	5.0000e-005	0.0000	0.9557
Total	**4.1000e-004**	**5.8000e-004**	**5.6100e-003**	**1.0000e-005**	**1.1400e-003**	**1.0000e-005**	**1.1400e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**			**0.9547**	**5.0000e-005**	**0.0000**	**0.9557**

3.13 Restoration and Cleanup - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0226	0.0000	0.0226	0.0124	0.0000	0.0124			0.0000	0.0000	0.0000	0.0000
Off-Road	7.1500e-003	0.0726	0.0465	8.0000e-005		3.5400e-003	3.5400e-003		3.2500e-003	3.2500e-003			6.8806	2.1800e-003	0.0000	6.9263
Total	**7.1500e-003**	**0.0726**	**0.0465**	**8.0000e-005**	**0.0226**	**3.5400e-003**	**0.0261**	**0.0124**	**3.2500e-003**	**0.0157**			**6.8806**	**2.1800e-003**	**0.0000**	**6.9263**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	4.8000e-004	4.5600e-003	1.0000e-005	1.0300e-003	1.0000e-005	1.0400e-003	2.7000e-004	1.0000e-005	2.8000e-004			0.8328	4.0000e-005	0.0000	0.8337
Total	**3.4000e-004**	**4.8000e-004**	**4.5600e-003**	**1.0000e-005**	**1.0300e-003**	**1.0000e-005**	**1.0400e-003**	**2.7000e-004**	**1.0000e-005**	**2.8000e-004**			**0.8328**	**4.0000e-005**	**0.0000**	**0.8337**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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					0.0102	0.0000	0.0102	5.5900e-003	0.0000	5.5900e-003			0.0000	0.0000	0.0000	0.0000
Off-Road	2.2800e-003	0.0624	0.0470	8.0000e-005		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003			6.8806	2.1800e-003	0.0000	6.9263
Total	**2.2800e-003**	**0.0624**	**0.0470**	**8.0000e-005**	**0.0102**	**1.6100e-003**	**0.0118**	**5.5900e-003**	**1.6100e-003**	**7.2000e-003**			**6.8806**	**2.1800e-003**	**0.0000**	**6.9263**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	4.8000e-004	4.5600e-003	1.0000e-005	1.0300e-003	1.0000e-005	1.0400e-003	2.7000e-004	1.0000e-005	2.8000e-004			0.8328	4.0000e-005	0.0000	0.8337
Total	**3.4000e-004**	**4.8000e-004**	**4.5600e-003**	**1.0000e-005**	**1.0300e-003**	**1.0000e-005**	**1.0400e-003**	**2.7000e-004**	**1.0000e-005**	**2.8000e-004**			**0.8328**	**4.0000e-005**	**0.0000**	**0.8337**

3.14 Circuit Breaker Installation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0552	0.5923	0.4185	9.2000e-004		0.0260	0.0260		0.0240	0.0240			82.3304	0.0252	0.0000	82.8594

Total	**0.0552**	**0.5923**	**0.4185**	**9.2000e-004**		**0.0260**	**0.0260**		**0.0240**	**0.0240**			**82.3304**	**0.0252**	**0.0000**	**82.8594**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	1.4100e-003	2.0100e-003	0.0192	5.0000e-005	4.3200e-003	3.0000e-005	4.3600e-003	1.1500e-003	3.0000e-005	1.1800e-003			3.5067	1.7000e-004	0.0000	3.5103
Total	**1.4100e-003**	**2.0100e-003**	**0.0192**	**5.0000e-005**	**4.3200e-003**	**3.0000e-005**	**4.3600e-003**	**1.1500e-003**	**3.0000e-005**	**1.1800e-003**			**3.5067**	**1.7000e-004**	**0.0000**	**3.5103**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0289	0.7684	0.5630	9.2000e-004		0.0217	0.0217		0.0217	0.0217			82.3303	0.0252	0.0000	82.8593
Total	**0.0289**	**0.7684**	**0.5630**	**9.2000e-004**		**0.0217**	**0.0217**		**0.0217**	**0.0217**			**82.3303**	**0.0252**	**0.0000**	**82.8593**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	1.4100e-003	2.0100e-003	0.0192	5.0000e-005	4.3200e-003	3.0000e-005	4.3600e-003	1.1500e-003	3.0000e-005	1.1800e-003			3.5067	1.7000e-004	0.0000	3.5103
Total	**1.4100e-003**	**2.0100e-003**	**0.0192**	**5.0000e-005**	**4.3200e-003**	**3.0000e-005**	**4.3600e-003**	**1.1500e-003**	**3.0000e-005**	**1.1800e-003**			**3.5067**	**1.7000e-004**	**0.0000**	**3.5103**

3.15 Road Subgrade Prep - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Off-Road	1.9800e-003	0.0215	0.0230	3.0000e-005		1.2900e-003	1.2900e-003		1.1900e-003	1.1900e-003			2.8860	9.1000e-004	0.0000	2.9052
Total	**1.9800e-003**	**0.0215**	**0.0230**	**3.0000e-005**	**0.0000**	**1.2900e-003**	**1.2900e-003**	**0.0000**	**1.1900e-003**	**1.1900e-003**			**2.8860**	**9.1000e-004**	**0.0000**	**2.9052**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.7000e-004	6.7000e-003	8.2800e-003	2.0000e-005	5.0000e-004	1.0000e-004	6.0000e-004	1.4000e-004	9.0000e-005	2.3000e-004			1.9120	1.0000e-005	0.0000	1.9123

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	1.3000e-004	1.2000e-003	0.0000	2.7000e-004	0.0000	2.7000e-004	7.0000e-005	0.0000	7.0000e-005			0.2192	1.0000e-005	0.0000	0.2194
Total	**6.6000e-004**	**6.8300e-003**	**9.4800e-003**	**2.0000e-005**	**7.7000e-004**	**1.0000e-004**	**8.7000e-004**	**2.1000e-004**	**9.0000e-005**	**3.0000e-004**			**2.1312**	**2.0000e-005**	**0.0000**	**2.1317**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Off-Road	1.5100e-003	0.0312	0.0243	3.0000e-005		1.2600e-003	1.2600e-003		1.2600e-003	1.2600e-003			2.8860	9.1000e-004	0.0000	2.9052
Total	**1.5100e-003**	**0.0312**	**0.0243**	**3.0000e-005**	**0.0000**	**1.2600e-003**	**1.2600e-003**	**0.0000**	**1.2600e-003**	**1.2600e-003**			**2.8860**	**9.1000e-004**	**0.0000**	**2.9052**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.7000e-004	6.7000e-003	8.2800e-003	2.0000e-005	5.0000e-004	1.0000e-004	6.0000e-004	1.4000e-004	9.0000e-005	2.3000e-004			1.9120	1.0000e-005	0.0000	1.9123
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	1.3000e-004	1.2000e-003	0.0000	2.7000e-004	0.0000	2.7000e-004	7.0000e-005	0.0000	7.0000e-005			0.2192	1.0000e-005	0.0000	0.2194
Total	**6.6000e-004**	**6.8300e-003**	**9.4800e-003**	**2.0000e-005**	**7.7000e-004**	**1.0000e-004**	**8.7000e-004**	**2.1000e-004**	**9.0000e-005**	**3.0000e-004**			**2.1312**	**2.0000e-005**	**0.0000**	**2.1317**

3.16 Asphalt Road Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.8500e-003	0.0202	0.0202	3.0000e-005		1.1100e-003	1.1100e-003		1.0200e-003	1.0200e-003			2.7119	8.6000e-004	0.0000	2.7299
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Total	**1.8500e-003**	**0.0202**	**0.0202**	**3.0000e-005**		**1.1100e-003**	**1.1100e-003**		**1.0200e-003**	**1.0200e-003**			**2.7119**	**8.6000e-004**	**0.0000**	**2.7299**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.9000e-004	3.3500e-003	4.1400e-003	1.0000e-005	2.5000e-004	5.0000e-005	3.0000e-004	7.0000e-005	4.0000e-005	1.1000e-004			0.9560	1.0000e-005	0.0000	0.9562
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	6.0000e-005	6.0000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005			0.1096	1.0000e-005	0.0000	0.1097
Total	**3.3000e-004**	**3.4100e-003**	**4.7400e-003**	**1.0000e-005**	**3.9000e-004**	**5.0000e-005**	**4.4000e-004**	**1.1000e-004**	**4.0000e-005**	**1.5000e-004**			**1.0656**	**2.0000e-005**	**0.0000**	**1.0659**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.3000e-003	0.0277	0.0229	3.0000e-005		1.0000e-003	1.0000e-003		1.0000e-003	1.0000e-003			2.7119	8.6000e-004	0.0000	2.7299

Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Total	**1.3000e-003**	**0.0277**	**0.0229**	**3.0000e-005**		**1.0000e-003**	**1.0000e-003**		**1.0000e-003**	**1.0000e-003**			**2.7119**	**8.6000e-004**	**0.0000**	**2.7299**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.9000e-004	3.3500e-003	4.1400e-003	1.0000e-005	2.5000e-004	5.0000e-005	3.0000e-004	7.0000e-005	4.0000e-005	1.1000e-004			0.9560	1.0000e-005	0.0000	0.9562
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	6.0000e-005	6.0000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005			0.1096	1.0000e-005	0.0000	0.1097
Total	**3.3000e-004**	**3.4100e-003**	**4.7400e-003**	**1.0000e-005**	**3.9000e-004**	**5.0000e-005**	**4.4000e-004**	**1.1000e-004**	**4.0000e-005**	**1.5000e-004**			**1.0656**	**2.0000e-005**	**0.0000**	**1.0659**

3.17 LDS Pole Install - Aerial - 2019

Unmitigated Construction Off-Site

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

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	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
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker					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**

3.17 LDS Pole Install - Aerial - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	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
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker					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**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	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
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Worker					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**

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
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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	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
User Defined Industrial	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.471814	0.077320	0.181313	0.151940	0.061685	0.009120	0.019075	0.010399	0.002651	0.002510	0.008802	0.000509	0.002861

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

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					
User Defined Industrial	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
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**

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					
User Defined Industrial	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
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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	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			

User Defined Industrial	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	0.0000	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

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Landscaping	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**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
Landscaping	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**

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			
User Defined Industrial	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			
User Defined Industrial	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			
User Defined Industrial	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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Vegetation

PG&E Fulton-Fitch

Sonoma-San Francisco County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	0.00	User Defined Unit	30.40	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	75
Climate Zone	4			**Operational Year**	2020
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land Use - The project construction site work area, including staging areas, access areas, access roads, and temporary easement during construction is 30.4 acres.

Construction Phase - Non-default phases enterd.

Off-road Equipment - Project specific equipment list.

Off-road Equipment - Project specific equipment

Off-road Equipment - Project specific equipment.

Off-road Equipment - Project specific equipment

Off-road Equipment - Non-default equipment used.

Off-road Equipment - Project specific equipment

Off-road Equipment - Project specific equipment used.

Off-road Equipment - Project specific equipment

Off-road Equipment - Project specific equipment

Off-road Equipment - Project specific equipment

Off-road Equipment - Project specific equipment

Off-road Equipment - Project specific equipment

Off-road Equipment - Project-specific equipment list.

Off-road Equipment - Project specific equipment

Off-road Equipment - Non-default equipment entered: pickup truck

Off-road Equipment - Project specific equipment.

Off-road Equipment - Project-specific equipment

Trips and VMT - Non-default number of workers used based on information provided by PG&E. Includes imported gravel, new poles hauled on site, and old poles hauled off site.

Grading - Graded acres based on cut work area information provided by LAV Pinnacle Engineering.

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Construction Off-road Equipment Mitigation - Non-default equipment used.

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	21.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
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tblConstEquipMitigation	Tier	No Change	Tier 2
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tblConstructionPhase	NumDays	500.00	60.00
tblConstructionPhase	NumDays	500.00	119.00
tblConstructionPhase	NumDays	500.00	30.00
tblConstructionPhase	NumDays	500.00	10.00
tblConstructionPhase	NumDays	500.00	70.00
tblConstructionPhase	NumDays	500.00	105.00
tblConstructionPhase	NumDays	500.00	105.00
tblConstructionPhase	NumDays	35.00	5.00
tblConstructionPhase	NumDays	20.00	25.00
tblConstructionPhase	NumDays	20.00	40.00
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tblConstructionPhase	NumDays	20.00	36.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00

tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	PhaseEndDate	2/1/2019	11/18/2018
tblConstructionPhase	PhaseEndDate	4/19/2019	4/26/2019
tblConstructionPhase	PhaseEndDate	9/13/2019	1/26/2020
tblConstructionPhase	PhaseEndDate	11/9/2018	10/14/2018
tblConstructionPhase	PhaseEndDate	10/26/2018	9/16/2018
tblConstructionPhase	PhaseEndDate	11/25/2018	11/11/2018
tblConstructionPhase	PhaseEndDate	2/24/2019	12/30/2018
tblConstructionPhase	PhaseEndDate	4/14/2019	12/30/2018
tblConstructionPhase	PhaseEndDate	8/3/2018	8/5/2018
tblConstructionPhase	PhaseEndDate	2/22/2019	1/25/2019
tblConstructionPhase	PhaseEndDate	9/15/2018	9/16/2018
tblConstructionPhase	PhaseEndDate	10/12/2018	8/31/2018
tblConstructionPhase	PhaseEndDate	9/28/2018	9/30/2018
tblConstructionPhase	PhaseStartDate	12/31/2018	10/14/2018
tblConstructionPhase	PhaseStartDate	1/26/2019	2/4/2019
tblConstructionPhase	PhaseStartDate	5/18/2019	9/30/2019
tblConstructionPhase	PhaseStartDate	10/1/2018	9/3/2018
tblConstructionPhase	PhaseStartDate	10/15/2018	9/3/2018
tblConstructionPhase	PhaseStartDate	9/17/2018	9/3/2018
tblConstructionPhase	PhaseStartDate	11/12/2018	9/17/2018
tblConstructionPhase	PhaseStartDate	12/31/2018	9/17/2018
tblConstructionPhase	PhaseStartDate	12/31/2018	12/3/2018
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tblConstructionPhase	PhaseStartDate	9/1/2018	9/3/2018
tblGrading	AcresOfGrading	10.00	0.00
tblGrading	AcresOfGrading	0.00	14.10
tblGrading	AcresOfGrading	2.25	0.00
tblGrading	MaterialExported	0.00	240.00
tblGrading	MaterialExported	0.00	345.00
tblGrading	MaterialImported	0.00	240.00

tblGrading	MaterialImported	0.00	17,413.00
tblGrading	MaterialImported	0.00	240.00
tblLandUse	LotAcreage	0.00	30.40
tblOffRoadEquipment	HorsePower	85.00	200.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	6.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Asphalt Road Paving
tblOffRoadEquipment	PhaseName		Asphalt Road Paving
tblOffRoadEquipment	UsageHours	7.00	4.30
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	1.00
tblOffRoadEquipment	UsageHours	8.00	1.60
tblOffRoadEquipment	UsageHours	8.00	1.20
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	1.50
tblOffRoadEquipment	UsageHours	8.00	6.40
tblOffRoadEquipment	UsageHours	7.00	4.30
tblOffRoadEquipment	UsageHours	8.00	10.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	HaulingTripNumber	0.00	100.00
tblTripsAndVMT	HaulingTripNumber	47.00	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	60.00
tblTripsAndVMT	HaulingTripNumber	0.00	30.00
tblTripsAndVMT	HaulingTripNumber	2,220.00	2,132.00

tblTripsAndVMT	HaulingTripNumber	0.00	400.00
tblTripsAndVMT	HaulingTripNumber	0.00	300.00
tblTripsAndVMT	WorkerTripNumber	0.00	14.00
tblTripsAndVMT	WorkerTripNumber	0.00	14.00
tblTripsAndVMT	WorkerTripNumber	8.00	12.00
tblTripsAndVMT	WorkerTripNumber	0.00	16.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	15.00	20.00
tblTripsAndVMT	WorkerTripNumber	10.00	12.00
tblTripsAndVMT	WorkerTripNumber	3.00	12.00
tblTripsAndVMT	WorkerTripNumber	0.00	14.00
tblTripsAndVMT	WorkerTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	0.00	4.00
tblTripsAndVMT	WorkerTripNumber	0.00	14.00
tblTripsAndVMT	WorkerTripNumber	0.00	14.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	8.9680	86.8035	58.4098	0.1824	7.8165	4.0492	10.4500	3.3299	3.8600	5.7892			17,831.5782	2.9609	0.0000	17,893.7562
2019	1.8903	19.8028	14.6352	0.0325	1.2423	0.8661	1.6153	0.6507	0.8005	0.9938			3,163.1131	0.9319	0.0000	3,182.6834
2020	0.0000	0.0000	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	**10.8582**	**106.6062**	**73.0450**	**0.2149**	**9.0588**	**4.9153**	**12.0653**	**3.9806**	**4.6604**	**6.7831**			**20,994.6913**	**3.8928**	**0.0000**	**21,076.4396**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	4.3533	100.9334	75.7746	0.1824	4.7003	2.9591	6.7558	1.8207	2.9580	3.8480			17,831.5782	2.9609	0.0000	17,893.7562
2019	1.0147	25.6707	19.4512	0.0325	0.6213	0.7254	0.8763	0.3093	0.7253	0.7653			3,163.1131	0.9319	0.0000	3,182.6834
2020	0.0000	0.0000	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	**5.3680**	**126.6041**	**95.2257**	**0.2149**	**5.3216**	**3.6845**	**7.6321**	**2.1300**	**3.6833**	**4.6133**			**20,994.6913**	**3.8928**	**0.0000**	**21,076.4396**

	ROG	NOx	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	**50.56**	**-18.76**	**-30.37**	**0.00**	**41.25**	**25.04**	**36.74**	**46.49**	**20.97**	**31.99**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

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

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

	ROG	NOx	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	Survey	Site Preparation	7/2/2018	8/5/2018	5	25	
2	Vegetation Removal and Trimming	Site Preparation	8/6/2018	9/16/2018	6	36	
3	Site Improvements and Reestablishment	Site Preparation	8/6/2018	8/31/2018	5	20	
4	Drainage Crossings	Site Preparation	9/3/2018	9/30/2018	5	20	
5	Auger LDS Pole Holes	Building Construction	9/3/2018	10/14/2018	5	30	
6	Pole Delivery	Building Construction	9/3/2018	9/16/2018	5	10	
7	Material, Equipment, Supply Haul	Building Construction	9/3/2018	11/11/2018	7	70	
8	LDS Pole Install - Ground	Building Construction	9/17/2018	12/30/2018	7	105	
9	Conductor Installation	Building Construction	9/17/2018	12/30/2018	7	105	
10	Auger TSP Holes	Building Construction	10/14/2018	11/18/2018	5	25	

11	TSP Installation	Building Construction	11/19/2018	12/30/2018	7	42	
12	Restoration and Cleanup	Site Preparation	12/3/2018	1/25/2019	5	40	
13	Circuit Breaker Installation	Building Construction	2/4/2019	4/26/2019	5	60	
14	Road Subgrade Prep	Site Preparation	4/27/2019	5/10/2019	5	10	
15	Asphalt Road Paving	Paving	5/11/2019	5/17/2019	5	5	
16	LDS Pole Install - Aerial	Building Construction	9/30/2019	1/26/2020	7	119	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Vegetation Removal and Trimming	Crushing/Proc. Equipment	2	8.00	200	0.78
Vegetation Removal and Trimming	Off-Highway Trucks	4	8.00	400	0.38
Site Improvements and Reestablishment	Off-Highway Trucks	1	1.80	400	0.38
Site Improvements and Reestablishment	Off-Highway Trucks	1	2.80	400	0.38
Site Improvements and Reestablishment	Rubber Tired Dozers	1	6.40	255	0.40
Site Improvements and Reestablishment	Skid Steer Loaders	1	1.40	64	0.37
Drainage Crossings	Crawler Tractors	1	1.80	208	0.43
Auger LDS Pole Holes	Bore/Drill Rigs	1	2.00	205	0.50
Auger LDS Pole Holes	Skid Steer Loaders	1	6.00	64	0.37
Pole Delivery	Off-Highway Trucks	1	4.00	400	0.38
Material, Equipment, Supply Haul	Off-Highway Trucks	1	1.40	400	0.38
Material, Equipment, Supply Haul	Off-Highway Trucks	1	4.00	400	0.38
LDS Pole Install - Ground	Air Compressors	1	2.90	78	0.48
LDS Pole Install - Ground	Generator Sets	6	8.00	84	0.74
LDS Pole Install - Ground	Off-Highway Trucks	1	0.80	400	0.38
LDS Pole Install - Ground	Skid Steer Loaders	1	1.10	64	0.37
LDS Pole Install - Ground	Skid Steer Loaders	1	2.70	64	0.37

LDS Pole Install - Ground	Tractors/Loaders/Backhoes	1	4.30	97	0.37
Conductor Installation	Cranes	3	1.00	226	0.29
Conductor Installation	Generator Sets	1	1.20	84	0.74
Conductor Installation	Off-Highway Trucks	1	6.10	400	0.38
Conductor Installation	Off-Highway Trucks	2	6.10	400	0.38
Conductor Installation	Off-Highway Trucks	2	6.10	400	0.38
Auger TSP Holes	Crawler Tractors	1	6.00	208	0.43
Auger TSP Holes	Off-Highway Trucks	1	6.00	400	0.38
TSP Installation	Cranes	1	4.30	226	0.29
TSP Installation	Off-Highway Trucks	2	4.30	400	0.38
TSP Installation	Off-Highway Trucks	1	0.90	400	0.38
Restoration and Cleanup	Graders	1	4.00	174	0.41
Restoration and Cleanup	Off-Highway Trucks	1	2.00	400	0.38
Restoration and Cleanup	Rubber Tired Dozers	1	1.50	255	0.40
Circuit Breaker Installation	Aerial Lifts	1	8.00	62	0.31
Circuit Breaker Installation	Cranes	1	8.00	226	0.29
Circuit Breaker Installation	Excavators	1	8.00	162	0.38
Circuit Breaker Installation	Forklifts	1	8.00	89	0.20
Circuit Breaker Installation	Generator Sets	1	1.60	84	0.74
Circuit Breaker Installation	Off-Highway Trucks	1	8.00	400	0.38
Circuit Breaker Installation	Skid Steer Loaders	1	8.00	64	0.37
Road Subgrade Prep	Skid Steer Loaders	1	10.00	64	0.37
Road Subgrade Prep	Tractors/Loaders/Backhoes	1	10.00	97	0.37
Asphalt Road Paving	Pavers	1	10.00	125	0.42
Asphalt Road Paving	Skid Steer Loaders	1	10.00	64	0.37
Asphalt Road Paving	Tractors/Loaders/Backhoes	1	10.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
LDS Pole Install - Aerial	0			0.00	12.40	7.30				

Vegetation Removal and Trimming	6	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Improvements and Reestablishment	4	12.00	0.00	2,132.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Drainage Crossings	1	12.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Auger LDS Pole Holes	2	14.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Pole Delivery	1	2.00	0.00	400.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Material, Equipment, Supply Haul	2	4.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
LDS Pole Install - Ground	11	14.00	0.00	300.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Conductor Installation	9	14.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Auger TSP Holes	2	14.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
TSP Installation	4	14.00	0.00	100.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Restoration and Cleanup	3	12.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Circuit Breaker Installation	7	16.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Road Subgrade Prep	2	6.00	0.00	60.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Road Paving	3	6.00	0.00	30.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Survey	0			0.00	12.40	7.30				

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Survey - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					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**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					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**

Mitigated Construction On-Site

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

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					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**

3.3 Vegetation Removal and Trimming - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	4.8498	47.5626	23.0291	0.0856		1.6661	1.6661		1.5694	1.5694			8,419.2049	1.8071		8,457.1530
Total	**4.8498**	**47.5626**	**23.0291**	**0.0856**	**0.0000**	**1.6661**	**1.6661**	**0.0000**	**1.5694**	**1.5694**			**8,419.2049**	**1.8071**		**8,457.1530**

Unmitigated Construction Off-Site

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

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0708	0.0816	0.9492	2.3100e-003	0.1886	1.4800e-003	0.1901	0.0500	1.3700e-003	0.0514			178.8736	8.5700e-003		179.0535
Total	**0.0708**	**0.0816**	**0.9492**	**2.3100e-003**	**0.1886**	**1.4800e-003**	**0.1901**	**0.0500**	**1.3700e-003**	**0.0514**			**178.8736**	**8.5700e-003**		**179.0535**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.9471	63.4776	42.1877	0.0856		1.4279	1.4279		1.4279	1.4279			8,419.2049	1.8071		8,457.1530
Total	**1.9471**	**63.4776**	**42.1877**	**0.0856**	**0.0000**	**1.4279**	**1.4279**	**0.0000**	**1.4279**	**1.4279**			**8,419.2049**	**1.8071**		**8,457.1530**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0708	0.0816	0.9492	2.3100e-003	0.1886	1.4800e-003	0.1901	0.0500	1.3700e-003	0.0514			178.8736	8.5700e-003		179.0535
Total	**0.0708**	**0.0816**	**0.9492**	**2.3100e-003**	**0.1886**	**1.4800e-003**	**0.1901**	**0.0500**	**1.3700e-003**	**0.0514**			**178.8736**	**8.5700e-003**		**179.0535**

3.4 Site Improvements and Reestablishment - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.6657	0.0000	5.6657	2.7441	0.0000	2.7441			0.0000			0.0000
Off-Road	1.3190	14.3294	9.8139	0.0150		0.6161	0.6161		0.5668	0.5668			1,513.5239	0.4712		1,523.4187
Total	**1.3190**	**14.3294**	**9.8139**	**0.0150**	**5.6657**	**0.6161**	**6.2819**	**2.7441**	**0.5668**	**3.3110**			**1,513.5239**	**0.4712**		**1,523.4187**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.9183	24.7809	24.0480	0.0781	1.8490	0.3489	2.1978	0.5058	0.3209	0.8267			7,612.6518	0.0557		7,613.8219
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0425	0.0490	0.5695	1.3800e-003	0.1132	8.9000e-004	0.1141	0.0300	8.2000e-004	0.0308			107.3241	5.1400e-003		107.4321
Total	**1.9608**	**24.8299**	**24.6176**	**0.0794**	**1.9621**	**0.3498**	**2.3119**	**0.5358**	**0.3217**	**0.8575**			**7,719.9759**	**0.0609**		**7,721.2540**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5496	0.0000	2.5496	1.2349	0.0000	1.2349			0.0000			0.0000

Off-Road	0.3745	12.1619	8.0201	0.0150		0.2763	0.2763		0.2763	0.2763			1,513.5239	0.4712		1,523.4187
Total	**0.3745**	**12.1619**	**8.0201**	**0.0150**	**2.5496**	**0.2763**	**2.8259**	**1.2349**	**0.2763**	**1.5112**			**1,513.5239**	**0.4712**		**1,523.4187**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.9183	24.7809	24.0480	0.0781	1.8490	0.3489	2.1978	0.5058	0.3209	0.8267			7,612.6518	0.0557		7,613.8219
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0425	0.0490	0.5695	1.3800e-003	0.1132	8.9000e-004	0.1141	0.0300	8.2000e-004	0.0308			107.3241	5.1400e-003		107.4321
Total	**1.9608**	**24.8299**	**24.6176**	**0.0794**	**1.9621**	**0.3498**	**2.3119**	**0.5358**	**0.3217**	**0.8575**			**7,719.9759**	**0.0609**		**7,721.2540**

3.5 Drainage Crossings - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1414	1.8774	0.5869	1.7300e-003		0.0710	0.0710		0.0654	0.0654			174.4841	0.0543		175.6248
Total	**0.1414**	**1.8774**	**0.5869**	**1.7300e-003**	**0.0000**	**0.0710**	**0.0710**	**0.0000**	**0.0654**	**0.0654**			**174.4841**	**0.0543**		**175.6248**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0425	0.0490	0.5695	1.3800e-003	0.1132	8.9000e-004	0.1141	0.0300	8.2000e-004	0.0308			107.3241	5.1400e-003		107.4321
Total	**0.0425**	**0.0490**	**0.5695**	**1.3800e-003**	**0.1132**	**8.9000e-004**	**0.1141**	**0.0300**	**8.2000e-004**	**0.0308**			**107.3241**	**5.1400e-003**		**107.4321**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0426	1.4730	0.9228	1.7300e-003		0.0312	0.0312		0.0312	0.0312			174.4841	0.0543		175.6248
Total	**0.0426**	**1.4730**	**0.9228**	**1.7300e-003**	**0.0000**	**0.0312**	**0.0312**	**0.0000**	**0.0312**	**0.0312**			**174.4841**	**0.0543**		**175.6248**

Mitigated Construction Off-Site

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

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0425	0.0490	0.5695	1.3800e-003	0.1132	8.9000e-004	0.1141	0.0300	8.2000e-004	0.0308			107.3241	5.1400e-003		107.4321
Total	**0.0425**	**0.0490**	**0.5695**	**1.3800e-003**	**0.1132**	**8.9000e-004**	**0.1141**	**0.0300**	**8.2000e-004**	**0.0308**			**107.3241**	**5.1400e-003**		**107.4321**

3.6 Auger LDS Pole Holes - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1375	1.8689	1.5131	3.7000e-003		0.0713	0.0713		0.0656	0.0656			372.5093	0.1160		374.9446
Total	**0.1375**	**1.8689**	**1.5131**	**3.7000e-003**		**0.0713**	**0.0713**		**0.0656**	**0.0656**			**372.5093**	**0.1160**		**374.9446**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0496	0.0571	0.6645	1.6200e-003	0.1320	1.0400e-003	0.1331	0.0350	9.6000e-004	0.0360			125.2115	6.0000e-003		125.3374
Total	**0.0496**	**0.0571**	**0.6645**	**1.6200e-003**	**0.1320**	**1.0400e-003**	**0.1331**	**0.0350**	**9.6000e-004**	**0.0360**			**125.2115**	**6.0000e-003**		**125.3374**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1263	3.3634	2.3340	3.7000e-003		0.0999	0.0999		0.0999	0.0999			372.5093	0.1160		374.9446
Total	**0.1263**	**3.3634**	**2.3340**	**3.7000e-003**		**0.0999**	**0.0999**		**0.0999**	**0.0999**			**372.5093**	**0.1160**		**374.9446**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0496	0.0571	0.6645	1.6200e-003	0.1320	1.0400e-003	0.1331	0.0350	9.6000e-004	0.0360			125.2115	6.0000e-003		125.3374
Total	**0.0496**	**0.0571**	**0.6645**	**1.6200e-003**	**0.1320**	**1.0400e-003**	**0.1331**	**0.0350**	**9.6000e-004**	**0.0360**			**125.2115**	**6.0000e-003**		**125.3374**

3.7 Pole Delivery - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3847	4.1418	2.0904	6.5800e-003		0.1512	0.1512		0.1391	0.1391			661.5005	0.2059		665.8252

Total	**0.3847**	**4.1418**	**2.0904**	**6.5800e-003**		**0.1512**	**0.1512**		**0.1391**	**0.1391**			**661.5005**	**0.2059**		**665.8252**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7198	9.2987	9.0237	0.0293	0.6938	0.1309	0.8247	0.1898	0.1204	0.3102			2,856.5298	0.0209		2,856.9688
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	7.0800e-003	8.1600e-003	0.0949	2.3000e-004	0.0189	1.5000e-004	0.0190	5.0000e-003	1.4000e-004	5.1400e-003			17.8874	8.6000e-004		17.9054
Total	**0.7269**	**9.3068**	**9.1186**	**0.0295**	**0.7127**	**0.1311**	**0.8437**	**0.1948**	**0.1206**	**0.3153**			**2,874.4171**	**0.0218**		**2,874.8742**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1609	5.0802	3.4851	6.5800e-003		0.1180	0.1180		0.1180	0.1180			661.5005	0.2059		665.8252
Total	**0.1609**	**5.0802**	**3.4851**	**6.5800e-003**		**0.1180**	**0.1180**		**0.1180**	**0.1180**			**661.5005**	**0.2059**		**665.8252**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7198	9.2987	9.0237	0.0293	0.6938	0.1309	0.8247	0.1898	0.1204	0.3102			2,856.5298	0.0209		2,856.9688
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	7.0800e-003	8.1600e-003	0.0949	2.3000e-004	0.0189	1.5000e-004	0.0190	5.0000e-003	1.4000e-004	5.1400e-003			17.8874	8.6000e-004		17.9054
Total	**0.7269**	**9.3068**	**9.1186**	**0.0295**	**0.7127**	**0.1311**	**0.8437**	**0.1948**	**0.1206**	**0.3153**			**2,874.4171**	**0.0218**		**2,874.8742**

3.8 Material, Equipment, Supply Haul - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5194	5.5914	2.8220	8.8800e-003		0.2041	0.2041		0.1878	0.1878			893.0257	0.2780		898.8640
Total	**0.5194**	**5.5914**	**2.8220**	**8.8800e-003**		**0.2041**	**0.2041**		**0.1878**	**0.1878**			**893.0257**	**0.2780**		**898.8640**

Unmitigated Construction Off-Site

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

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0142	0.0163	0.1898	4.6000e-004	0.0377	3.0000e-004	0.0380	0.0100	2.7000e-004	0.0103			35.7747	1.7100e-003		35.8107
Total	**0.0142**	**0.0163**	**0.1898**	**4.6000e-004**	**0.0377**	**3.0000e-004**	**0.0380**	**0.0100**	**2.7000e-004**	**0.0103**			**35.7747**	**1.7100e-003**		**35.8107**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2172	6.8582	4.7048	8.8800e-003		0.1592	0.1592		0.1592	0.1592			893.0257	0.2780		898.8640
Total	**0.2172**	**6.8582**	**4.7048**	**8.8800e-003**		**0.1592**	**0.1592**		**0.1592**	**0.1592**			**893.0257**	**0.2780**		**898.8640**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0142	0.0163	0.1898	4.6000e-004	0.0377	3.0000e-004	0.0380	0.0100	2.7000e-004	0.0103			35.7747	1.7100e-003		35.8107
Total	**0.0142**	**0.0163**	**0.1898**	**4.6000e-004**	**0.0377**	**3.0000e-004**	**0.0380**	**0.0100**	**2.7000e-004**	**0.0103**			**35.7747**	**1.7100e-003**		**35.8107**

3.9 LDS Pole Install - Ground - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4395	28.4589	25.7046	0.0449		1.8030	1.8030		1.7903	1.7903			4,271.8832	0.4064		4,280.4178
Total	**3.4395**	**28.4589**	**25.7046**	**0.0449**		**1.8030**	**1.8030**		**1.7903**	**1.7903**			**4,271.8832**	**0.4064**		**4,280.4178**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0514	0.6642	0.6446	2.0900e-003	0.0496	9.3500e-003	0.0589	0.0136	8.6000e-003	0.0222			204.0378	1.4900e-003		204.0692
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0496	0.0571	0.6645	1.6200e-003	0.1320	1.0400e-003	0.1331	0.0350	9.6000e-004	0.0360			125.2115	6.0000e-003		125.3374
Total	**0.1010**	**0.7213**	**1.3090**	**3.7100e-003**	**0.1816**	**0.0104**	**0.1920**	**0.0486**	**9.5600e-003**	**0.0581**			**329.2493**	**7.4900e-003**		**329.4066**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7240	35.9564	27.9137	0.0449		1.4359	1.4359		1.4359	1.4359			4,271.8832	0.4064		4,280.4178

Total	**1.7240**	**35.9564**	**27.9137**	**0.0449**		**1.4359**	**1.4359**		**1.4359**	**1.4359**			**4,271.8832**	**0.4064**		**4,280.4178**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0514	0.6642	0.6446	2.0900e-003	0.0496	9.3500e-003	0.0589	0.0136	8.6000e-003	0.0222			204.0378	1.4900e-003		204.0692
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0496	0.0571	0.6645	1.6200e-003	0.1320	1.0400e-003	0.1331	0.0350	9.6000e-004	0.0360			125.2115	6.0000e-003		125.3374
Total	**0.1010**	**0.7213**	**1.3090**	**3.7100e-003**	**0.1816**	**0.0104**	**0.1920**	**0.0486**	**9.5600e-003**	**0.0581**			**329.2493**	**7.4900e-003**		**329.4066**

3.10 Conductor Installation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.2188	34.7006	17.4264	0.0532		1.3003	1.3003		1.1994	1.1994			5,350.4084	1.6433		5,384.9178
Total	**3.2188**	**34.7006**	**17.4264**	**0.0532**		**1.3003**	**1.3003**		**1.1994**	**1.1994**			**5,350.4084**	**1.6433**		**5,384.9178**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0496	0.0571	0.6645	1.6200e-003	0.1320	1.0400e-003	0.1331	0.0350	9.6000e-004	0.0360			125.2115	6.0000e-003		125.3374
Total	**0.0496**	**0.0571**	**0.6645**	**1.6200e-003**	**0.1320**	**1.0400e-003**	**0.1331**	**0.0350**	**9.6000e-004**	**0.0360**			**125.2115**	**6.0000e-003**		**125.3374**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3163	41.3162	28.3091	0.0532		0.9691	0.9691		0.9691	0.9691			5,350.4084	1.6433		5,384.9178
Total	**1.3163**	**41.3162**	**28.3091**	**0.0532**		**0.9691**	**0.9691**		**0.9691**	**0.9691**			**5,350.4084**	**1.6433**		**5,384.9178**

Mitigated Construction Off-Site

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

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0496	0.0571	0.6645	1.6200e-003	0.1320	1.0400e-003	0.1331	0.0350	9.6000e-004	0.0360			125.2115	6.0000e-003		125.3374
Total	**0.0496**	**0.0571**	**0.6645**	**1.6200e-003**	**0.1320**	**1.0400e-003**	**0.1331**	**0.0350**	**9.6000e-004**	**0.0360**			**125.2115**	**6.0000e-003**		**125.3374**

3.11 Auger TSP Holes - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0483	12.4708	5.0918	0.0156		0.4635	0.4635		0.4264	0.4264			1,573.8644	0.4900		1,584.1536
Total	**1.0483**	**12.4708**	**5.0918**	**0.0156**		**0.4635**	**0.4635**		**0.4264**	**0.4264**			**1,573.8644**	**0.4900**		**1,584.1536**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0496	0.0571	0.6645	1.6200e-003	0.1320	1.0400e-003	0.1331	0.0350	9.6000e-004	0.0360			125.2115	6.0000e-003		125.3374
Total	**0.0496**	**0.0571**	**0.6645**	**1.6200e-003**	**0.1320**	**1.0400e-003**	**0.1331**	**0.0350**	**9.6000e-004**	**0.0360**			**125.2115**	**6.0000e-003**		**125.3374**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3832	12.5301	8.3036	0.0156		0.2811	0.2811		0.2811	0.2811			1,573.8644	0.4900		1,584.1536
Total	**0.3832**	**12.5301**	**8.3036**	**0.0156**		**0.2811**	**0.2811**		**0.2811**	**0.2811**			**1,573.8644**	**0.4900**		**1,584.1536**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0496	0.0571	0.6645	1.6200e-003	0.1320	1.0400e-003	0.1331	0.0350	9.6000e-004	0.0360			125.2115	6.0000e-003		125.3374
Total	**0.0496**	**0.0571**	**0.6645**	**1.6200e-003**	**0.1320**	**1.0400e-003**	**0.1331**	**0.0350**	**9.6000e-004**	**0.0360**			**125.2115**	**6.0000e-003**		**125.3374**

3.12 TSP Installation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2139	13.4236	6.2908	0.0187		0.5143	0.5143		0.4731	0.4731			1,876.3804	0.5841		1,888.6474

Total	**1.2139**	**13.4236**	**6.2908**	**0.0187**		**0.5143**	**0.5143**		**0.4731**	**0.4731**			**1,876.3804**	**0.5841**		**1,888.6474**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0429	0.5535	0.5371	1.7400e-003	0.0413	7.7900e-003	0.0491	0.0113	7.1700e-003	0.0185			170.0315	1.2400e-003		170.0577
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0496	0.0571	0.6645	1.6200e-003	0.1320	1.0400e-003	0.1331	0.0350	9.6000e-004	0.0360			125.2115	6.0000e-003		125.3374
Total	**0.0924**	**0.6106**	**1.2016**	**3.3600e-003**	**0.1733**	**8.8300e-003**	**0.1822**	**0.0463**	**8.1300e-003**	**0.0544**			**295.2430**	**7.2400e-003**		**295.3951**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4566	14.6438	9.8924	0.0187		0.3348	0.3348		0.3348	0.3348			1,876.3804	0.5841		1,888.6474
Total	**0.4566**	**14.6438**	**9.8924**	**0.0187**		**0.3348**	**0.3348**		**0.3348**	**0.3348**			**1,876.3804**	**0.5841**		**1,888.6474**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0429	0.5535	0.5371	1.7400e-003	0.0413	7.7900e-003	0.0491	0.0113	7.1700e-003	0.0185			170.0315	1.2400e-003		170.0577
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0496	0.0571	0.6645	1.6200e-003	0.1320	1.0400e-003	0.1331	0.0350	9.6000e-004	0.0360			125.2115	6.0000e-003		125.3374
Total	**0.0924**	**0.6106**	**1.2016**	**3.3600e-003**	**0.1733**	**8.8300e-003**	**0.1822**	**0.0463**	**8.1300e-003**	**0.0544**			**295.2430**	**7.2400e-003**		**295.3951**

3.13 Restoration and Cleanup - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1291	0.0000	1.1291	0.6207	0.0000	0.6207			0.0000			0.0000
Off-Road	0.8102	8.4191	5.0594	8.0600e-003		0.4104	0.4104		0.3776	0.3776			811.6973	0.2527		817.0038
Total	**0.8102**	**8.4191**	**5.0594**	**8.0600e-003**	**1.1291**	**0.4104**	**1.5396**	**0.6207**	**0.3776**	**0.9983**			**811.6973**	**0.2527**		**817.0038**

Unmitigated Construction Off-Site

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

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0425	0.0490	0.5695	1.3800e-003	0.1132	8.9000e-004	0.1141	0.0300	8.2000e-004	0.0308			107.3241	5.1400e-003		107.4321
Total	**0.0425**	**0.0490**	**0.5695**	**1.3800e-003**	**0.1132**	**8.9000e-004**	**0.1141**	**0.0300**	**8.2000e-004**	**0.0308**			**107.3241**	**5.1400e-003**		**107.4321**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5081	0.0000	0.5081	0.2793	0.0000	0.2793			0.0000			0.0000
Off-Road	0.2404	6.5633	4.9472	8.0600e-003		0.1692	0.1692		0.1692	0.1692			811.6973	0.2527		817.0038
Total	**0.2404**	**6.5633**	**4.9472**	**8.0600e-003**	**0.5081**	**0.1692**	**0.6773**	**0.2793**	**0.1692**	**0.4485**			**811.6973**	**0.2527**		**817.0038**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0425	0.0490	0.5695	1.3800e-003	0.1132	8.9000e-004	0.1141	0.0300	8.2000e-004	0.0308			107.3241	5.1400e-003		107.4321
Total	**0.0425**	**0.0490**	**0.5695**	**1.3800e-003**	**0.1132**	**8.9000e-004**	**0.1141**	**0.0300**	**8.2000e-004**	**0.0308**			**107.3241**	**5.1400e-003**		**107.4321**

3.13 Restoration and Cleanup - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1291	0.0000	1.1291	0.6207	0.0000	0.6207			0.0000			0.0000
Off-Road	0.7526	7.6438	4.8940	8.0600e-003		0.3721	0.3721		0.3424	0.3424			798.3778	0.2526		803.6824
Total	**0.7526**	**7.6438**	**4.8940**	**8.0600e-003**	**1.1291**	**0.3721**	**1.5013**	**0.6207**	**0.3424**	**0.9630**			**798.3778**	**0.2526**		**803.6824**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0385	0.0443	0.5145	1.3800e-003	0.1132	8.6000e-004	0.1140	0.0300	8.0000e-004	0.0308			103.4913	4.7500e-003		103.5911
Total	**0.0385**	**0.0443**	**0.5145**	**1.3800e-003**	**0.1132**	**8.6000e-004**	**0.1140**	**0.0300**	**8.0000e-004**	**0.0308**			**103.4913**	**4.7500e-003**		**103.5911**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5081	0.0000	0.5081	0.2793	0.0000	0.2793			0.0000			0.0000

Off-Road	0.2404	6.5633	4.9472	8.0600e-003		0.1692	0.1692		0.1692	0.1692			798.3778	0.2526		803.6824
Total	**0.2404**	**6.5633**	**4.9472**	**8.0600e-003**	**0.5081**	**0.1692**	**0.6773**	**0.2793**	**0.1692**	**0.4485**			**798.3778**	**0.2526**		**803.6824**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0385	0.0443	0.5145	1.3800e-003	0.1132	8.6000e-004	0.1140	0.0300	8.0000e-004	0.0308			103.4913	4.7500e-003		103.5911
Total	**0.0385**	**0.0443**	**0.5145**	**1.3800e-003**	**0.1132**	**8.6000e-004**	**0.1140**	**0.0300**	**8.0000e-004**	**0.0308**			**103.4913**	**4.7500e-003**		**103.5911**

3.14 Circuit Breaker Installation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8389	19.7437	13.9491	0.0306		0.8650	0.8650		0.7994	0.7994			3,025.1247	0.9256		3,044.5620
Total	**1.8389**	**19.7437**	**13.9491**	**0.0306**		**0.8650**	**0.8650**		**0.7994**	**0.7994**			**3,025.1247**	**0.9256**		**3,044.5620**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0514	0.0591	0.6860	1.8500e-003	0.1509	1.1500e-003	0.1520	0.0400	1.0700e-003	0.0411			137.9884	6.3300e-003		138.1214
Total	**0.0514**	**0.0591**	**0.6860**	**1.8500e-003**	**0.1509**	**1.1500e-003**	**0.1520**	**0.0400**	**1.0700e-003**	**0.0411**			**137.9884**	**6.3300e-003**		**138.1214**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9634	25.6116	18.7651	0.0306		0.7243	0.7243		0.7243	0.7243			3,025.1247	0.9256		3,044.5620
Total	**0.9634**	**25.6116**	**18.7651**	**0.0306**		**0.7243**	**0.7243**		**0.7243**	**0.7243**			**3,025.1247**	**0.9256**		**3,044.5620**

Mitigated Construction Off-Site

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

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0514	0.0591	0.6860	1.8500e-003	0.1509	1.1500e-003	0.1520	0.0400	1.0700e-003	0.0411			137.9884	6.3300e-003		138.1214
Total	**0.0514**	**0.0591**	**0.6860**	**1.8500e-003**	**0.1509**	**1.1500e-003**	**0.1520**	**0.0400**	**1.0700e-003**	**0.0411**			**137.9884**	**6.3300e-003**		**138.1214**

3.15 Road Subgrade Prep - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.3951	4.3082	4.5893	6.4300e-003		0.2586	0.2586		0.2379	0.2379			636.2583	0.2013		640.4857
Total	**0.3951**	**4.3082**	**4.5893**	**6.4300e-003**	**0.0000**	**0.2586**	**0.2586**	**0.0000**	**0.2379**	**0.2379**			**636.2583**	**0.2013**		**640.4857**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1063	1.2876	1.3247	4.4000e-003	0.1041	0.0194	0.1236	0.0285	0.0179	0.0464			421.9542	3.1300e-003		422.0200
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0193	0.0222	0.2573	6.9000e-004	0.0566	4.3000e-004	0.0570	0.0150	4.0000e-004	0.0154			51.7457	2.3800e-003		51.7955
Total	**0.1256**	**1.3098**	**1.5820**	**5.0900e-003**	**0.1607**	**0.0199**	**0.1806**	**0.0435**	**0.0183**	**0.0618**			**473.6999**	**5.5100e-003**		**473.8155**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.3021	6.2382	4.8592	6.4300e-003		0.2522	0.2522		0.2522	0.2522			636.2583	0.2013		640.4857
Total	**0.3021**	**6.2382**	**4.8592**	**6.4300e-003**	**0.0000**	**0.2522**	**0.2522**	**0.0000**	**0.2522**	**0.2522**			**636.2583**	**0.2013**		**640.4857**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1063	1.2876	1.3247	4.4000e-003	0.1041	0.0194	0.1236	0.0285	0.0179	0.0464			421.9542	3.1300e-003		422.0200
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0193	0.0222	0.2573	6.9000e-004	0.0566	4.3000e-004	0.0570	0.0150	4.0000e-004	0.0154			51.7457	2.3800e-003		51.7955
Total	**0.1256**	**1.3098**	**1.5820**	**5.0900e-003**	**0.1607**	**0.0199**	**0.1806**	**0.0435**	**0.0183**	**0.0618**			**473.6999**	**5.5100e-003**		**473.8155**

3.16 Asphalt Road Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7409	8.0638	8.0769	0.0121		0.4425	0.4425		0.4071	0.4071			1,195.7513	0.3783		1,203.6961

Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7409**	**8.0638**	**8.0769**	**0.0121**		**0.4425**	**0.4425**		**0.4071**	**0.4071**			**1,195.7513**	**0.3783**		**1,203.6961**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1063	1.2876	1.3247	4.4000e-003	0.1041	0.0194	0.1236	0.0285	0.0179	0.0464			421.9542	3.1300e-003		422.0200
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0193	0.0222	0.2573	6.9000e-004	0.0566	4.3000e-004	0.0570	0.0150	4.0000e-004	0.0154			51.7457	2.3800e-003		51.7955
Total	**0.1256**	**1.3098**	**1.5820**	**5.0900e-003**	**0.1607**	**0.0199**	**0.1806**	**0.0435**	**0.0183**	**0.0618**			**473.6999**	**5.5100e-003**		**473.8155**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5220	11.0646	9.1417	0.0121		0.4003	0.4003		0.4003	0.4003			1,195.7513	0.3783		1,203.6961
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.5220**	**11.0646**	**9.1417**	**0.0121**		**0.4003**	**0.4003**		**0.4003**	**0.4003**			**1,195.7513**	**0.3783**		**1,203.6961**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1063	1.2876	1.3247	4.4000e-003	0.1041	0.0194	0.1236	0.0285	0.0179	0.0464			421.9542	3.1300e-003		422.0200
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000		0.0000
Worker	0.0193	0.0222	0.2573	6.9000e-004	0.0566	4.3000e-004	0.0570	0.0150	4.0000e-004	0.0154			51.7457	2.3800e-003		51.7955
Total	**0.1256**	**1.3098**	**1.5820**	**5.0900e-003**	**0.1607**	**0.0199**	**0.1806**	**0.0435**	**0.0183**	**0.0618**			**473.6999**	**5.5100e-003**		**473.8155**

3.17 LDS Pole Install - Aerial - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					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**

Mitigated Construction Off-Site

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

Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					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**

3.17 LDS Pole Install - Aerial - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					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**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					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**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	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
User Defined Industrial	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.471814	0.077320	0.181313	0.151940	0.061685	0.009120	0.019075	0.010399	0.002651	0.002510	0.008802	0.000509	0.002861

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	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
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**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					

User Defined Industrial	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
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**

6.0 Area Detail

6.1 Mitigation Measures Area

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

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	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**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	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**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation