DOCKETED	
Docket Number:	20-SPPE-03
Project Title:	Gilroy Backup Generating Facility
TN #:	237353
Document Title:	GBGF Revised AQIA
Description:	N/A
Filer:	Scott Galati
Organization:	DayZenLLC
Submitter Role:	Applicant Representative
Submission Date:	3/30/2021 1:02:29 PM
Docketed Date:	3/30/2021

REVISED AIR QUALITY IMPACT ASSESSMENT

For the Small Power Plant Exemption Application

Amazon Data Services, Inc.> Gilroy, CA
Gilroy Backup Generating Facility

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November 2020
Revised March 2021

Project 200502.0036

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TABLE OF CONTENTS

TABLE OF CONTENTS I

LIST OF FIGURES III

LIST OF TABLES IV

1. EXECUTIVE SUMMARY 1-1

2. PROJECT DESCRIPTION 2-1

2.1 Introduction 2-1
2.2 General Facility Background 2-1
2.3 Project Description 2-3
2.3.1 GBGF General Site Arrangement and Layout 2-3
2.3.2 Electrical Generation Equipment 2-4
2.3.3 Facility Operation 2-4
2.4 Project Phasing and Construction 2-5

3. SETTING 3-1

3.1 Introduction 3-1
3.2 Environmental Setting 3-1
3.2.1 Climate and Meteorology 3-1
3.2.2 Regional Air Quality 3-2
3.2.3 Local Air Quality 3-8
3.2.4 Sensitive Land Uses Near the Proposed Project Area 3-11
3.2.5 Greenhouse Gases 3-16
3.3 Existing Policies and Regulations – Air Quality 3-20
3.3.1 Federal Regulatory Authority 3-21
3.3.2 State of California Regulatory Authority 3-22
3.3.3 Regional Regulatory Authority 3-22
3.3.4 Local Regulatory Authority 3-23
3.3.5 Regulatory Authority for Odors and Nuisances 3-26
3.3.6 Toxic Air Contaminants Regulations – Air Quality 3-26
3.4 Existing Policies and Regulations – GHGs 3-28
3.4.1 International Regulation – GHG 3-28
3.4.2 Federal Regulations and Standards – GHG 3-29
3.4.3 State Regulations and Standards – GHG 3-29
3.4.4 Regional Policies – GHG 3-32

4. IMPACTS ASSESSMENT 4-1

4.1 Significance Criteria 4-1
4.2 Project Emissions 4-1
4.2.1 Project Construction Emissions 4-1
4.2.2 Operational Emissions Calculation Methodology 4-7
4.2.3 Project Operational Emissions 4-8
4.3 Air Dispersion Modeling Methodology 4-11
4.3.1 Air Dispersion Model 4-11
4.3.2 Coordinate System 4-11
4.3.3 Terrain Elevations 4-11

4.3.4 Meteorological Data *4-12*
4.3.5 Building Downwash *4-12*
4.3.6 Receptors *4-12*
4.4 Generator Load Screening Analysis 4-13
4.4.1 Emission Sources *4-13*
4.4.2 Emission Rates *4-2*
4.4.3 Refined Analysis for 1-Hour NO_2 Standards *4-2*
4.4.4 Load Screening Analysis Model Results *4-3*
4.5 Construction Phase Air Dispersion Modeling Analysis 4-4
4.5.1 Emission Sources *4-4*
4.5.2 Emission Rates *4-5*
4.5.3 Background Concentration *4-6*
4.5.4 Ambient Air Dispersion Model Results *4-6*
4.6 Operational Phase Air Dispersion Modeling Analysis 4-9
4.6.1 Emission Sources *4-9*
4.6.2 Emission Rates *4-9*
4.6.3 Background Concentration *4-9*
4.6.4 Ambient Air Dispersion Model Results *4-10*
4.7 Operational Phase Nitrogen Deposition Modeling Analysis 4-12
4.7.1 Critical Habitat Location *4-12*
4.7.2 Emission Sources and Rates *4-12*
4.7.3 AERMOD Parameters and Receptor Grid *4-12*
4.7.4 Deposition Modeling Results *4-15*
4.8 Health Risk Assessments 4-15
4.8.1 Receptors *4-16*
4.8.2 Emission Sources *4-16*
4.8.3 Emission Rates *4-17*
4.8.4 Exposure Pathways *4-17*
4.8.5 Construction Phase Exposure Duration *4-17*
4.8.6 Operational Phase Exposure Duration *4-17*
4.8.7 Project Air Toxic Modeling Results *4-18*
4.8.8 Cumulative Health Risk Assessment Results *4-24*
4.9 Impact Summary and Mitigation Recommendations 4-26
4.9.1 Types of Impacts *4-27*
4.9.2 Impact: Air Quality Criteria A and B *4-27*
4.9.3 Impact: Air Quality Criteria C and D *4-28*
4.9.4 Impact: Greenhouse Gases Criteria A and B *4-28*

5. REFERENCES 5-1

APPENDIX A-1: SITE PLANS 1

APPENDIX A-2: EQUIPMENT SPECIFICATIONS 2

APPENDIX A-3: EMISSION CALCULATIONS 3

APPENDIX A-4: CALEEMOD OUTPUT FILES 4

APPENDIX A-5: LOAD SCREENING ANALYSIS MODEL INPUT 5

APPENDIX A-6: LOAD SCREENING ANALYSIS MODEL TOTAL OUTPUT 6

LIST OF FIGURES

Figure 2-1: Regional Location 2-2

Figure 2-2: Surrounding Local Area 2-3

Figure 3-1: Project Site and Monitoring Sites 3-9

Figure 3-2: Location of Sensitive Receptors and Surrounding Residential Areas 3-16

Figure 4-1: Layout of Modeled Emission Sources for the Proposed Project 4-14

Figure 4-2: Ammonium Nitrate Deposition Isopleth 4-14

Figure 4-3: Ammonium Sulfate Deposition Isopleth 4-14

Figure 4-4: Location of MEIs and PMIs 4-21

Figure 4-5: Operational Phase One in 10^6 Cancer Risk Zone of Impact 4-23

LIST OF TABLES

Table 1-1. Summary of Construction Emissions 1-2

Table 1-2. Summary of Operational Emissions 1-2

Table 1-3. Environmental Impact Significance Determinations 1-4

Table 2-1: Critical Backup Generator Testing and Maintenance Events 2-5

Table 3-1: Summary of Ambient Air Quality Standards 3-4

Table 3-2: Summary of BAAQMD Attainment Status 3-5

Table 3-3: Summary of Health and Environmental Effects of Key Criteria Pollutants 3-6

Table 3-4: Representative Air Quality Monitoring Stations for the Proposed Project Area 3-8

Table 3-5: Existing Air Quality Monitoring Data in Proposed Project Area [a,b,c] 3-10

Table 3-6: Sensitive Receptors near the Project Area 3-12

Table 3-7: Residential Areas near the Project Area 3-15

Table 3-8: GWPs, Properties, and Sources of GHGs 3-18

Table 4-1: BAAQMD Air Quality CEQA Thresholds of Significance 4-2

Table 4-2: Construction Equipment 4-1

Table 4-3: CalEEMod Significant Modifications to Default Inputs 4-4

Table 4-4: Project Construction Emissions Summary and Comparison to Significance Thresholds 4-5

Table 4-5: Project Operational Emissions 4-9

Table 4-6: Project Operational Emissions Summary and Comparison to Significance Thresholds 4-10

Table 4-7: Load Screening Analysis Generator Parameters 4-1

Table 4-8: Load Screening Analysis Model Worst-Case Scenario Results 4-4

Table 4-9: Project Construction Air Dispersion Modeling Volume Source Input Parameters 4-5

Table 4-10: Construction Phase Ambient Air Quality Dispersion Model Results and Comparison to AAQS 4-8

Table 4-11: Operation Phase Ambient Air Quality Dispersion Model Results and Comparison to AAQS 4-11

Table 4-12: AERMOD Deposition Analysis Constants 4-12

Table 4-13: Deposition Results 4-15

Table 4-14 : Construction Phase Health Risk Assessment Results 4-19

Table 4-15: Operational Phase Health Risk Assessment Results 4-20

Table 4-16: Impacts from Cumulative Sources 4-25

Table 4-17 : Environmental Impact Significance Determinations 4-26

1. EXECUTIVE SUMMARY

Trinity Consultants, Inc. (Trinity) has prepared an air quality and greenhouse gas (GHG) impact assessment, collectively referred to as the Air Quality Impact Assessment (AQIA), to evaluate potential impacts associated with the proposed construction and operation of the Gilroy Backup Generating Facility (GBGF) (the Project) proposed by Amazon Data Services, Inc., wholly owned by Amazon.com, Inc. (the Applicant). This AQIA, a revision from an AQIA submitted in late 2020, supports the Applicant's application for a Small Power Plant Exemption (SPPE) pursuant to Public Resources Code Section 25541 and Section 1934 et seq. of the California Energy Commission (CEC or the Commission) regulations for the GBGF. This revision addresses the BACT requirements implemented by the Bay Area Air Quality Management District (BAAQMD) on December 22, 2020. The GBGF will be located within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD), as such, this AQIA was prepared in accordance with the standards, procedures, and methodologies established in the BAAQMD California Environmental Quality Act (CEQA) Air Quality Guidelines, dated May 2017, and the California Natural Resources Agency's CEQA Guidelines (BAAQMD, 2017b and California Natural Resources Agency, 2019).

The GBGF will consist of a total of 53 diesel-fired emergency generators that will be used exclusively to provide backup power generation to support the Gilroy Data Center (GDC), located at Camino Arroyo in Gilroy, California. Fifty (50) of the emergency generators will be 3,634 brake horsepower (bhp) each, herein referred to as critical backup generators. Two of the emergency generators will be smaller generators rated at 900 bhp each to support fire suppression and other emergency operations, herein referred to as life safety generators. One of the emergency generators will be a smaller generator rated at 280 bhp to support a security building. The GBGF is designed to operate only when electricity from Pacific Gas and Electric Company (PG&E) is unavailable to the GDC.

The proposed Project comprises two primary phases: Phase I and Phase II. Phase I will include the installation of 26 critical backup generators and one life safety generator to support the GDC western building. Phase I will also include installation of the security building generator which will be located adjacent to the site security building. Phase II will include the installation of 24 critical backup generators and one life safety generator to support the GDC eastern building. Construction emissions from the creation of the GBGF will result from ground preparation, grading activities, building erection, parking lot construction activities, use of onsite construction equipment, and architectural coating.

CEQA requires that a lead agency evaluate the potential air pollutant and GHG emissions of a project and determine whether the emissions would result in a significant impact on the environment. The AQIA evaluates the potential emissions related to the proposed Project through individual calculations of air emissions for the proposed Project as well as a discussion of existing air quality and GHG conditions associated with the proposed project location. Emissions are evaluated for the construction phase and operational phase of the GBGF, consistent with the BAAQMD CEQA Air Quality Guidelines. Sources of emissions from the Project include:

- Various construction equipment (construction phase)
- 50 critical backup generators (operational phase)
- 2 life safety generators (operational phase)
- 1 security building generator (operational phase)

The proposed Project would result in emissions of reactive organic gases (ROG) or volatile organic compounds (VOC), carbon monoxide (CO), nitrogen oxides (NO_x), sulfur oxides (SO_x), particulate matter (PM_{10} and $PM_{2.5}$), and GHGs. Table 1-1 summarizes the construction phase emissions and Table 1-2 summarizes the operational phase emissions associated with the proposed Project and comparison to the

BAAQMD thresholds of significance, as provided in the BAAQMD CEQA Air Quality Guidelines. The AQIA provides substantial evidence that emissions resulting from the Project would be below the BAAQMD's thresholds of significance and would result in *less than significant* impacts associated with criteria air pollutant and GHG emissions, except for NO_x.

For the construction phase of the Project, NO_x emissions result from the operation of various mobile construction equipment and vehicular sources. The Applicant will incorporate Mitigation Measure AQ-1, which includes the use of several Tier 4 Final construction equipment units to reduce NO_x emissions during the construction phase. During the construction of the Phase II building exterior, the Applicant will incorporate Mitigation Measure AQ-2 to reduce offsite NO_x concentration impacts, resulting in a *less than significant impact with mitigation incorporated*.

Table 1-1. Summary of Construction Emissions

Activity	Pollutant								
	Fugitive PM_{10} [a]	Fugitive $PM_{2.5}$ [a]	PM_{10}	$PM_{2.5}$	CO	NO_x	ROG/ VOC	SO_2	CO_2e
	Pounds per Day (lb/day)								
Construction Emissions	4.50	1.43	5.95	3.27	80.0	52.6	47.9	0.17	For this analysis and comparison to thresholds, GHG emissions are calculated on an annual basis only.
Significance Threshold	***N/A***	***N/A***	***82***	***54***	***N/A***	***54***	***54***	***N/A***	
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***	***No***	***No***	
Activity	**Tons per Year (tpy) [b]**								**Metric Tons per Year (MT/yr)**
Construction Emissions	0.59	0.19	0.77	0.43	10.4	6.84	6.22	0.02	1,976
Significance Thresholds [c]	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***	***No***	***No***	***N/A***

a. Fugitive emissions will be controlled with best management practices, in accordance with the significance threshold.
b. Construction emissions represent the maximum mitigated emissions based on 260 total weekdays per year.
c. There are no annual construction-related thresholds of significance.

For the operational phase of the Project, the vast majority of NO_x emissions result from routine operation of the 53 generators, the Applicant will purchase NO_x emission offsets for the routine operation of the 53 generators through the BAAQMD air permitting process and will incorporate Mitigation Measure AQ-3 to reduce offsite NO_x concentration impacts, resulting in a *less than significant impact with mitigation incorporated.*

Table 1-2. Summary of Operational Emissions

Activity	Pollutant						
	PM_{10}	$PM_{2.5}$	CO	NO_x	ROG/ VOC	SO_2	CO_2e
	Pounds per Day (lb/day)						
Generator Operational Emissions	5.76	5.76	170	469	31.7	1.58	

Activity	Pollutant						
	PM_{10}	$PM_{2.5}$	CO	NO_X	ROG/ VOC	SO_2	CO_2e
	Pounds per Day (lb/day)						
Mobile and Building Operational Emissions	1.69	0.63	6.56	4.37	10.7	0.03	For this analysis and comparison to thresholds, GHG emissions are calculated on an annual basis only.
Total Project Operational Emissions	7.45	6.39	176	473	42.4	1.61	
Significance Threshold	***82***	***54***	[see note a]	***54***	***54***	***N/A***	
Significant Impact?	***No***	***No***	***No***	***Yes***	***No***	***No***	
Activity	**Tons per Year (tpy)**						**Metric Tons per Year (MT/yr)**
Generator Operational Emissions	0.20	0.20	6.79	12.0	1.95	0.06	4,506
Mobile and Building Operational Emissions	0.31	0.12	1.20	0.80	1.94	0.01	2,505
Offsets [b]	--	--	--	-12.0	--	--	--
Total Mitigated Project Operational Emissions	0.51	0.32	7.99	0.80	3.89	0.07	7,011
Significance Thresholds	***15***	***10***	[see note a]	***10***	***10***	***N/A***	***10,000***
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***	***No***

a. CO is evaluated in this AQIA based on screening criteria identified in Table 4-1 for Local CO.

b. The Applicant will provide offsets at the ratio required per BAAQMD Rule 2-2-302.

The AQIA includes air dispersion modeling analyses for emissions of CO, NO_X, PM_{10}, $PM_{2.5}$, and SO_X from the construction phase (including operation of construction equipment and 28 Phase I generators and the operation phase (including operation of all 53 generators). Air dispersion modeling results are compared to the National Ambient Air Quality Thresholds (NAAQS) and California Ambient Air Quality Standards (CAAQS). While the BAAQMD CEQA Air Quality Guidelines do not require comparison to the NAAQS and CAAQS, the air dispersion modeling results are included based on historic requests for air dispersion modeling results from the Commission for similar SPPE applications. Air dispersion modeling results, with the incorporation of Mitigation Measure AQ-2 and Mitigation Measure AQ-3, suggest that the proposed Project would result in a *less than significant impact with mitigation incorporated*.

The AQIA also evaluates the potential health risks associated with emissions of diesel particulate matter (DPM) from the construction phase and operational phase of the Project, consistent with the AAQS modeling representation. AERMOD dispersion modeling software and the Hotspots Analysis and Reporting Program (HARP) are used to estimate carcinogenic and chronic health risk at residential, worker, and sensitive receptors as a result of the DPM emissions. The analysis concludes that the Project individual and cumulative health risk is below BAAQMD's thresholds of significance for Risk and Hazards and therefore would result in a *less than significant* impact.

Table 1-3 below summarizes the checklist questions from Appendix G of the California state CEQA Guidelines for air quality and greenhouse gas impacts and the impact results for the proposed Project (California Natural Resources Agency, 2019).

Table 1-3. Environmental Impact Significance Determinations

Air Quality				
Would the project:	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a. Conflict with or obstruct implementation of the applicable air quality plan?		**X**		
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable Federal or State ambient air quality standard?		**X**		
c. Expose sensitive receptors to substantial pollutant concentrations?			**X**	
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			**X**	
Greenhouse Gas Emissions				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			**X**	
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse			**X**	

2. PROJECT DESCRIPTION

2.1 Introduction

This AQIA evaluation was prepared to evaluate potential air quality and greenhouse gas impacts associated with the proposed construction of the GBGF proposed by the Applicant. This AQIA, a revision from an AQIA submitted in late 2020, supports the Applicant's application for a SPPE pursuant to Public Resources Code Section 25541 and Section 1934 et seq. of the Commission regulations for the GBGF. This revision addresses the BACT requirements implemented by the BAAQMD on December 22, 2020. The GBGF will be located within the jurisdiction of the BAAQMD, as such, this AQIA was prepared in accordance with the standards, procedures, and methodologies established in the BAAQMD CEQA Air Quality Guidelines, dated May 2017 and the California Natural Resources Agency's CEQA Guidelines (California Natural Resources Agency, 2019).

2.2 General Facility Background

The GBGF will be exclusively used to provide emergency electricity to the GDC located at Camino Arroyo in Gilroy, California (Assessor's Parcel Number 841-69-039). See Figure 2-1 for the regional location and Figure 2-2 for the surrounding local area. The GBGF will be equipped with 53 diesel-fueled emergency generators. Fifty (50) generators will be rated at 3,634 bhp each to support the need for the GDC to provide uninterruptible power supply to the facility's servers when utility power is unavailable, herein referred to as critical backup generators. Two (2) generators will be rated at 900 bhp each to support fire suppression and other emergency operations, herein referred to as life safety generators or house power generators. One generator rated at 280 bhp will support the security building when utility power is unavailable, herein referred to as the security building generator. The proposed site occupies approximately 56 acres.

Unlike the typical electrical generating facilities reviewed by the Commission, the GBGF is designed to operate only when electricity from PG&E is unavailable to the GDC. The GBGF will not be electrically interconnected to the electrical transmission grid. Rather, it will consist of two generation yards, each separately electrically interconnected to the two data center buildings that make up the GDC. The GDC's purpose is to support mission critical computer servers, to which interruptions of power could lead to damage or corruption of data and software. To ensure no interruption of electricity service to the servers housed in the GDC building, the servers will be connected to uninterruptible power supply (UPS) systems that store energy and provide near-instantaneous protection from input power interruptions. However, to provide electricity during a prolonged power interruption, the UPS systems will require a power generation source to continue supplying steady power to the servers and other equipment. The GBGF provides that backup power generation source.

The site was previously used for agricultural production and is now awaiting industrial development. The site is near the Highway 101 corridor and immediately adjacent to industrial and commercial development. The topography is flat and the site is bounded by active agricultural lands to the east, active agricultural land and existing urban development to the south, existing urban development and Arroyo Circle to the west and existing urban development to the north.

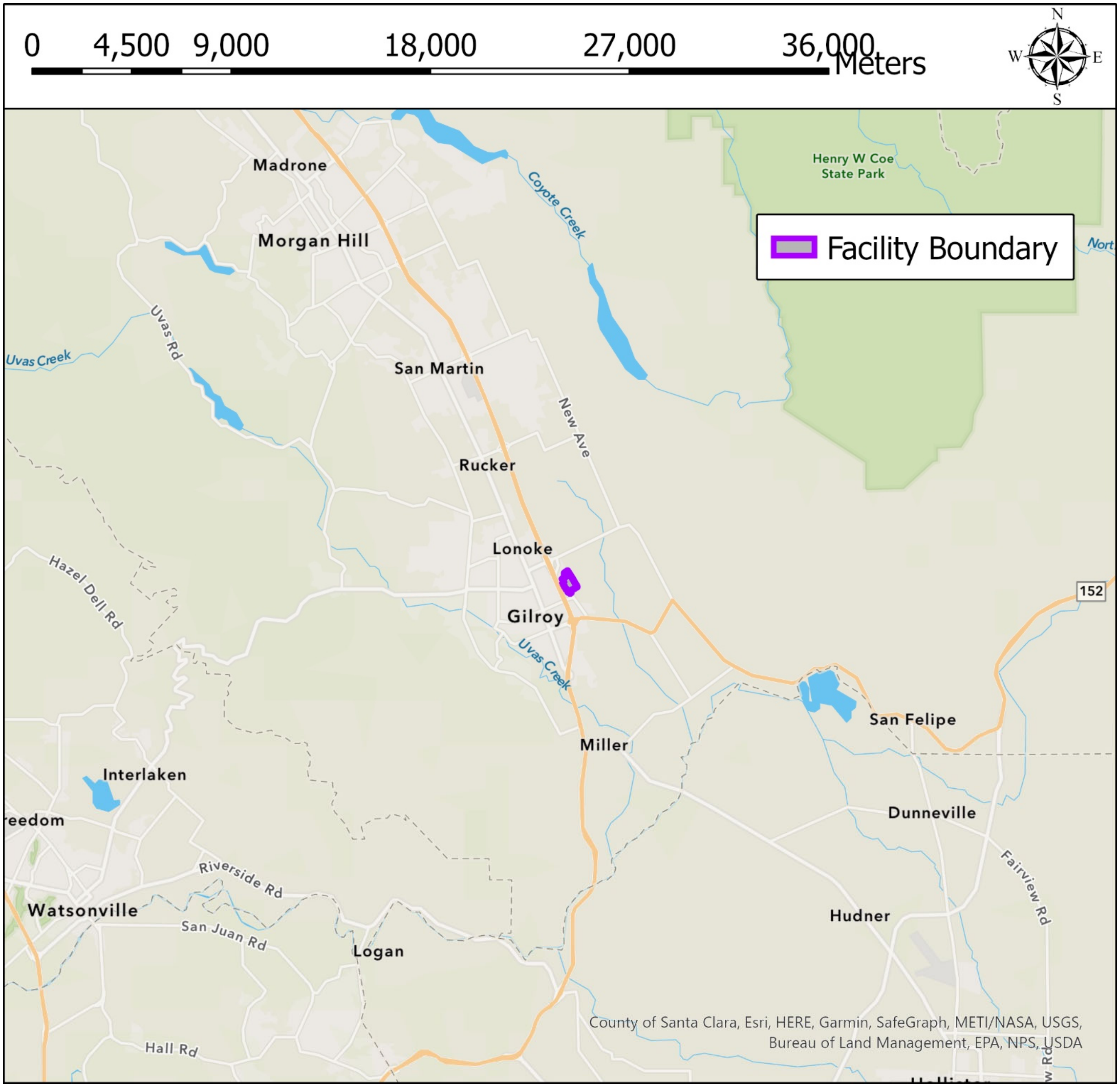


Figure 2-1: Regional Location

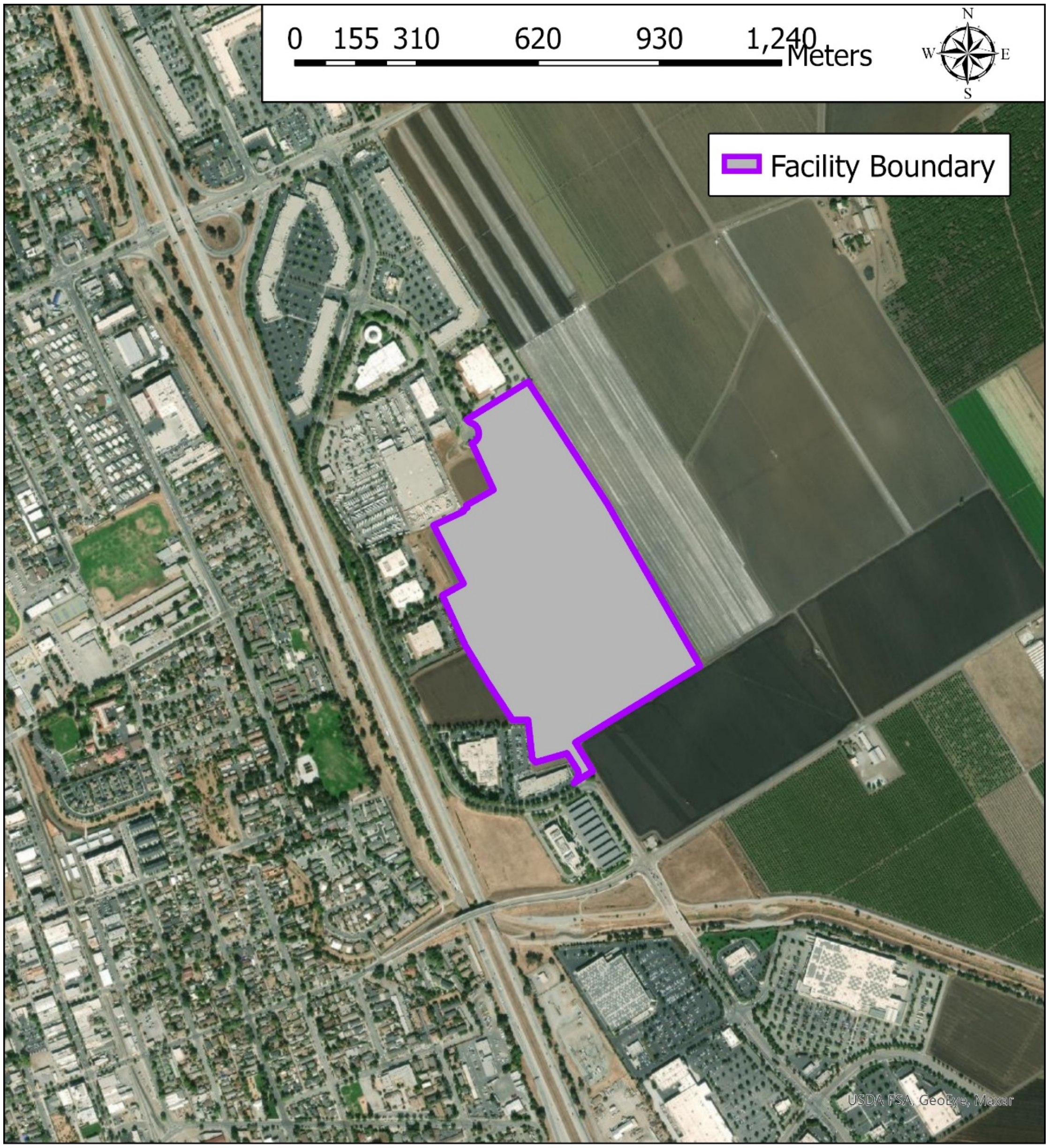


Figure 2-2: Surrounding Local Area

2.3 Project Description

The GBGF will be a backup power generating facility to ensure the power supply to the GDC computer servers remains uninterrupted. The GBGF will consist of 50 critical backup generators arranged in two generation yards, each designed to serve one of the two data center buildings that make up the GDC. Additionally, each data center building will be equipped with a life safety generator to support fire suppression and other emergency operations. One generator will serve the security building near the facility entrance. In total, the GBGF will encompass 53 emergency generators.

2.3.1 GBGF General Site Arrangement and Layout

The GBGF will be constructed to support the GDC which will be comprised of two data storage center buildings and one on campus security building totaling approximately 438,500 square feet. The GBGF will consist of 50 critical backup generators located at the site in generation yards at two separate locations within the GDC. Each generation yard will be adjacent to the building it serves. Twenty-six (26) of the critical backup generators will be dedicated to support the GDC western building, which is designated as Phase I (2 generators are redundant). Twenty-four (24) of the emergency backup generators will be dedicated to support GDC eastern building, which is designated as Phase II (2 generators are redundant). Additionally, each generator yard will also include one life safety generator. Lastly, there will be a site security building emergency generator located adjacent to the site security building. Appendix A-1 includes a detailed layout of the site plan.

All critical backup generators will be constructed at ground level. The critical backup generators are aligned in the building service yards in the generator yard that services each respective building. Each critical backup generator is provided with a diesel belly fuel tank with a storage capacity of 5,000 gallons and a urea storage tank to support the selective catalytic reduction (SCR) abatement device. Each of the two life safety generators will be located within the generation yard supporting its respective building and will have a belly fuel tank with a storage capacity of 1,000 gallons. The security building generator will also have a belly fuel tank with a storage capacity of 1,000 gallons. Each generation yard will be electrically interconnected to the building it serves through above ground cable bus to a location within the building that houses electrical distribution equipment. The life safety generators and security building generator will connect to their respective buildings via underground conduit duct bank.

2.3.2 Electrical Generation Equipment

Each of the 50 critical backup generators will be a 3,634 bhp, Caterpillar Model 3516C, Tier 2-certified emergency diesel-fired generator equipped with a Rypos HDPF/C diesel particulate filter (DPF) and a Miratech AT-IV abatement package which combines the DPF, SCR, and diesel oxidizing catalyst (DOC). The critical backup generators will be Tier 4F-compliant. Each of the two life safety generators will be a 900 bhp, Caterpillar Model C-18, Tier-2 emergency diesel-fired generator equipped with a Rypos HDPF/C DPF. The security building generator will be a 280 bhp, Caterpillar model C7.1, Tier-3 emergency diesel-fired generator.

The DPF for the critical backup generator model and life safety generator model is verified by the California Air Resources Board (CARB) for model years 1996 through 2020 under Executive Order DE-07-001-08 to reduce emissions of diesel particulate matter by 85% or more (CARB, 2020a). The Executive Order specifically notes the DPF is designed for standby engines, which typically operate at various loads. Furthermore, the Executive Order notes that duty cycles of the standby engines which are approved under the Executive Order are reviewed to ensure compatibility DPF, meaning that the DPF is compatible at all duty loads. The CARB Executive Order is provided in Appendix A-2. Specification sheets from the generator manufacturers are provided in Appendix A-2. The proposed Miratech AT-IV technical data specifications are provided in Appendix A-2. The generators will use ultra-low sulfur diesel which has a sulfur content of 0.0015% as defined under 40 CFR 80, Subpart I. The generators will each be equipped with a flapper-type rain cap which is a hinged cap that opens to release exhaust vertically into the atmosphere when the generator is operating.

2.3.3 Facility Operation

The generators will be run for short periods for testing and maintenance purposes and otherwise will not operate unless there is a disturbance or interruption of the utility supply. BAAQMD Rule 9-8 *Nitrogen Oxide Oxides and Carbon Monoxide from Stationary Internal Combustion Engines* and the CARB Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines limits each engine to no more than 50 hours of operation annually for testing and maintenance purposes (CARB, 2019a).

Table 2-1 below summarizes the routine maintenance and testing schedule for each of the critical backup generators. The volume of fuel consumption at each load is provided by the manufacturer specification sheets in Appendix A-2, under "Fuel Consumption" in the Package Performance Data section. Note that for monthly readiness testing, the generators are tested using a load bank such that the Miratech AT-IV abatement package will heat to the appropriate temperature to achieve Tier 4F emission standards.

Table 2-1: Critical Backup Generator Testing and Maintenance Events

Event	Frequency	Maximum Duration (min)	Maximum Number of Generators Tested Concurrently [a]	Maximum Number of Generators Tested per Day [a]	Typical Load Range	Fuel Consumption per Event
Readiness Testing	Monthly	80	1	18	50%	Approximately 131.2 gallons
Generator Maintenance and Testing	Annual 3 years 6 years	120	1	1	25% for 30 min. 50% for 30 min. 100% for 1 hour	Approximately 248 gallons

a. The Applicant proposes to limit operation to one generator at a time for routine maintenance and testing activities conducted pursuant to manufacturer specifications.

Any electricity generated during maintenance and testing of the generators will be directed to a load bank, which is a device that develops electrical load and then converts or dissipates the power output of the generators by applying that load. In other words, the load bank uses the energy generated by the emergency generators to test the generators, without any electricity entering the electrical transmission grid.

2.4 Project Phasing and Construction

Construction of the GBGF will take place in two phases; one for each generation yard which will be constructed to serve each of the two GDC Buildings. Phase I will include the installation of 26 critical backup generators and one life safety generator to support the GDC western building as well as one security building generator to support the security building on the north side of the property. Phase I will also include construction of the substation on the western edge of the site property. Phase II will include the installation of 24 critical backup generators and one life safety generator to support the GDC eastern building.

Construction emissions from the construction of the GDC will result from ground preparation, grading activities, building erection, parking lot construction activities, use of onsite construction equipment, and architectural coating. GBGF offsite construction emissions will result primarily from materials transport to and from the site, materials placement in the generation yard, and worker travel.

Construction of the generation yard to support the Phase I GDC Building is anticipated to begin between April 2021 and May 2021. Phase I exterior construction is expected to take approximately 11 months. Additional Phase I interior construction activities are expected to take approximately 25 months following exterior construction. Phase II exterior construction is assumed to occur immediately following completion of the first generation yard and the substation, and to take approximately 10 months. Additional Phase II interior construction activities are expected to take approximately 30 months following exterior construction. Note that construction emissions calculated in this AQIA encompass both exterior and interior construction.

As the generators are expected to be installed at the Project site beginning in 2022, an Authority to Construct (ATC) application will be submitted to the BAAQMD in 2021.

3. SETTING

Provided below is an overview of the local and regional air quality environment, the physical setting of the Project area, a discussion of GHGs and global climate change, and existing regulations related to air quality and GHGs.

3.1 Introduction

The Project site is located in the Santa Clara County within the incorporated areas of the City of Gilroy and within the boundaries of the San Francisco Bay Area Air Basin (Bay Area Air Basin). The Bay Area Air Basin encompasses all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties; the southwestern portion of Solano County; and the southern portion of Sonoma County. The BAAQMD acts as the regulatory agency for air pollution control in the Bay Area Air Basin and is the local agency empowered to regulate air pollutant emissions for the proposed Project area.

The BAAQMD develops and adopts Air Quality Management Plans (AQMPs), which serve as a blueprint to bring the Bay Area Air Basin into compliance with federal and state clean air standards and adopts rules to reduce emissions from various sources, including specific types of equipment, activities, processes, and products.

3.2 Environmental Setting

3.2.1 Climate and Meteorology

Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features that influence pollutant movement and dispersion. Atmospheric conditions such as wind speed, wind direction, atmospheric stability, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersion of air pollutants and consequently affect air quality (Abbott, 2003).

The climate of the San Francisco Bay Area is determined largely by a high-pressure system that is almost always present over the eastern Pacific Ocean off the West Coast of North America. High-pressure systems are characterized by an upper layer of dry air that warms as it descends, restricting the mobility of cooler marine-influenced air near the ground surface and resulting in the formation of subsidence inversions. In winter, the Pacific high-pressure system shifts southward, allowing storms to pass through the region. During summer and fall, emissions generated within the San Francisco Bay Area can combine with abundant sunshine under the restraining influences of topography and subsidence inversions to create conditions that are conducive to the formation of photochemical pollutants such as ozone (O_3) (Abbott, 2003).

More specifically, the Project area is located in the Santa Clara Valley climatological subregion. The BAAQMD CEQA Air Quality Guidelines characterizes the Santa Clara Valley as:

"…bounded by the Bay to the north and by mountains to the east, south and west. Temperatures are warm on summer days and cool on summer nights, and winter temperatures are fairly mild. At the northern end of the valley, mean maximum temperatures are in the low-80's during the summer and the high-50's during the winter, and mean minimum temperatures range from the high-50's in the summer to the low-40's in the winter. Further inland, where the moderating effect of the Bay is not as strong, temperature extremes are greater…

Winds in the valley are greatly influenced by the terrain, resulting in a prevailing flow that roughly parallels the valley's northwest-southeast axis. A north-northwesterly sea breeze flows through the valley during the afternoon and early evening, and a light south-southeasterly drainage flow occurs during the late evening and early morning. In the summer the southern end of the valley sometimes becomes a "convergence zone," when air flowing from the Monterey Bay gets channeled northward into the southern end of the valley and meets with the prevailing north-northwesterly winds.

Wind speeds are greatest in the spring and summer and weakest in the fall and winter. Nighttime and early morning hours frequently have calm winds in all seasons, while summer afternoons and evenings are quite breezy. Strong winds are rare, associated mostly with the occasional winter storm.

The air pollution potential of the Santa Clara Valley is high. High summer temperatures, stable air and mountains surrounding the valley combine to promote O_3 formation. In addition to the many local sources of pollution, O_3 precursors from San Francisco, San Mateo and Alameda Counties are carried by prevailing winds to the Santa Clara Valley. The valley tends to channel pollutants to the southeast. In addition, on summer days with low level inversions, O_3 can be recirculated by southerly drainage flows in the late evening and early morning and by the prevailing northwesterlies in the afternoon. A similar recirculation pattern occurs in the winter, affecting levels of CO and PM. This movement of the air up and down the valley increases the impact of the pollutants significantly.

Pollution sources are plentiful and complex in this subregion. The Santa Clara Valley has a high concentration of industry at the northern end, in the Silicon Valley. Some of these industries are sources of air toxics as well as criteria air pollutants. In addition, Santa Clara Valley's large population and many work-site destinations generate the highest mobile source emissions of any subregion in the [Bay Area Air Basin]."

3.2.2 Regional Air Quality

NAAQS are established by the U.S. EPA for various pollutants: O_3, PM_{10}, $PM_{2.5}$, CO, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead (Pb). These standards set maximum concentrations over different averaging periods—primarily to protect public human health and secondarily to protect public welfare (protect against decreased visibility as well as damage to animals, crops, vegetation, and buildings).

CAAQS are established by the State of California and are in some cases more stringent than the NAAQS and include other pollutants in addition to the criteria pollutants. Pollutants covered by the CAAQS include O_3, PM_{10}, $PM_{2.5}$, CO, NO_2, SO_2, Pb, sulfates, hydrogen sulfide (H_2S), and vinyl chloride.

Both state and national air quality standards consist of two parts: an allowable concentration of a pollutant in ambient air, and an averaging time over which the concentration is measured. The allowable concentrations are based on the results of studies of the effects of the pollutants on human health, crops and vegetation, and, in some cases, damage to paint and other materials. The averaging times are based on whether the damage caused by the pollutant is more likely to occur during exposure to a high concentration for a short time (e.g., one hour), or to a relatively lower average concentration over a longer period (e.g., 8 hours, 24 hours, or one year). For some pollutants there is more than one air quality standard, reflecting both its short-term and long-term effects. Table 3-1 below presents the CAAQS and NAAQS for selected common pollutants, including pollutants applicable to the Project.

The degree to which a region's air quality is healthy or unhealthy is determined by comparing pollutant concentrations in ambient air samples to the state and national standards presented in Table 3-1. California standards for ambient background O_3, CO (except 8-hour Lake Tahoe), SO_2, NO_2, PM_{10}, $PM_{2.5}$, and visibility reducing particles are values that are not to be exceeded (though there can be averaging involved for certain annual limits). Attainment with the national short-term standards is generally achieved if the standards are not exceeded more than once per year, though each pollutant has a specified averaging methodology. The O_3 standard is attained when the fourth-highest eight-hour concentration in a year, averaged over three years, is less than the standard. For PM_{10}, the 24-hour standard is attained when the number of days per calendar year with a 24-hour average concentration above the standard is equal to or less than one averaged over three years. Nonattainment areas are subject to additional restrictions and standards, as required by the U.S. EPA. The air quality data collected at local monitoring stations are also used to monitor progress in attaining air quality standards.

Under the provisions of the Federal Clean Air Act, the Bay Area Air Basin is classified as either in attainment, nonattainment, or unclassified/attainment with respect to the NAAQS. Table 3-2 provides the NAAQS and CAAQS classification statuses for the Bay Area Air Basin based on the local criteria pollutant concentrations and federal and state designations.

The human health and environmental effects of the criteria pollutants for which NAAQS are set are summarized in Table 3-3 below. The sections following Table 3-3 provide a more detailed discussion of the typical sources of such criteria pollutants.

Table 3-1: Summary of Ambient Air Quality Standards

Pollutant	Averaging Time [a]	CAAQS	NAAQS	Major Pollutant Sources
O_3	8-hour	0.070 ppm	0.070 ppm	▶ Formed when ROG and NO_x react in the presence of sunlight. ▶ Major sources include on-road motor vehicles, solvent evaporation, and commercial/ industrial mobile equipment.
	1-hour	0.09 ppm	--	
CO	8-hour	9.0 ppm	9 ppm	▶ Internal combustion engines, primarily gasoline-powered motor vehicles.
	1-hour	20 ppm	35 ppm	
NO_2	Annual	0.030 ppm	0.053 ppm	▶ Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.
	1-hour	0.18 ppm	0.100 ppm	
SO_2	Annual [b]	---	0.030 ppm	▶ Fuel combustion, chemical plants, sulfur recovery plants and metal processing.
	24-hour [b]	0.04 ppm	0.14 ppm	
	3-hour	--	0.5 ppm	
	1-hour	0.25 ppm	0.075 ppm	
Respirable Particulate Matter (PM_{10})	Annual	20 µg/m^3	--	▶ Dust- and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays). ▶ Formed from photochemical reactions of other pollutants, including NO_x, SO_x, and organics.
	24-hour	50 µg/m^3	150 µg/m^3	
Fine Particulate Matter ($PM_{2.5}$)	Annual	12 µg/m^3	12 µg/m^3	▶ Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning. ▶ Formed from photochemical reactions of other pollutants, including NO_x, SO_x, and organics.
	24-hour	--	35 µg/m^3	
Pb	Calendar Quarter [c]	--	1.5 µg/m^3	▶ Present sources: Pb smelters, battery manufacturing, and recycling facilities. ▶ Past source: combustion of leaded gasoline.
	30-days	1.5 µg/m^3	--	
	3-months	---	0.15 µg/m^3	
Hydrogen Sulfide (H_2S)	1-hour	0.03 ppm	--	▶ Geothermal power plants, petroleum production and refining.
Vinyl Chloride	24-hour	0.01 ppm	--	▶ Production of PVC plastic.
Visibility Reducing Particles	8-hour	Extinction of 0.23/km; visibility of ≥ 10 miles	--	▶ See $PM_{2.5}$.
Sulfates	24-hour	25 µg/m^3	--	▶ Formed from SO_2 emitted from combustion of petroleum-derived fuels.

Sources: BAAQMD, 2017b; CARB, 2009, 2016, and 2019c, d, and e.

ppm = parts per million, µg/m^3 = micrograms per cubic meter

a. Different statistical methodologies may apply between CAAQS and NAAQS thresholds for the same pollutants (e.g., arithmetic mean of maximum annual impacts from over five years versus annual mean over five years expressed as the maximum result modeled year in a five year period).

b. The annual and 24-hour SO_2 NAAQS only remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO_2 standards or is not meeting the requirements of a SIP call under the previous SO_2 standards (40 CFR 50.4(e)).

c. The calendar quarter lead NAAQS only applies in areas for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved.

Table 3-2: Summary of BAAQMD Attainment Status

Pollutant	California AAQS [a]	NAAQS [b]
O_3 — 1-hour	Nonattainment	N/A
O_3 — 8-hour	Nonattainment	Nonattainment
CO — 1-hour	Attainment	Attainment
CO — 8-hour	Attainment	Attainment
NO_2 — 1-hour	Attainment	Unclassified
NO_2 — Annual	Attainment	Attainment
SO_2 — 1-hour	Attainment	Unclassified
SO_2 — 3-hour	N/A	Attainment
SO_2 — 24-hour	Attainment	Attainment
SO_2 — Annual	N/A	Attainment
PM_{10} — 24-hour	Nonattainment	Unclassified
PM_{10} — Annual	Nonattainment	N/A
$PM_{2.5}$ — 24-hour	N/A	Nonattainment [c]
$PM_{2.5}$ — Annual	Nonattainment	Unclassified/Attainment
Pb	Attainment [d]	Attainment
H_2S	Unclassified	N/A
Vinyl Chloride	No information available [d]	N/A
Visibility Reducing Particles	Unclassified	N/A
Sulfates	Attainment	N/A

Sources: BAAQMD, 2017c and CARB, 2020c
Notes: AAQS = ambient air quality standards.
N/A = Not Applicable

a. See CCR Title 17 Sections 60200-60210.

b. See 40 CFR Part 81.

c. U.S. EPA tightened the national 24-hour $PM_{2.5}$ standard from 65 to 35 μg/m^3 in 2006. On January 9, 2013, U.S. EPA issued a final rule to determine that the Bay Area Air Basin was in attainment with respect to the 24-hour $PM_{2.5}$ national standard. This U.S. EPA rule suspends key state implementation plan (SIP) requirements as long as monitoring data continue to show that the Bay Area Air Basin attains the standard. Despite this U.S. EPA action, the Bay Area Air Basin will continue to be designated as nonattainment for the national 24-hour $PM_{2.5}$ standard until the BAAQMD submits a redesignation request and a maintenance plan to U.S. EPA, and U.S. EPA approves the proposed redesignation.

d. CARB has identified Pb and vinyl chloride as "toxic air contaminants" with no threshold level of exposure below which no adverse health effects have been determined.

Table 3-3: Summary of Health and Environmental Effects of Key Criteria Pollutants

Pollutant	Health Effects	Environmental Effects	Examples of Sources
O_3	► Respiratory symptoms ► Worsening of lung disease leading to premature death ► Damage to lung tissue	► Crop, forest, and ecosystem damage ► Damage to a variety of materials, including rubber, plastics, fabrics, paint and metals	► Formed by chemical reactions of air pollutants in the presence of sunlight; common sources are motor vehicles, industries, and consumer products
PM_{10}	► Premature death & hospitalization, primarily for worsening of respiratory disease	► Reduced visibility and material soiling	► Cars and trucks (especially diesel), fireplaces, wood stoves, windblown dust from roadways, agriculture, and construction activities
$PM_{2.5}$	► Premature death ► Hospitalization for worsening of cardiovascular disease ► Hospitalization for respiratory disease ► Asthma-related emergency room visits ► Increased symptoms, increased inhaler usage	► Reduced visibility and material soiling	► Cars and trucks (especially diesel), fireplaces, wood stoves, windblown dust from roadways, agriculture, and construction activities
CO	► Chest pain in patients with heart disease ► Headache ► Light-headedness ► Reduced mental alertness	► None	► Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves
NO_2	► Lung irritation ► Enhanced allergic responses	► Reacts to form acid precipitation and deposition	► Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves
SO_2	► Worsening of asthma: increased symptoms, increased medication usage, and emergency room visits	► Reacts to form acid precipitation and deposition	► Coal and oil burning power plants, refineries, and diesel engines
Pb	► Impaired mental functioning in children ► Learning disabilities in children ► Brain and kidney damage	► Soil and water pollutant	► Metal smelters, resource recovery, leaded gasoline, Pb paint

Source: CARB, 2009.

3.2.2.1 Ozone (O_3)

O_3, or smog, is a highly reactive and unstable gas not emitted directly into the environment. O_3 is formed in the atmosphere by complex chemical reactions between ROG and NO_x in the presence of sunlight. O_3 formation is greatest on warm, windless, sunny days. The main sources of NO_x and ROG — often referred to as O_3 precursors—are combustion processes (including motor vehicle engines); the evaporation of solvents, paints, and fuels; and biogenic sources. O_3 is the main contributor to visible smog in the Bay Area Air Basin and is also a strong oxidant (BAAQMD, 2017b). O_3 levels typically build up during the day and peak in the afternoon hours.

3.2.2.2 Respirable and Fine Particulate Matter (PM_{10} and $PM_{2.5}$)

Particulate matter refers to a wide range of tiny solid and/or liquid particles in the atmosphere, including smoke, dust, aerosols, and metallic oxides. Respirable PM with an aerodynamic diameter of 10 micrometers or less is referred to as PM_{10}. $PM_{2.5}$ is a subgroup of fine particulates that have an aerodynamic diameter of 2.5 micrometers or less. Some particulate matter, such as pollen, is naturally occurring. Atmospheric reactions between primary gaseous emissions such as SO_2 and NO_X from power plants can also form particulate sulfates as $PM_{2.5}$. Wood burning in fireplaces and stoves are also large sources of fine particulates, especially during the winter season (BAAQMD, 2017b).

3.2.2.3 Carbon Monoxide (CO)

CO is an odorless, colorless gas. It is formed by the incomplete combustion of fuels. Because CO is emitted directly from internal combustion engines, mobile sources are the primary source of CO in the BAAQMD. Emissions are highest during cold starts, hard acceleration, stop-and-go driving, and when a vehicle is moving at low speeds. CO can also be formed by photochemical reactions in the atmosphere from methane (CH_4) and non-methane hydrocarbons (NMHC) and organic molecules in water and soil (BAAQMD, 2017b).

3.2.2.4 Nitrogen Oxides (NO_X)

NO_2 is a pungent-smelling gas that is brownish-red in color. Of the gases referred to as NO_X, NO_2 and nitric oxide (NO) are the two most prevalent gases. Nitrogen oxides are created during combustion processes and are also created in the atmosphere when NO photochemically reacts with other pollutants to create NO_2. Automobiles and industrial operations are the main sources of NO_2. Ambient concentrations of NO_2 are related to traffic density, and as such, commuters in heavy traffic may be exposed to higher concentrations of NO_2 than the concentrations indicated by regional monitors (CARB, 2019b). NO_2 may be visible as a coloring component of a brown cloud on high pollution days, especially in conjunction with high O_3 levels (BAAQMD, 2017b).

3.2.2.5 Sulfur Dioxide (SO_2)

SO_2 is a colorless acid gas with a pungent odor. It is produced by the combustion of sulfur-containing fuels, such as oil, coal, and diesel. It is also formed from chemical processes occurring at chemical plants and refineries. When SO_2 oxidizes in the atmosphere, it forms sulfates (SO_4). Collectively, these pollutants are referred to as SO_x (CARB, 2019c and CARB, 2019d).

3.2.2.6 Lead (Pb)

Pb is a metal found naturally in the environment as well as in manufactured products. The major sources of Pb emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of Pb emissions. The highest levels of Pb in the air are generally found near Pb smelters. Other stationary sources include waste incinerators, utilities, and Pb-acid battery manufacturers. Several decades ago, mobile sources were the main contributor to Pb concentrations in the ambient air due to leaded gasoline. In the early 1970s, the U.S. EPA set national regulations to gradually reduce the Pb content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The U.S. EPA banned the use of leaded gasoline in highway vehicles in December 1995. As a result of the U.S. EPA's regulatory efforts, emissions of Pb from the transportation sector and levels of Pb in the air have decreased substantially (BAAQMD, 2017b).

3.2.3 Local Air Quality

BAAQMD operates a regional monitoring network that measures the ambient concentrations of the six criteria air pollutants within the Bay Area Air Basin. Existing levels of air pollutants in the Project area can generally be inferred from ambient air quality measurements conducted by the BAAQMD at nearby monitoring stations. The nearest permanent station to the Project site is the Gilroy monitoring station approximately 1 mile to the southwest. The Gilroy monitoring station only measures O_3 and $PM_{2.5}$. The San Martin monitoring station is approximately 4.8 miles to the northwest of the Project site and measures ozone. Because the San Martin monitoring station is closer to a highway, similar to the Project site, ozone data from the San Martin monitoring station is utilized. The remaining pollutant measurements can be found from the next closest monitoring stations within the Bay Area Air Basin, which are the Knox Avenue monitoring station and the Jackson Street monitoring station, both in San Jose approximately 30 miles to the northwest. The Knox Avenue monitoring station only measures CO and NO_2, thus the remaining pollutant measurements are from the Jackson Street monitoring station. Table 3-4 summarizes the applicable monitoring station information while their locations are depicted in Figure 3-1.

Table 3-4: Representative Air Quality Monitoring Stations for the Proposed Project Area

Pollutants	Monitoring Site	Monitoring Site Address	Approximate Distance from Project Area
$PM_{2.5}$	Gilroy	9th and Princevalle St, Gilroy, CA 95020	1.25 mi SW
O_3	San Martin	13030 Murphy Avenue, San Martin, CA 95046	4.8 mi NNW
CO, NO_2	San Jose – Knox	1007 Knox Ave. San Jose, CA 95122	27 mi NW
SO_2, PM_{10}	San Jose – Jackson	158 E. Jackson St, San Jose, CA 95112	29 mi NW

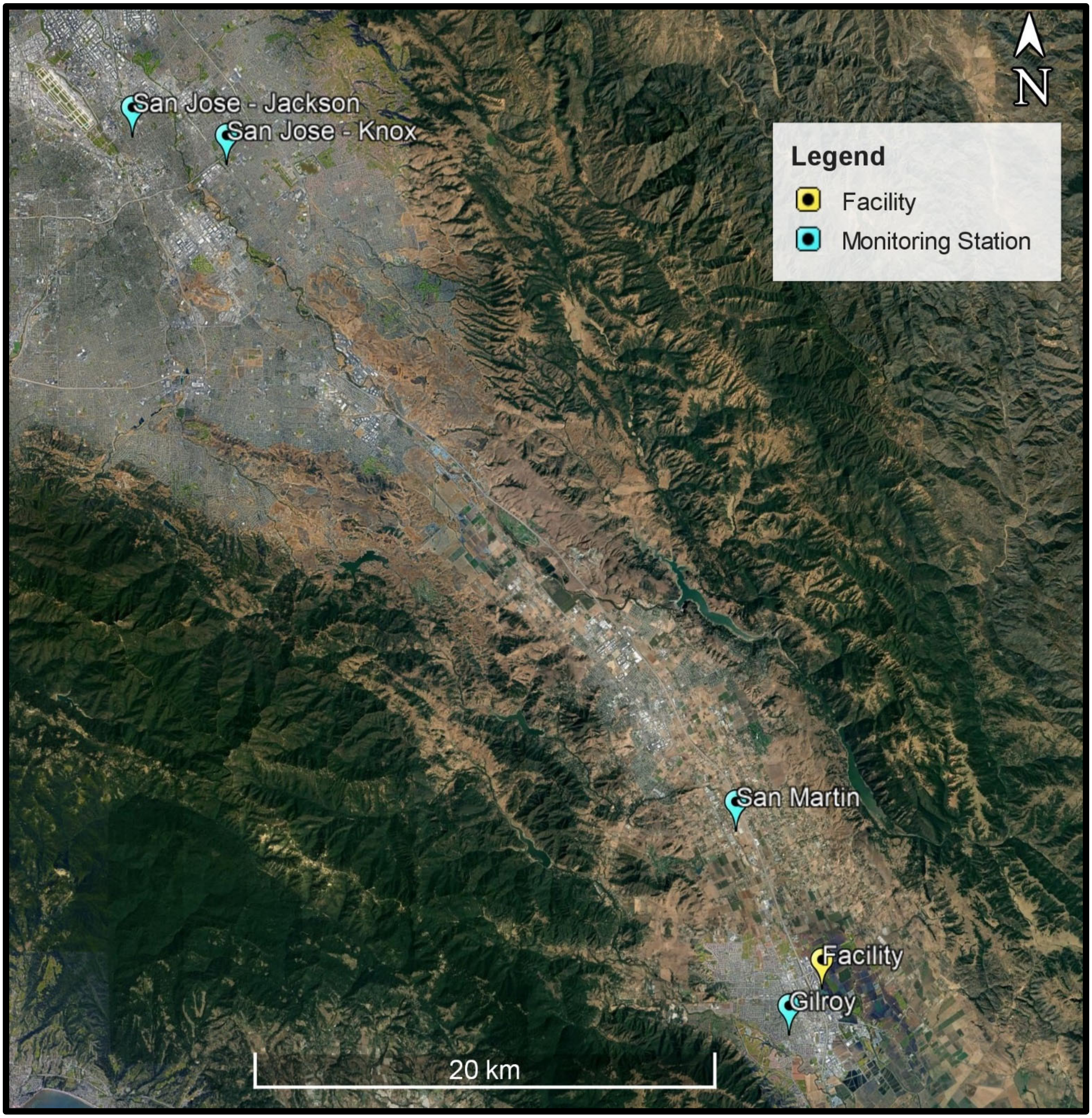


Figure 3-1: Project Site and Monitoring Sites

Table 3-5 presents the most recent three years of ambient air quality monitoring data (2017-2019)[1] available for the monitoring stations. The ambient air quality data in Table 3-5 show that NO_2, SO_2, CO, and $PM_{2.5}$ levels are below the applicable state and federal standards. At the closest BAAQMD monitoring station to the

[1] 2020 Data was not available.

proposed Project location providing PM_{10} measurements, the state AAQS are exceeded for PM_{10}. Attainment status designations are provided in Table 3-2.

Table 3-5: Existing Air Quality Monitoring Data in Proposed Project Area [a,b,c]

Pollutant	Units	Averaging Time	Basis of Yearly/Design Concentrations	2017	2018	2019	Design	Station
Ozone (O_3)	ppb	1-Hr	CAAQS - 1st Highs/3-yr Max	96	92	90	N/A	San Martin
		8-Hr	CAAQS - 1st Highs/3-yr Max	86	80	78	N/A	San Martin
			NAAQS - 4th Highs/3-yr Avg	68	65	64	N/A	San Martin
Nitrogen dioxide (NO_2)	ppb	1-Hr	CAAQS - 1st Highs/3-yr Max	76.9	88	65.1	88	Knox
			NAAQS - 98th %s/3-yr Avg	52.1	55.4	50.5	53	Knox
		Annual	CAAQS - AAM/3-yr Max	17.0	16.7	14.5	17	Knox
			NAAQS - AAM/3-yr Avg	17.0	16.7	14.5	16.1	Knox
Carbon monoxide (CO)	ppm	1-Hr	CAAQS - 1st Highs/3-yr Max	2.6	2.8	2.0	2.8	Knox
			NAAQS - 2nd Highs/3-yr Max	2.5	2.7	2.0	2.7	Knox
		8-Hr	CAAQS - 1st Highs/3-yr Max	1.8	2.3	1.6	2.3	Knox
			NAAQS - 2nd Highs/3-yr Max	1.8	2.3	1.6	2.3	Knox
Sulfur dioxide (SO_2)	ppb	1-Hr	CAAQS - 1st Highs/3-yr Max	3.6	6.9	14.5	14.5	Jackson
			NAAQS - 99th %s/3-yr Avg	3.1	3.2	2.2	2.8	Jackson
	ppm	3-Hr	NAAQS - 2nd Highs/1-yr	0.0023	0.0028	0.0019	0.0028	Jackson
	ppb	24-Hr	CAAQS - 1st Highs/3-yr Max	1.10	1.1	1.5	1.5	Jackson
	ppb	Annual	NAAQS - AAM/3-yr Avg	0.20	0.21	0.14	0.18	Jackson
Respirable Particulate Matter (PM_{10}) [d]	µg/m³	24-Hr	CAAQS - 1st Highs/3-yr Max	69	121	77	121	Jackson
		24-Hr	NAAQS - 2nd Highs/3-yr 4th High [e]	67	118	56	80	Jackson
		Annual	CAAQS - AAM/3-yr Max	21.6	23.1	19.2	23	Jackson
Fine Particulate Matter ($PM_{2.5}$) [d]	µg/m³	24-Hr	NAAQS - 98th %s/3-yr Avg	21.2	46.5	13.4	27	Gilroy
		Annual	CAAQS - AAM/3-yr Max	5.52	7.8	5.82	7.8	Gilroy
			NAAQS - AAM/3-yr Avg	5.52	7.8	5.82	6.4	Gilroy

Notes: AAM = annual arithmetic mean.

a. Monitoring values are chosen sequentially based on proximity to the facility and availability of data. The Gilroy monitoring station located at 9th and Princevalle is closest in proximity, followed by the San Martin monitoring station located at 13030 Murphy Avenue, San Jose - Knox monitoring station located at 1007 Knox Ave, then San Jose - Jackson located at 158 East Jackson St.
SO_2 24 hr and PM_{10} Annual CAAQS Data sources: Bay Area Air Pollution Summaries (BAAQMD, 2018, 2019, and 2020a).

c. NAAQS and CAAQS with overlapping averaging time data sources: U.S. EPA AirData Air Quality Monitors Data (2017, 2018, 2019) (U.S. EPA, 2020a).
Annual SO_2 NAAQS Data Source: U.S. EPA Annual Summary Data for Concentration by Monitor (2017, 2018, 2019) (U.S. EPA, 2020b).

d. Note that significant wildfires occurred in California in 2017 and 2018, resulting in higher concentrations of particulate matter than in years without significant wildfires.

e. Design value is an average of PM_{10} 24-hr second highs from 2017, 2018, and 2019 per Section 2.1 of Appendix K to 40 CFR Section 50.6.

3.2.4 Sensitive Land Uses Near the Proposed Project Area

For the purposes of this AQIA, sensitive receptors are considered locations with people who are more sensitive than the general public to the effects of air pollutants. The reasons for increased sensitivity include preexisting health problems, proximity to emissions sources, or duration of exposure to air pollutants. Schools, hospitals, and convalescent homes are considered to be sensitive receptors because children, the infirm, and elderly people are more susceptible to respiratory distress and other air quality-related health problems than the general public. Residential areas are also considered sensitive to poor air quality because residents are often home for extended periods of time which results in greater exposure to ambient air quality; however, residential receptors are considered a separate receptor type from sensitive receptors. Table 3-6 lists the nearest sensitive receptors within two miles of the Project's property boundary.[2] The list includes sensitive receptors potentially impacted by acute health risks (e.g., a medical facility where a sick person may visit for a single check-up per year) as well as sensitive receptors potentially impacted by chronic health risks (e.g., a medical facility where a patient may need to stay for long-term in-patient care or a school where a student would attend every weekday for many years). Table 3-7 lists the nearest residential areas to the Project area.

[2] The sensitive receptors were identified using Google Earth and Google Maps.

Table 3-6: Sensitive Receptors near the Project Area

ID	Name of Sensitive Receptor	Address of Sensitive Receptor	Type	Distance from Property Boundary to Sensitive Receptor [miles] [a]
1	Kaiser Permanente Gilroy Medical Offices	7520 Arroyo Cir, Gilroy, CA 95020	Healthcare Facility	0.06
2	Satellite Healthcare Gilroy	8095 Camino Arroyo Suite 100, Gilroy, CA 95020	Healthcare Facility	0.08
3	Valley Health Center Gilroy	7475 Camino Arroyo, Gilroy, CA 95020	Healthcare Facility	0.08
4	Gilroy Healthcare and Rehabilitation Center	8170 Murray Ave, Gilroy, CA 95020	Nursing Home	0.33
5	Gilroy Neighborhood Health Clinic	7861 Murray Ave, Gilroy, CA 95020	Healthcare Facility	0.34
6	South Valley Middle School	385 Ioof Ave, Gilroy, CA 95020	School	0.36
7	Wagon Wheel Mobile Village Senior Community	8282 Murray Avenue, Gilroy, CA 95020	Senior Living	0.44
8	Eliot Elementary School	475 Old Gilroy St, Gilroy, CA 95020	School	0.45
9	Rebekah Children's Services	290 Ioof Ave, Gilroy, CA 95020	Healthcare Facility	0.46
10	Miranda's Residential Care Home	7566 Alexander St, Gilroy, CA 95020	Nursing Home	0.5
11	Gilroy Prep School	277 Ioof Ave, Gilroy, CA 95020	School	0.52
12	Gardner South County Health Center	7526 Monterey Rd, Gilroy, CA 95020	Healthcare Facility	0.65
13	Creative Play Learning Center	95 4th St, Gilroy, CA 95020	Daycare	0.69
14	Neil Reza MD	7872 Eigleberry St, Gilroy, CA 95020	Healthcare Facility	0.69
15	Concentra Urgent Care	190 Leavesley Rd Suite 102, Gilroy, CA 95020	Healthcare Facility	0.71
16	Gavilan Foot Care Center	80 5th St, Gilroy, CA 95020	Healthcare Facility	0.73
17	St. Mary's School	7900 Church Street, Gilroy, CA 95020	School	0.75
18	Hunny Bunny Daycare	7361 Eigleberry St, Gilroy, CA 95020	Daycare	0.79
19	Chamberlain's Mental Health	8352 Church St # C, Gilroy, CA 95020	Healthcare Facility	0.84
20	Forget Me Not Child Care	7661 Rosanna St, Gilroy, CA 95020	Daycare	0.87
21	South County Pain & Rehabilitation	7091 Monterey St Ste A, Gilroy, CA 95020	Healthcare Facility	0.89
22	South Valley Imaging Center	8359 Church St, Gilroy, CA 95020	Healthcare Facility	0.93

ID	Name of Sensitive Receptor	Address of Sensitive Receptor	Type	Distance from Property Boundary to Sensitive Receptor [miles] [a]
23	Footsteps Preschool	8335 Church St, Gilroy, CA 95020	Daycare	0.93
24	Brownell Academy Middle School	7800 Carmel St, Gilroy, CA 95020	School	0.99
25	Santa Clara County Family Resources	8833 Monterey Rd STE G, Gilroy, CA 95020	Healthcare Facility	1.07
26	Wheeler Manor	651 W 6th St # 3, Gilroy, CA 95020	Nursing Home	1.14
27	Glen View Elementary School	600 W 8th St, Gilroy, CA 95020	School	1.15
28	Ms.Sally's Home Day Care and Preschool	7941 Princevalle St, Gilroy, CA 95020	Daycare	1.16
29	Community Solutions	9015 Murray Avenue, #100, Gilroy, CA 95020	Healthcare Facility	1.17
30	Gilroy Medical Pharmacy	700 W 6th St G, Gilroy, CA 95020	Healthcare Facility	1.2
31	Tiny Tots Preschool & Daycare	8985 Monterey Rd, Gilroy, CA 95020	Daycare	1.24
32	Mimi's Place Home Day Care	7390 Orchard Dr, Gilroy, CA 95020	Daycare	1.27
33	Evelia Daycare	7380 Orchard Dr, Gilroy, CA 95020	Daycare	1.27
34	Allergy & Asthma Associates of Northern California	9360 No Name Uno #250, Gilroy, CA 95020	Healthcare Facility	1.28
35	A Woman For Women Medical Group Inc.	9360 No Name Uno #260, Gilroy, CA 95020	Healthcare Facility	
36	Ellis Eye & Laser Medical Center	9360 No Name Uno Suite 210, Gilroy, CA 95020	Healthcare Facility	
37	Mittal Family Healthcare, Inc.	9360 No Name Uno #240, Gilroy, CA 95020	Healthcare Facility	
38	California Vascular & Vein Center	9360 No Name Uno Rd, #110, Gilroy, CA 95020	Healthcare Facility	
39	Clever Kidz Home Daycare	295 London Dr, Gilroy, CA 95020	Daycare	1.29
40	ABC daycare	8401 Wayland Ln, Gilroy, CA 95020	Daycare	1.29
41	Gamboa Lawrence S MD	10 Canterbury Pl, Gilroy, CA 95020	Healthcare Facility	1.31
42	Gilroy Elderly Care Home	415 London Dr, Gilroy, CA 95020	Nursing Home	1.33
43	Jemel's Home Care Services	298 Churchill Pl, Gilroy, CA 95020	Nursing Home	1.35
44	Miriam House	318 Churchill Pl, Gilroy, CA 95020	Nursing Home	1.36
45	St. Louise Regional Hospital	9400 No Name Uno, Gilroy, CA 95020	Hospital	1.38
46	Gilroy Family Medical Group	9460 No Name Uno #115, Gilroy, CA 95020	Healthcare Facility	1.44
47	Foothill Community Health Center	9460 No Name Uno, #110 & #215, Gilroy CA 95020	Healthcare Facility	

ID	Name of Sensitive Receptor	Address of Sensitive Receptor	Type	Distance from Property Boundary to Sensitive Receptor [miles] [a]
48	We Care Health Center	7880 Wren Ave # C133, Gilroy, CA 95020	Healthcare Facility	1.44
49	Community Internal Medicine	7880 Wren Ave # D143, Gilroy, CA 95020	Healthcare Facility	
50	One World Preschool	8387 Wren Ave, Gilroy, CA 95020	Daycare	1.46
51	El Roble Elementary School	930 3rd St, Gilroy, CA 95020	School	1.48
52	Little Star Daycare	759 Gary St, Gilroy, CA 95020	Daycare	1.48
53	CareMore Medical Group	7888 Wren Ave C-131, Gilroy, CA 95020	Healthcare Facility	1.48
54	CJ's Make A Wish Day Care	6440 Hastings Pl, Gilroy, CA 95020	Daycare	1.49
55	Dominique M. Ly, FNP	7933 Wren Ave, Suite D, Gilroy, CA 95020	Healthcare Facility	1.5
56	Little Angels daycare	6121 Hyde Park Dr, Gilroy, CA 95020	Daycare	1.52
57	Gilroy High School	750 W 10th St, Gilroy, CA 95020	School	1.52
58	Castle Care Facility	9061 Wren Ave, Gilroy, CA 95020	Nursing Home	1.54
59	Playland Child Development Center	7272 Carr Pl, Gilroy, CA 95020	Daycare	1.55
60	Terri's Learning Tree Preschool	890 Dearborn Pl, Gilroy, CA 95020	Daycare	1.56
61	Little Blue Star Daycare	826 Mantelli Dr, Gilroy, CA 95020	Daycare	1.71
62	Kays Kids Daycare & Preschool	8345 Kern Ave, Gilroy, CA 95020	Daycare	1.72
63	Rod Kelley Elementary School	8755 Kern Ave, Gilroy, CA 95020	School	1.76
64	Sandra's daycare	1029 Welburn Ave, Gilroy, CA 95020	Daycare	1.80
65	Mt Madonna High School	8750 Hirasaki Ct, Gilroy, CA 95020	School	1.89
66	Anaya's Daycare	955 Brook Way, Gilroy, CA 95020	Daycare	1.91
67	Go Kids Inc	902 Arizona Cir, Gilroy, CA 95020	Daycare	1.94
68	Las Animas Elementary	6550 Cimino St, Gilroy, CA 95020	School	1.97

Source: Google Earth, 2020

a. BAAQMD considers the zone of influence the area extending 1,000 feet (0.19 miles) from the site boundary. Only sensitive receptor IDs 1, 2, and 3 fall within this zone. Sensitive receptor ID 1 is an office building unlikely to be visited by patients. It was conservatively included on this list as it is associated with a medical facility; however, for the purposes of the health risk assessment, it is considered worker receptor. Sensitive receptor ID 2 and 3 do not have in-patient care and patients are not expected to only visit for short periods of time. Therefore, sensitive individuals at these sites would only be impacted by acute health risks.

Table 3-7: Residential Areas near the Project Area

ID	Distance from Property Boundary to Sensitive Receptor [miles]
Northwest Residences	0.17 - 0.36
West Residences	0.30
Southwest Residences	0.19 - 0.23
Southeast Residence	0.21

Source: Google Earth, 2020

Figure 3-2 identifies the locations of the sensitive receptors listed in Table 3-6 as pink markers. The closest areas with residences are identified with blue and the site property boundary is denoted with a purple outline.

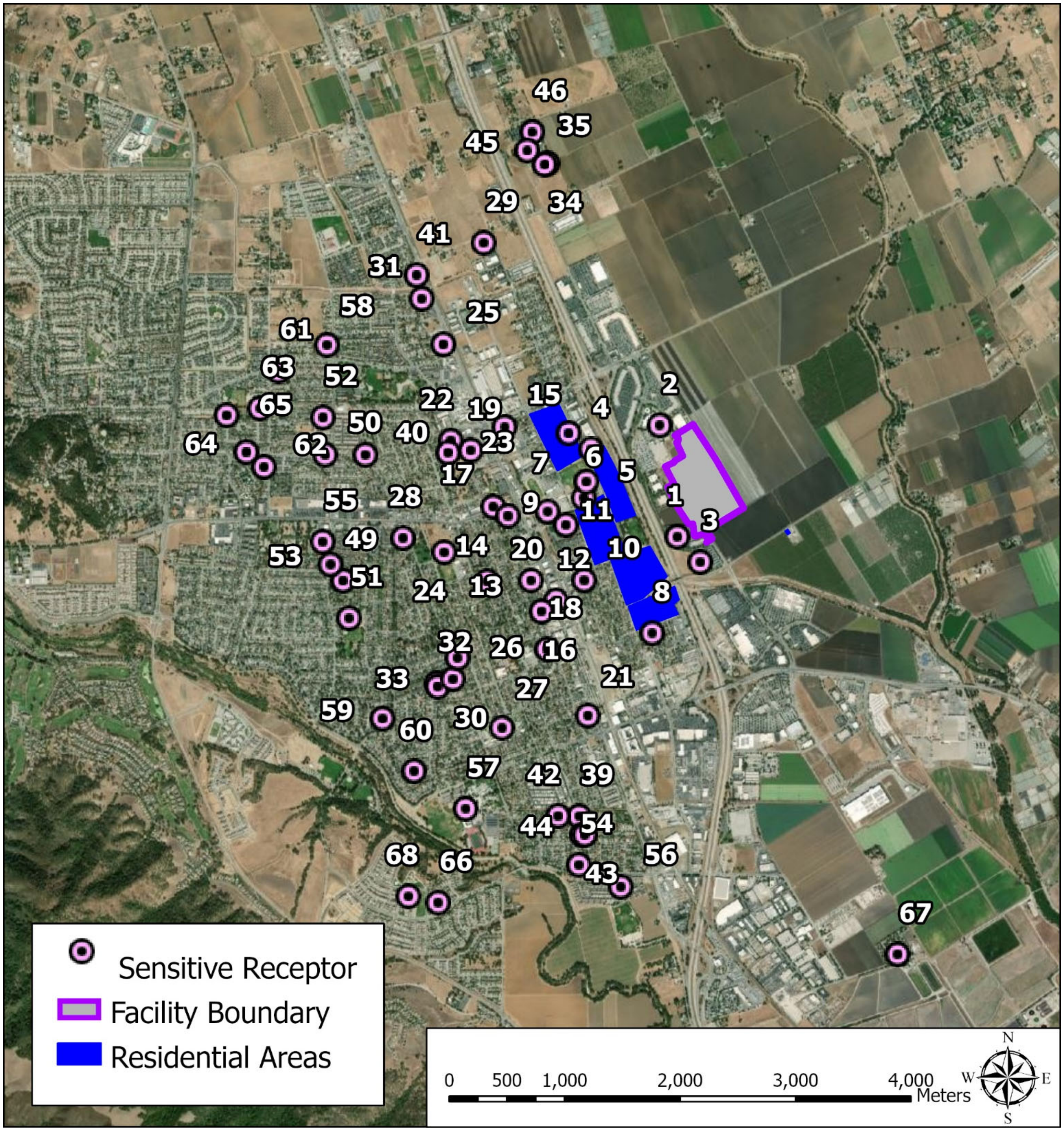


Figure 3-2: Location of Sensitive Receptors and Surrounding Residential Areas

3.2.5 Greenhouse Gases

Greenhouse gases comprise a set of compounds whose presence in the atmosphere is associated with the differential absorption of incoming solar radiation and outgoing radiation from the surface of the earth. In theory, GHGs in the atmosphere affect the global energy balance of the atmosphere-ocean-land system and thereby affect climate change. More specifically, GHGs absorb the long-wave radiation emitted by the earth and hence are capable of warming the atmosphere. Regulated GHGs in California are carbon dioxide (CO_2), CH_4, nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and nitrogen trifluoride (NF_3). Other GHGs, such as water vapor, are not regulated.

To quantify the impact of specific GHGs, each gas is assigned a global warming potential (GWP). Individual GHG compounds have varying GWP and atmospheric lifetimes. The GWP of a GHG is a measure of how much a given mass of a GHG is estimated to contribute to global warming relative to CO_2, which is assigned a GWP of 1.0.

The GWP is used to determine the CO_2 equivalent (CO_2e) mass of each GHG. Calculation of the CO_2e is the accepted methodology for comparing GHG emissions since it normalizes various GHG emissions to a consistent reference gas, CO_2. For example, CH_4's GWP of 25 indicates that the global warming effect of CH_4 is 25 times greater than that of CO_2 on a molecule per molecule basis. CO_2e is the mass emissions of an individual GHG multiplied by its GWP.

Natural processes and human activities emit GHGs. The presence of GHGs in the atmosphere affects the earth's temperature. As discussed in more detail below, many scientists believe that emissions from human activities, such as electricity production and vehicle use, have led to elevated concentrations of these gases in the atmosphere beyond the level of naturally occurring concentrations. Table 3-8 lists GHGs, GWPs, a description of each GHG, and sources for each of the GHGs.

Table 3-8: GWPs, Properties, and Sources of GHGs

Constituent	GWP	Description and Physical Properties	Sources
CO_2	1	CO_2 is an odorless, colorless, naturally occurring GHG.	CO_2 is emitted from natural and anthropocentric (human) sources. Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic out gassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood.
CH_4	25	CH_4 is an organic, colorless, naturally occurring, flammable gas. Its atmospheric concentration is less than CO_2, and its lifetime in the atmosphere is brief (10-12 years) compared to other GHGs.	CH_4 has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of CH_4. Other anthropogenic sources include fossil-fuel and biomass combustion, as well as landfilling and wastewater treatment.
N_2O	298	N_2O, commonly referred to as "laughing gas," is a colorless, nonflammable GHG. It is a powerful oxidizer and breaks down readily in the atmosphere.	Nitrous oxide is produced by microbial processes in soil and water, including those reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is used as an aerosol spray propellant (e.g., in whipped cream bottles) and it is also used in potato chip bags to keep chips fresh. It is used in rocket engines and in race cars.
HFCs	92 - 14,900	HFCs are synthetic man-made chemicals that form one of the GHGs with the highest global warming potential.	HFCs are man-made for applications such as automobile air conditioners and refrigerants.
PFCs	6,288 - 17,700	PFCs are colorless, non-flammable, dense gases that have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years.	The two main sources of PFCs are primary aluminum production and semiconductor manufacture.
SF_6	22,800	SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas.	SF_6 is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.
NF_3	17,200	NF_3 is an inorganic, colorless, odorless, nonflammable gas.	NF_3 is used primarily in the plasma etching of silicon wafers

Source: CARB, 2018a.

There is growing concern about GHG emissions and their adverse impacts on the world's climate and on the environment. These concerns relate to the change in the average weather of the earth that may be measured by changes in wind patterns, storms, precipitation, and temperature. Although there is disagreement as to the rate of global climate change and the extent of the impacts attributable to human activities, the scientific community agrees that there is a direct link between increased emissions of GHGs and long-term global temperature increases. Several gases act as GHGs — their common attribute is that they allow sunlight to enter the atmosphere, but trap a portion of the outward-bound infrared radiation, which warms the air. The process is similar to the effect greenhouses have in raising the air temperature inside the greenhouse, hence the name GHGs. The presence of GHGs in the atmosphere regulates the earth's temperature; however, emissions from human activities such as fossil fuel-based electricity production and the use of motor vehicles have elevated the concentration of GHGs in the atmosphere. It is widely believed that this accumulation of GHGs is contributing to global climate change (BAAQMD, 2017a).

Global climate change refers to the change in average meteorological conditions on the earth with respect to temperature, precipitation, and storms, lasting for decades or longer. The term "global climate change" is often used interchangeably with the term "global warming," but "global climate change" is preferred by some scientists and policymakers to "global warming" because it helps convey the notion that in addition to rising temperatures, other changes in global climate may occur. Climate change may result from the following influences:

- Natural factors, such as changes in the sun's intensity or slow changes in the earth's orbit around the sun;
- Natural volcanic activity;
- Natural processes within the climate system (e.g., changes in ocean circulation); and/or
- Human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and the land surface (e.g., deforestation, reforestation, urbanization, and desertification).

As determined from worldwide meteorological measurements between 1990 and 2005, the primary observed effect of global climate change has been a rise in the average global tropospheric temperature of 0.36 degrees Fahrenheit (°F) per decade. Climate change modeling shows that further warming could occur, which could induce additional changes in the global climate system during the current century. Changes to the global climate system, ecosystems, and the environment of California could include higher sea levels, drier or wetter weather, changes in ocean salinity, changes in wind patterns, or more energetic aspects of extreme weather (e.g., droughts, heavy precipitation, heat waves, extreme cold, and increased intensity of tropical cyclones).

According to the 2006 California Climate Action Team (CAT) Report, several climate change effects can be expected in California over the course of the next century (CalEPA, 2006). These are based on trends established by the IPCC and are summarized below.

- A diminishing Sierra Nevada snowpack, declining by 70% to 90%, and thereby threatening the state's water supply.
- A rise in sea levels, resulting in the displacement of coastal businesses and residences. During the past century, sea levels along California's coast have risen about seven inches.
- An increase in temperature and extreme weather events. Climate change is expected to lead to increases in the frequency, intensity, and duration of extreme heat events and heat waves in California.
- Increased risk of large wildfires if rain increases as temperatures rise. Wildfires in the grasslands and chaparral ecosystems of southern California are estimated to increase by approximately 30% toward the end of the 21st century because more winter rain will stimulate the growth of more plant fuel available to burn in the fall. In contrast, a hotter, drier climate could promote up to 90% more northern California fires by the end of the century by drying out and increasing the flammability of forest vegetation.

- Reductions in the quality and quantity of certain agricultural products. The crops and products likely to be adversely affected include wine grapes, fruit, nuts, and milk.
- Increased electricity demand, particularly in the hot summer months.
- Increased ground-level O_3 formation due to higher reaction rates of O_3 precursors.

Worldwide emissions of GHGs in 2008 were 30.1 billion metric tons of CO_2e and have increased considerably since then (United Nations, 2011). It is important to note that the global emissions inventory data are not all from the same year and may vary depending on the source of the data (U.S. EPA, 2016). Emissions from the top five emitting countries and the European Union accounted for approximately 55% of total global GHG emissions. The United States was the number two producer of GHG emissions. The primary GHG emitted by human activities in the United States was CO_2, representing approximately 84% of total GHG emissions (U.S. EPA, 2016).

CARB is responsible for developing and maintaining the California GHG emissions inventory. This inventory estimates the amount of GHGs emitted into and removed from the atmosphere by human activities within the state of California and supports the Assembly Bill (AB) 32 Climate Change Program. CARB's current GHG emission inventory covers the years 1990 through 2017 and is based on fuel use, equipment activity, industrial processes, and other relevant data (e.g., housing, landfill activity, and agricultural lands).

California's net emissions of GHGs decreased by approximately 9% from 468 million metric tons (MMT) of CO_2e in 2000 to 425 MMT in 2018, with a maximum of 491 MMT in 2004 (CARB, 2020b). In 2016, statewide GHG emissions dropped below the 2020 GHG target (equivalent to 1990 GHG emission levels) and have remained below ever since. Overall trends indicate the carbon intensity of California's economy is declining.

Additional notable trends visible in the data collected thus far in the emission inventories for 2000-2018 include the following (CARB, 2020b):
- Transportation emissions decreased in 2018 compared to the previous year, which is the first year over year decrease since 2013.
- California's electricity sector has experienced an overall downward trend in emissions since 2008.
- Solar power generation has continued its rapid growth since 2013.
- Emissions from high-GWP refrigerants increased 2.3% in 2018 (2000-2018 average year-over-year increase is 6.8%). This upward trend is due to high-GWP refrigerants replacing Ozone Depleting Substances (ODS) which are being phased out in accordance with the 1987 Montreal Protocol.

CARB estimates that transportation was the source of approximately 39.9% of California's GHG emissions in 2018, followed by electricity generation at 14.8%. Other sources of GHG emissions were industrial sources at 21%, residential plus commercial activities at 9.7%, agriculture at 7.7%, and high-GWP sources at 4.8% (CARB, 2020b). It is anticipated that the Covid-19 pandemic will impact California's GHG emissions for 2020, particularly the transportation section due to widespread initiatives promoting or requiring remote work and the overall reduction in travel.

3.3 Existing Policies and Regulations – Air Quality

Established federal, state, and regional regulations provide the framework for analyzing and controlling air pollutant emissions and thus general air quality. The U.S. EPA is responsible for implementing the programs established under the federal Clean Air Act, such as establishing and reviewing the federal ambient air quality standards and judging the adequacy of State Implementation Plans (SIPs), described further below. However, the U.S. EPA has delegated the authority to implement many of the federal programs to the states while retaining an oversight role to ensure that the programs continue to be implemented. In California, CARB is responsible for establishing and reviewing the state ambient air quality standards, developing and managing the California SIP, securing approval of this plan from the U.S. EPA, and identifying toxic air contaminants (TACs). CARB also regulates mobile emissions sources in California, such as construction equipment, trucks, and automobiles, and oversees the activities of air quality management districts (AQMDs), which are organized at the county or regional level. An AQMD is primarily responsible for regulating stationary emissions sources at facilities within its geographic areas and for preparing the air quality plans that are required under the federal Clean Air Act and 1988 California Clean Air Act. The BAAQMD is the regional agency with regulatory authority over emission sources in the nine-county San Francisco Bay Area.

3.3.1 Federal Regulatory Authority

The U.S. EPA has responsibility for enforcing, on a national basis, the requirements of many of the country's environmental laws. Region 9, headquartered in San Francisco, is responsible for the local administration of U.S. EPA programs for California, Arizona, Nevada, Hawaii, and certain Pacific trust territories. The U.S. EPA's activities, relative to the California air pollution control program, focus principally on reviewing California's submittals for the SIP. The SIP is required by the federal Clean Air Act to demonstrate how all areas of the state will meet the NAAQS within the federally-specified deadlines.

The Federal Clean Air Act (CAA) establishes a federal requirement for the U.S. EPA to develop and adopt air quality standards, the NAAQS (see Table 3-1), and specifies future dates for achieving air quality compliance. The CAA further mandates that states submit and implement SIPs for those areas not meeting these standards. The SIPs must include air pollution control measures that demonstrate how the NAAQS will be met. The 1990 amendment to the CAA requires that areas not meeting NAAQS demonstrate reasonable further progress toward attainment and incorporate sanctions for failure to attain or meet specific attainment milestones. Each state is required to adopt an implementation plan outlining pollution control measures to attain the federal standards in nonattainment areas of the state. CARB is responsible for incorporating AQMPs for local air basins into a SIP, which is then reviewed and approved by the U.S. EPA.

In addition to requiring the establishment of NAAQS and the development and maintenance of SIPs, the CAA authorizes the U.S. EPA to establish regulations on certain categories of stationary sources of air pollution.

Specifically, Section 111 of the CAA authorizes the U.S. EPA to establish standards of performance for new and existing sources, commonly referred to as New Source Performance Standards (NSPS). NSPS Subpart IIII establishes emission standards, fuel requirements, testing requirements, and other compliance requirements for manufacturers, owners, and operators of stationary compression ignition internal combustion engines.

The generators are subject to Subpart IIII. Per 40 CFR §60.4205(b) and §60.4202, emergency compression ignition (CI) engines rated between 50 bhp and 3,000 bhp are subject to the emissions standards in 40 CFR §89.112, Table 1, as follows. Further, emergency CI engines rated above 3,000 bhp that are not fire pump engines are subject to the same emission standards, as follows:

- NO_X + NMHC: 6.4 g/kw-hr (4.8 g/bhp-hr)
- CO: 3.5 g/kw-hr (2.6 g/bhp-hr)
- PM: 0.20 g/kw-hr (0.15 g/bhp-hr)

Using the recommended BAAQMD procedure for separating the NO_x+NMHC value, the applicable standard for NO_x would be 4.56 g/bhp-hr, and the applicable standard for NMHC (ROG) would be 0.24 g/bhp-hr (BAAQMD, 2004).[3]

The proposed critical backup generators, life safety generators, and security generator will satisfy these requirements based upon EPA engine family certification levels supplied by the manufacturer. In addition, the proposed critical backup generators and life safety generators will utilize a DPF which will reduce the PM emissions down to no greater than 0.02 g/bhp-hr for the critical backup generators and 0.0123 g/bhp-hr for the life safety generators.

Similarly, Section 112 of the CAA authorizes the U.S. EPA to establish emission standards for listed hazard air pollutants, commonly referred to as National Emission Standards for Hazardous Air Pollutants (NESHAPs). NESHAP Subpart ZZZZ establishes national emission and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines located at major and area sources of HAP emissions. The proposed generators meet the requirements of NESHAP Subpart ZZZZ through compliance with NSPS Subpart IIII per 40 CFR §63.6590(c)(1).

The U.S. EPA also has jurisdiction over emissions from non-stationary sources that are under the authority of the federal government, including aircraft, locomotives, and emissions sources outside state waters. The U.S. EPA also establishes emission standards for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission requirements set by CARB.

3.3.2 State of California Regulatory Authority

CARB is responsible for ensuring the implementation of the California Clean Air Act and for regulating emissions from consumer products and motor vehicles. The California Clean Air Act mandates the achievement of the maximum degree of emissions reductions possible from vehicular and other mobile sources in order to attain CAAQS by the earliest practical date. CARB established the CAAQS for all pollutants for which the federal government has NAAQS. Additional standards for sulfates, visibility-reducing particles, H_2S, and vinyl chloride have been established; however, they are not considered to be a regional air quality problem at this time. H_2S, vinyl chloride, sulfates, and visibility-reducing particles are not measured at any monitoring station in the Bay Area Air Basin. Generally, the CAAQS are equal to or more stringent than the NAAQS.

CARB also implements the ATCM for Stationary Compression Ignition Engines (Stationary CI Engine ATCM) under Title 17 of California Code of Regulations (CCR) Section 93115. The generators are considered new >50 bhp emergency standby diesel-fueled CI engines and will comply with the ATCM by firing ultra-low sulfur diesel, maintaining a Tier 2 or Tier 3 engine certification to meet emission standards, operating with a non-resettable hour meter, and operating no more than 50 hours per year for maintenance and testing purposes.

3.3.3 Regional Regulatory Authority

The Clean Air Act requires that regional planning and air pollution control agencies prepare a regional Air Quality Plan to outline the measures by which both stationary and mobile sources of pollutants can be controlled in order to achieve all standards specified in the Clean Air Act. The California Clean Air Act also requires the development of air quality plans and strategies to meet state air quality standards in areas designated as nonattainment (with the exception of areas designated as nonattainment for the state PM

[3] Assumes a breakdown of 5% NMHC and 95% NO_x.

standards). Maintenance plans are required for attainment areas that had previously been designated as nonattainment in order to ensure continued attainment of the standards.

For air quality planning purposes, the Bay Area Air Basin is classified as a nonattainment area for O_3 and $PM_{2.5}$. BAAQMD is required to update its Clean Air Plan to reflect progress in meeting the air quality standards and to incorporate new information regarding the feasibility of control measures and new emission inventory data. The Bay Area's record of progress in implementing previous measures must also be reviewed. Bay Area plans are prepared with the cooperation of the Metropolitan Transportation Commission (MTC), and the Association of Bay Area Governments (ABAG). On April 19, 2017, the BAAQMD adopted the most recent revision to the Clean Air Plan - the *BAAQMD 2017 Clean Air Plan: Spare the Air, Cool the Climate* (2017 Clean Air Plan) (BAAQMD, 2017a). The 2017 Clean Air Plan serves to:

- Describe a comprehensive control strategy to protect public health and the climate;
- Update the Bay Area 2010 Clean Air Plan in accordance with the requirements of the California Clean Air Act to implement "all feasible measures" to reduce emissions of O_3 precursors and to reduce transport of O_3 and its precursors to neighboring air basins;
- Enhance efforts to reduce emissions of particulate matter and toxic air contaminants; and
- Lay the groundwork for a long-term effort to reduce GHG emissions in the Bay Area Air Basin.

3.3.4 Local Regulatory Authority

BAAQMD Rules and Regulations. The BAAQMD is the regional agency responsible for rulemaking, permitting, and enforcement activities affecting stationary sources of air pollutant emissions in the Bay Area Air Basin. Specific rules and regulations adopted by the BAAQMD limit the emissions that can be generated by various activities and identify specific pollution reduction measures that must be implemented in association with these activities. These rules regulate not only emissions of the six criteria air pollutants, but also toxic emissions and acutely hazardous non-radioactive materials emissions.

Emissions sources subject to these rules are regulated through the BAAQMD's permitting process and standards of operation. Through this permitting process, including an annual permit review, the BAAQMD monitors generation of stationary emissions and uses this information in developing its air quality plans. Any sources of stationary emissions constructed as part of a project within BAAQMD's jurisdiction are subject to the BAAQMD Rules and Regulations. Both federal and state O_3 plans rely upon stationary source control measures set forth in BAAQMD's Rules and Regulations.

BAAQMD Regulation 2 Rule 2 – *New Source Review (NSR)* applies to all new or modified sources requiring a Permit to Operate (PTO) for any new source with actual or potential emissions above the rule trigger limit. The rule also specifies when BACT is required. Per the BACT requirements for CI Stationary Emergency engines rated at greater than or equal to 1,000 bhp (BAAQMD, 2020b), the following emission limits are BACT for the proposed critical backup generators:

- PM: 0.02 g/bhp-hr
- NO_X: 0.5 g/bhp-hr
- POC (NMHC): 0.14 g/bhp-hr
- CO: 2.6 g/bhp-hr
- SO_2: fuel sulfur content not to exceed 15 ppmw

Per the BACT requirements for CI Stationary Emergency engines rated at greater than 50 bhp and less than 1,000 bhp (BAAQMD, 2020c), the following emission limits are BACT for the proposed life safety generators, which reflects the CARB ATCM standard for engines rated greater than 750 bhp and less than 1,000 bhp:

- PM: 0.15 g/bhp-hr
- NMHC+NO_X: 4.8 g/bhp-hr
- CO: 2.6 g/bhp-hr
- SO_2: fuel sulfur content not to exceed 15 ppmw

Using the recommended CARB procedure for separating the NO_x+NMHC value based on 95% NO_x and 5% NMHC, the applicable standard for NO_x would be 4.56 g/bhp-hr, and the applicable standard for NMHC (ROG) would be 0.24 g/bhp-hr.

The following emission limits are BACT for the proposed security generator, which reflect the CARB ATCM standard for engines rated greater than 175 bhp and less than 300 bhp:

- PM: 0.15 g/bhp-hr
- NMHC+NO_X: 3.0 g/bhp-hr
- CO: 2.6 g/bhp-hr
- SO_2: fuel sulfur content not to exceed 15 ppmw

Using the recommended CARB procedure for separating the NO_x+NMHC value, the applicable standard for NO_x would be 2.85 g/bhp-hr, and the applicable standard for NMHC (ROG) would be 0.15 g/bhp-hr.

The critical backup generators, life safety generators, and security generator proposed for the Project meet these emission limits, so BACT is satisfied.

BAAQMD Rule 2-2-302, *Offset Requirements, Precursor Organic Compounds and Nitrogen Oxides,* and Rule 2-2-303, *Offset Requirements, $PM_{2.5}$, PM_{10}, and Sulfur Dioxide,* require offsets of emissions from new or modified sources of precursor organic compounds (POC), NO_X, $PM_{2.5}$, PM_{10}, and SO_2. Offsets are required for facilities that have a Potential to Emit (PTE) of more than 10 tons per year of POC or NO_x, or more than 100 tons per year of $PM_{2.5}$, PM_{10}, or SO_2. Per BAAQMD policy "Calculating Potential to Emit for Emergency Backup Power to Generators," published on June 3, 2019, once offset applicability has been determined using proposed non-emergency operation hours (i.e., 50 hours per year) and 100 hours of emergency use per year, the amount of offsets required is calculated using only non-emergency operation hours.[4] As such, 50 hours per year for testing and maintenance operations is used to determine the amount of offsets required. The Facility's NO_x PTE at full build-out will be greater than 10 tons per year, and as such, the Applicant will provide BAAQMD with NO_X offsets prior to the issuance of the Facility's PTO.[5] The exact amount of offsets to be provided will be determined during BAAQMD's permitting process.

BAAQMD Rule 2-5 applies to new or modified sources of TACs for which an application is submitted on or after July 1, 2005. All TAC emissions from new and modified sources are subject to a health risk assessment (HRA) if emissions of any individual TAC exceed the trigger thresholds specified in Table 2-5-1 of Rule 2-5.

[4] The Miratech AT-IV abatement package requires high enough engine exhaust temperatures to properly abate NO_x emissions to Tier 4F standards. To account for the SCR warm-up period, testing and maintenance emissions are conservatively represented using 15 minutes of Tier 2 emission standards and 45 minutes of Tier 4F emission standards for the 50 allowable hours. Emergency operations conservatively assume 15 minutes of Tier 2 emission standards followed by 2 hours and 45 minutes of Tier 4F emission standards for every 3 hours of emergency operation of the presumed 100 hours of emergency use. These assumptions are conservatively applied to estimate the offsets owed and the exact amount of offsets to be provided will be determined during BAAQMD's permitting process.

[5] Offsets are required at a 1:1 ratio for facilities with a Facility NO_X PTE greater than 10 tpy and less than 35 tpy.

The Project is a source of DPM, a TAC which has a chronic trigger level of 0.26 pounds per year.[6] If a project's DPM PTE is greater than the chronic trigger level limit, the project is subject to the risk assessment requirements of Rule 2-5. Rule 2-5 requires Best Available Control Technology for Toxics (TBACT) for any new or modified source of TACs with a cancer risk greater than 1.0 in one million or a chronic hazard index greater than 0.20. According to the BAAQMD BACT/TBACT Workbook Document Number 96.1.5 (12/22/2020), TBACT for engines rated greater than or equal to 1,000 bhp is an engine certified to meet the PM_{10} emission limit of 0.02 g/bhp-hr. According to the BAAQMD BACT/TBACT Workbook Document Number 96.1.3 (12/22/2020), TBACT for engines rated greater than 50 bhp and less than 1,000 bhp is an engine certified to meet a PM_{10} emission limit of 0.15 g/bhp-hr. The proposed critical backup generators are Tier 4F-compliant and the life safety generators and security building generator are certified Tier 2 or higher engines and will meet the TBACT requirements of Rule 2-5. Rule 2-5 also requires that a project risk does not exceed a cancer risk of 10.0 in one million, a chronic hazard index of 1.0, or an acute hazard index of 1.0, consistent with BAAQMD's CEQA significance thresholds.

BAAQMD Rule 2-6, *Major Facility Review*, implements permitting requirements of Title V of the Clean Air Act, and is applicable to major facilities and other facilities designated as requiring a Title V permit. Per Section 2-6-212, a major facility has the potential to emit 100 tons per year or more of any regulated air pollutant, 10 tons per year or more of a single hazardous air pollutant, or 25 tons per year or more of a combination of HAPs. Alternatively, a facility may elect to implement enforceable permit conditions such that its PTE is limited to below the major facility thresholds, in which case the facility is considered a synthetic minor facility. The applicability of Rule 2-6 will be evaluated during BAAQMD's permitting process.

BAAQMD Rule 9-8, *Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines*, limits emissions and operating hours and outlines recordkeeping requirements for emergency engines rated greater than 50 bhp.

Santa Clara County General Plan. The Health and Safety Chapter of the *Santa Clara County General Plan, 1995-2010* (Santa Clara County, 1994) was amended in 2015. The *Health Element of the Santa Clara County General Plan* has been prepared as a new element, incorporating and updating certain existing subject matter and policies from the existing Health and Safety Chapters (Santa Clara County, 2015). The new Health Element includes strategies and policies that are intended to convey a comprehensive approach for improving air quality, protecting the climate, and protecting public health. Air Quality and Climate Change Strategy #1 is to "[s]trive for air quality improvement through regional and local land use, transportation, and air quality planning." Listed below are the air quality-related policies related to Strategy #1 with potential relevance to the proposed Project.

- HE-G.1 Air quality environmental review. Continue to utilize and comply with the Air District's project- and plan-level thresholds of significance for air pollutants and greenhouse gas emissions.
- HE-G.2 Coordination with regional agencies. Coordinate with the Air District to promote and implement stationary and area source emission measures.
- HE-G.3 Fleet upgrades. Promote Air District mobile source measures to reduce emissions by accelerating the replacement of older, dirtier vehicles and equipment, and by expanding the use of zero-emission and plug-in vehicles.
- HE-G.4 Off-road sources. Encourage mobile source emission reduction from off-road equipment such as construction, farming, lawn and garden, and recreational vehicles by retrofitting, retiring, and replacing equipment and by using alternative fuel vehicles.

[6] There is no acute trigger level for DPM.

- HE-G.5 GHG reduction. Support efforts to reduce GHG emissions from mobile sources, such as reducing vehicle trips, vehicle use, vehicle miles traveled (VMT), vehicle idling, and traffic congestion. These efforts may include improved transit service, better roadway system efficiency, state-of-the-art signal timing, and Intelligent Transportation Systems (ITS), transportation demand management, parking and roadway pricing strategies, and growth management measures.
- HE-G.7 Sensitive receptor uses. Promote measures to protect sensitive receptor uses, such as residential areas, schools, day care centers, recreational playfields and trails, and medical facilities by locating uses away from major roadways and stationary area sources of pollution, where possible, or incorporating feasible, effective mitigation measures.
- HE.G.9 Health infill development. Promote measures and mitigations for infill development to protect residents from air and noise pollution, such as more stringent building performance standards, proper siting criteria, development and environmental review processes, and enhanced air filtration.
- HE-G.12 Energy technologies. Support regional and local initiatives that promote integrated building systems, distributed generation, demand response programs, smart grid infrastructure, energy storage and backup, and electric transportation infrastructure.

Gilroy General Plan. The Community Resources and Potential Hazards chapter of the *Gilroy General Plan* adopted in June 2002 addresses the city's goals, policies, and implementing actions for air quality (City of Gilroy, 2017). Listed below are the air quality-related policies with potential relevance to the proposed Project:

- Policy 21.01 Sensitive Receptors. Use land use planning and project siting to separate air pollution sources from residential areas and other "sensitive receptors" (such as schools, hospitals, and nursing homes), that would be adversely affected by the close proximity to air pollutants.
- Policy 21.04 Regional Cooperation. Cooperate with the [BAAQMD] and other agencies that deal with issues related to air quality (e.g. the Metropolitan Transportation Commission and the Association of Bay Area Governments) to develop and implement regional air quality strategies. Also, support subregional coordination with other cities, counties, and agencies in Santa Clara Valley and adjacent areas to address land use, jobs/housing balance, and transportation planning issues as a means of improving air quality.
- Policy 21.05 Air Quality Impacts from Construction Activity. Reduce the air quality impacts associated with construction activity by reducing the exhaust emissions through appropriate mitigation actions.

3.3.5 Regulatory Authority for Odors and Nuisances

Although offensive odors from stationary sources rarely cause any physical harm, they remain unpleasant and can lead to public distress, generating citizen complaints to local governments. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the distance from and sensitivity of receptors. The BAAQMD's CEQA Air Quality Guidelines recommend that odor impacts be considered for any proposed new odor sources located near existing receptors, as well as any new sensitive receptors located near existing odor sources (BAAQMD, 2017b).

3.3.6 Toxic Air Contaminants Regulations – Air Quality

TACs are regulated under both state and federal laws. Federal laws use the term HAPs to refer to similar types of compounds that are referred to as TACs under state law, however, there are some differences between HAPs and TACs. Both terms encompass essentially the same compounds. Under the 1990 Clean Air Act Amendments, 189 substances were regulated as HAPs. Since 1990, the U.S. EPA has modified the list through rulemaking to include 187 HAPs.

AB 2588. With respect to state law, in 1983 the California legislature adopted AB 1807, which establishes a process for identifying TACs and provides the authority for developing retrofit air toxics control measures on a statewide basis. Air toxics in California also may be regulated under the Air Toxics "Hot Spots" Information and Assessment Act of 1987, or AB 2588.

Under AB 2588, TACs from individual facilities must be quantified and reported to the local air pollution control agency or air quality management district. The facilities are then prioritized by the local agencies based on the quantity and toxicity of these emissions, and on their proximity to areas where the public may be exposed. In establishing priorities, the air districts are to consider the potency, toxicity, quantity, and volume of hazardous materials released from the facility; the proximity of the facility to potential receptors; and any other factors that the air district determines may indicate that the facility may pose a significant risk. High priority facilities are required to perform an HRA, and, if specific risk thresholds are exceeded, they are required to communicate the results to the public through notices and public meetings. Depending on the health risk contributions, emitting facilities can be required to implement varying levels of risk reduction measures. CARB identified approximately 500 TACs, including the 187 federal HAPs, under AB 2588.[7]

AB 617. In July 2017, AB 617 was approved by the Governor. AB617 aims to reduce criteria pollutant and toxic air contaminant emissions within the state of California. The bill presents four main elements in order to achieve this goal:

- Monitoring
  - Identification and recommendation of communities that have a high cumulative exposure burden
  - Establishment of a statewide monitoring plan
  - Set-up and operation of District and Community networks including public availability/presentation of statewide data
- Community Emission Reduction Plans
  - For identified communities and integration with the statewide strategy for AB617 implementation
  - Potentially resulting in the development of District Community Emission Reduction Plans
  - Potentially resulting in the development of state and District emission reduction strategies
- Best Available Retrofit Control Technology (BARCT)
  - Development of a Statewide BACT/BARCT clearinghouse
  - BARCT implementation and the adoption of an expedited timeline for select source categories
- Emission Reporting
  - Development of a Uniform Statewide Reporting platform
  - Establishment of a statewide pollution mapping tool

BAAQMD is responsible for administering federal and state regulations related to TACs in the Bay Area Air Basin. Under federal law, these regulations include NESHAPs and Maximum Achievable Control Technology (MACT) for affected sources. BAAQMD also administers the state regulations AB 1807 and AB 2588, which were discussed above. In addition, the agency requires that new or modified facilities that emit TACs perform air toxics screening analyses as part of the permit application. TAC emissions from new and modified sources are limited through the air toxics new source review program, which superseded the BAAQMD Risk Management Policy, in BAAQMD Regulation 2, Rule 5 for New Source Review of Toxic Air Contaminants. Sources must use the TBACT if health risk modeling identifies an individual source cancer risk of greater than 1 in a million or a chronic hazard index greater than 0.20.

Specific TAC regulations and considerations relevant to the Project are described below.

[7] CARB has proposed the addition of 900 new substances and 3 broad functional groups which will be considered for adoption during the CARB Board meeting scheduled for November 2020.

Diesel Risk Reduction Plan. In August 1998, CARB identified particulate emissions from diesel-fueled engines (DPM) as TACs. CARB developed the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* and the *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines* (CARB, 2000a and 2000b). The goal of these programs is to reduce DPM emissions and the associated health risk by 75 percent in 2010 and by 85 percent in 2020 and to implement regulations that include increasingly stringent emissions standards for on-road diesel trucks and buses, off-road diesel vehicles and equipment, and stationary diesel engines.

In 2001, the U.S. EPA promulgated regulations 40 CFR Parts 69, 80, and 86 (U.S. EPA, 2001) requiring that the sulfur content in motor on-road vehicle diesel fuel be reduced to less than 15 ppm as of June 1, 2006. The U.S. EPA also finalized a comprehensive national emissions control program, the 2007 Heavy-duty Highway Diesel Program (also known as the HD 2007 Program), which regulates highway heavy-duty vehicles and diesel fuel as a single system. Under the HD 2007 program, the U.S. EPA established new emission standards that would significantly reduce PM and NO_X from highway heavy-duty vehicles by the time the current heavy-duty vehicle fleet has been completely replaced in 2030.

The U.S. EPA also promulgated new emission standards for nonroad diesel engines and sulfur reductions in nonroad diesel fuel that would dramatically reduce emissions attributed to nonroad diesel engines. Similar but more stringent standards have been established by CARB. This affects emissions from construction equipment, locomotives, and marine diesel equipment and vehicles. The general objective is to reduce PM emissions from diesel vehicles to levels of below 0.01 grams per brake horsepower-hour (g/bhp-hr) beginning with 2007 model year engines.

3.4 Existing Policies and Regulations – GHGs

3.4.1 International Regulation – GHG

Intergovernmental Panel on Climate Change (IPCC). In 1988, the United Nations created the IPCC to provide independent scientific information regarding climate change to policymakers. The IPCC does not conduct research itself, but rather compiles information from a variety of sources into reports regarding climate change and its impacts. The IPCC has thereafter periodically released reports on climate change, and in 2018 released its Global Warming of 1.5 degrees C, which concluded that "[w]arming of the climate system is unequivocal," and that "[a]nthropogenic GHG emissions … are extremely likely to have been the dominant cause of the observed warming since the mid-20th century" (IPCC, 2018).

United Nations Framework Convention on Climate Change. On March 21, 1994, the United States joined numerous countries around the world in signing the United Nations Framework Convention on Climate Change (UNFCCC). Under the UNFCCC, governments gather and share information on GHGs, national policies, and best practices; launch national strategies for addressing GHGs and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

Kyoto Protocol. The Kyoto Protocol is an international agreement linked to the UNFCCC (discussed above). The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing GHGs an average of 5% against 1990 levels over the five-year period from 2008–2012. Whereas the UNFCCC only encouraged industrialized countries to stabilize emissions, the Protocol commits them to do so. Developed countries have contributed more emissions over the last 150 years than underdeveloped countries; therefore, the Protocol places a heavier burden on developed nations under the principle of "common but differentiated responsibilities." The United States has not entered into force of the Kyoto Protocol.

Paris Agreement. In April 2015, representatives from 196 state parties signed the Paris Agreement, an agreement within the UNFCCC, dealing with GHG emissions mitigation, adaptation, and finance with the goals of keeping the global average temperature increase below 2 °C (3.6 °F) above pre-industrial levels, and ideally, below 1.5 °C (2.7 °F) recognizing that this would substantially reduce the risks and impacts of climate change. Each signatory country must plan, implement, and regularly report on the actions taken to mitigate climate change. While there are no overarching emissions targets or deadlines, each self-determined target should go beyond previously set targets. In June 2017, the U.S. announced its intention to withdraw from the agreement; however, the earliest effective date of withdrawal for the U.S. is November 2020. In response to this announcement, the United States Climate Alliance was formed by governors committing to uphold the objectives of the Paris Agreement as applicable to their states. California is a member of the United States Climate Alliance.

3.4.2 Federal Regulations and Standards – GHG

Federal Regulation of Climate Change. The United States historically has had a voluntary approach to reducing GHG emissions. However, on April 2, 2007, the U.S. Supreme Court ruled that the U.S. EPA has the authority to regulate CO_2 emissions under the CAA. The U.S. EPA's GHG Tailoring Rule, issued in May 2010, established initial emission thresholds for Prevention of Significant Deterioration (PSD) and Title V permitting based on CO_2e emissions. This rule was amended in 2012, then in 2014, the U.S. Supreme Court decided that EPA may not treat GHGs as an air pollutant for purposes of determining whether a source is a major source required to obtain a PSD or Title V permit. However, PSD permits that are otherwise required (based on emissions of other non-GHG regulated pollutants) may continue to limit GHG emissions through BACT requirements.

During the Obama administration, new NSPS were implemented limiting emissions from methane and the Clean Power Plan was established requiring states to limit GHG emissions from electricity generation. These GHG-related rules have experienced significant push-back and litigation, and in June 2019, the Clean Power Plan was replaced by the less-stringent Affordable Clean Energy rule.

Consolidated Appropriations Act of 2008 - Mandatory Reporting of GHG. The Consolidated Appropriations Act of 2008, passed in December 2007, requires the establishment of mandatory GHG reporting requirements. On September 22, 2009, the U.S. EPA issued the Final Mandatory Reporting of GHGs rule. The rule requires reporting of GHG emissions from large sources and suppliers in the United States and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions are required to submit annual reports to the U.S. EPA.

3.4.3 State Regulations and Standards – GHG

Executive Order S-3-05. Executive Order S-3-05 was signed by the Governor in 2005 proclaiming California is vulnerable to the impacts of climate change. It states that increased temperatures could reduce the Sierra Nevada's snowpack, worsen California's air quality problems, and potentially cause a rise in sea levels. The Executive Order establishes total GHG emission targets that require reducing GHG emissions to the 2000 level by 2010, the 1990 level by 2020, and to 80% below the 1990 level by 2050. The 2050 reduction goal represents what scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be an aggressive, but achievable, midterm target.

AB 32. California's major initiative for reducing GHG emissions is outlined in AB 32, the California Global Warming Solutions Act of 2006, passed by the Legislature on August 31, 2006. The bill requires CARB to do the following (CARB, 2018b):

- "Prepare and approve a Scoping Plan for achieving the maximum technologically feasible and cost-effective reductions in GHG emissions from sources or categories of sources of GHGs by 2020, and update the Scoping Plan every five years.
- Maintain and continue reductions in emissions of GHG beyond 2020.
- Identify the statewide level of GHG emissions in 1990 to serve as the emissions limit to be achieved by 2020.
- Identify and adopt regulations for discrete early actions that could be enforceable on or before January 1, 2010.
- Adopt a regulation that establishes a system of market-based declining annual aggregate emission limits for sources or categories of sources that emit GHG emissions.
- Convene an Environmental Justice Advisory Committee to advise the Board in developing and updating the Scoping Plan and any other pertinent matter in implementing AB 32.
- Appoint an Economic and Technology Advancement Advisory Committee to provide recommendations for technologies, research and GHG emission reduction measures."

California's Cap and Trade program was launched in 2013, and in 2016, California achieved the 2020 GHG reduction target.

Executive Order B-30-15. The 2020 GHG emission reduction goal was achieved ahead of schedule leading to the issuance of Executive Order B-30-15 in 2015 which establishes a GHG "reduction target of 40% below 1990 levels by 2030 – the most aggressive benchmark enacted by any government in North America to reduce dangerous carbon emissions over the next decade and a half" (State of California, 2015). Executive Order B-30-15 was issued in support of the goals outlined in Executive Order S-3-05. The 2017 Scoping Plan, discussed below, outlines the main state strategies for meeting the 2030 deadline and to reduce GHGs that contribute to global climate change.

2017 Scoping Plan. CARB adopted the initial Climate Change Scoping Plan (Scoping Plan) in 2008, which outlines actions recommended to obtain the AB 32 goals. The Scoping Plan called for an "ambitious but achievable" reduction in California's GHG emissions, cutting approximately 30% from business-as-usual emission levels projected for 2020, or about 10% from today's levels. AB 32 requires that CARB update the scoping plan at least every 5 years. The first update to the Climate Change Scoping Plan was released on May 15, 2014, and built upon the initial Scoping Plan with new recommendations. Shortly after California met the 2020 GHG reduction target, the 2017 Scoping Plan was developed to identify new policies and actions to meet the 2030 GHG reduction goals (outlined in Executive Order B-30-15), and to address international goals.

The 2017 Scoping Plan contains the following emission reduction measures in addition to the previous scoping plans to reduce the state's emissions (CARB, 2017):

1. *Enhance Industrial Efficiency & Competitiveness.* Implement policies and measures to continue reducing GHG, criteria, and toxic air emissions from industrial sources. Improve productivity and strengthen economic competitiveness, and prioritize goods that have low carbon footprints. Cut energy costs and GHG emissions by transitioning to efficiency hydrofluorocarbon alternatives.
2. *Prioritize Transportation Sustainability.* Invest in zero-emission vehicles and infrastructure, land use planning, and active transportation options such as walking and biking. Promote markets to

favor electric cars, trucks, buses, and equipment and increasing the use of low carbon fuels where zero-emission option are not yet available.

3. *Continue Leading on Clean Energy.* Integrate at least 50 percent renewables as the primary source of power, make net zero energy buildings a standard, implement Existing Buildings Energy Efficiency Action Plan, reduce the use of heating fuels, and minimize fugitive methane leaks, prioritize natural gas efficiency and demand reduction, and enabling cost-effective access to renewable gas.
4. *Put Waste Resources to Beneficial Use.* Develop and implement programs to divert organic waste from landfills, reducing methane emissions. Reduce packaging and identify sustainable funding to support waste management programs.
5. *Support Resilient Agricultural and Rural Economies and Natural and Working Lands.* Protect and enhance natural and working lands to transform the lands into a net carbon sink. Develop and implement the Natural and Working Lands Implementation Plan to maintain those lands as a net carbon sink. Monitor progress by completing the Natural and Working Lands Inventory.
6. *Secure California's Water Supplies.* Develop a voluntary registry for GHG emissions from energy use associated with water. Continue to increase the use of renewable energy to operate the State Water Project.
7. *Cleaning the Air and Public Health.* Implement freight and mobile source strategies to reduce emissions and support the efforts of AB 617.
8. *Successful Example of Carbon Pricing and Investment.* Support the Cap and Trade program and continue reinvesting a legislatively-determined amount of funds to benefit disadvantaged and low-income communities as well as in clean technologies. Continue to grow the program to link to and set an example for similar programs world-wide.
9. *Fostering Global Action.* Participate in global conferences and initiatives to promote knowledge sharing and global GHG reductions.
10. *Unleashing the California Spirit.* Invest in training and education for a lower carbon economy workforce. Develop a long-term funding plan to inform future appropriations necessary to achieve our long-term targets while sending clear market and workforce development signals. Promote innovation and inclusion.

SB 375. Signed into law on October 1, 2008, SB 375 provides emissions-reduction goals around which regions can plan; integrates disjointed planning activities; and provides incentives for local governments and developers to implement "smart growth" planning and development strategies, which are to include reductions in average VMT, commuting distances, and criteria and GHG air pollutant emissions. Cities located within these regions are then required, in turn, to update their General Plans in accordance with the regional plans. SB 375 has three major components:

- Using the regional transportation planning process to achieve reductions in GHG emissions consistent with AB 32's goals;
- Offering CEQA incentives to encourage projects that are consistent with a regional plan that achieves GHG emission reductions; and
- Coordinating the regional housing needs allocation process with the regional transportation process while maintaining local authority over land-use decisions.

SB 375 requires each Metropolitan Planning Organization (MPO) to include a Sustainable Communities Strategy (SCS) in the regional transportation plan that demonstrates how the region will meet the GHG emission targets and creates CEQA streamlining incentives for projects that are consistent with the regional SCS. The focus of SB 375 is on the location of new residential projects and coordinated transportation planning. Non-compliance with SB 375 will result in transportation funds being withheld from the regional and/or local agency.

AB 398. AB 398, signed in July 2017, aims to reduce GHG emissions within the state of California. The bill outlines new requirements for California's GHG Cap-and-Trade program that includes, among others, extending the program through 2030, limiting the use of offsets, and requiring CARB to establish a price ceiling for GHG allowances.

SB 1368. In September 2006, the Governor signed Senate Bill 1368, which calls for the adoption of a GHG performance standard for in-state and imported electricity generators to mitigate climate change. On January 25, 2007, the CPUC adopted an interim GHG emissions performance standard. This standard is a facility-based emissions standard requiring all new long-term commitments for base load generation to serve California consumers with power plants that have emissions no greater than those from a combined cycle gas turbine plant. The established level is 1,100 pounds of CO_2 per megawatt-hour.

SB 743. SB 743 of 2013 amended CEQA to change the conventional approaches to transportation impact analysis which focus on vehicle level of service (LOS) and vehicle delay. SB 743 changes the focus of transportation impact analysis in CEQA from measuring impacts to drivers, to measuring the impact of driving on the environment, including GHG emissions. SB 743 amendments to CEQA require that the LOS metric be replaced with a metric considering VMT. This shift in transportation impact focus is expected to better align transportation impact analysis and mitigation outcomes with the State's goals to reduce GHG emissions, encourage infill development, and improve public health through more active transportation. Amendments to the CEQA Guidelines were approved in December 2018 and included the incorporation of changes to address SB 743. Guidelines, Section 15064.3(c) states, "A lead agency may elect to be governed by the provisions of this section immediately. Beginning on July 1, 2020, the provisions of this section shall apply statewide."

Executive Order B-55-18. Executive order B-55-18 was signed by the Governor in 2018 committing state resources to achieving carbon neutrality in California. It states California's intention is "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. This goal is in addition to the existing statewide targets of reducing greenhouse gas emissions" (State of California, 2018). The policies and measures taken in support of achieving carbon neutrality should improve air quality, support the health and economic resiliency of communities (particularly low-income and disadvantaged), support climate adaption and native biodiversity, and conserve the state's water supply and water quality.

3.4.4 Regional Policies – GHG

BAAQMD 2017 Clean Air Plan. The BAAQMD 2017 Clean Air Plan includes climate protection as a primary goal and specifies the GHG-related priorities listed below.

- Reduce emissions of "super-GHGs" such as CH_4, black carbon, and fluorinated gases
- Decrease demand for fossil fuels (gasoline, diesel, and natural gas)
  - Increase the efficiency of industrial processes, energy, and transportation systems
  - Reduce demand for vehicle travel, and high-carbon goods and services
- Decarbonize our energy system
  - Make the electricity supply carbon-free
  - Electrify the transportation and building sectors

The Clean Air Plan lays the groundwork for a long-term effort to reduce Bay Area GHG emissions by 40% below 1990 levels by 2030 and 80% below 1990 levels by 2050, consistent with the state GHG reduction targets. The Plan includes a comprehensive control strategy for GHGs that the District intends to implement over the next three to five years.

Santa Clara County Climate Action Plan. Adopted by the Board of Supervisors in December 2013, the Santa Clara County Climate Action Plan (CAP) focuses on County operations, facilities, and employee actions to reduce greenhouse gas emissions, energy and water consumption, solid waste, and fuel consumption. The Plan focuses on steps needed to reach a 15% GHG reduction goal by 2020 and also identifies policies and actions needed to reduce emissions beyond 2020.

Along with the municipal climate action plan, the Silicon Valley 2.0 project is a countywide effort to minimize the anticipated impacts of climate change and reduce local greenhouse gas emissions. The project uses a risk management framework to evaluate the exposure of populations to climate impacts, examines the potential consequences of this exposure, and develops adaptation strategies that improve community resilience.

4. IMPACTS ASSESSMENT

4.1 Significance Criteria

Appendix G of the California state CEQA Guidelines recognizes the following significance criteria related to air quality and GHG emissions (California Natural Resources Agency, 2019). Based on the criteria, potential impacts to air quality would be significant if the proposed Project would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The Project would cause adverse impacts associated with GHG emissions if it would:

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

The CEQA Air Quality Guidelines (BAAQMD, 2017b) contain numerical thresholds of significance that are designed to implement the above general criteria for air quality and GHG impacts in the Bay Area Air Basin. The BAAQMD thresholds of significance are based on extensive studies, and serve as a means of translating the general standards set forth in Appendix G into quantitative thresholds against which a proposed project's air pollutant and GHG emissions can be measured (BAAQMD, 2017b). Thus, the BAAQMD thresholds of significance are considered appropriate for use in evaluating the proposed Project.

Table 4-1 presents the BAAQMD thresholds of significance used as applicable in this AQIA for air quality and GHG emissions associated with the proposed Project. The table presents thresholds for construction-related and operational-related emissions. The applicability and use of the specific project-level thresholds for evaluation of the proposed Project is explained in the discussion of each impact in Section 4.2 through Section 4.7 below.

Table 4-1: BAAQMD Air Quality CEQA Thresholds of Significance

Pollutant/Criteria	Construction-Related	Operational-Related [a]
ROG	54 lb/day	54 lb/day; 10 tpy
NO_x	54 lb/day	54 lb/day; 10 tpy
PM_{10}	82 lb/day (exhaust)	82 lb/day; 15 tpy
$PM_{2.5}$	54 lb/day (exhaust)	54 lb/day; 10 tpy
PM_{10} / $PM_{2.5}$ (Fugitive Dust)	Best Management Practices	None
Local CO	None	9.0 ppm (8-hour average), 20.0 ppm (1-hour average) OR meet screening criteria: 1. Consistent with applicable congestion management plan 2. Not increase intersection volumes to more than 44,000 vehicle per hour 3. Not increase intersection volumes to more than 24,000 where mixing is substantially limited
GHGs –Stationary Sources	None	10,000 MT CO_2e/yr
Risk and Hazards for new sources and receptors (Individual Project)	Same as Operational Thresholds	Compliance with Qualified Community Risk Reduction Plan OR Increased cancer risk of >10.0 in a million Increased non-cancer risk of > 1.0 Hazard Index (Chronic or Acute) Ambient $PM_{2.5}$ increase: > 0.3 µg/m^3 annual average
Risk and Hazards for new sources and receptors (Cumulative Threshold	Same as Operational Thresholds	Compliance with Qualified Community Risk Reduction Plan OR Cancer: > 100 in a million (from all local sources) Non-cancer: > 10.0 Hazard Index (from all local sources) (Chronic) $PM_{2.5}$: > 0.8 µg/m^3 annual average (from all local sources)
Accidental Release of Acutely Hazardous Air Pollutants	None	Storage or use of acutely hazardous materials locating near receptors or new receptors locating near stored or used acutely hazardous materials considered significant
Odors	None	5 confirmed complaints per year averaged over 3 years

Source: BAAQMD, 2017b
Notes:
a. BAAQMD construction-related thresholds and operational-related thresholds that are not applicable to the Project are not listed. The daily emission thresholds reflect average daily emissions values. The annual emission thresholds reflect maximum annual emissions values.

4.2 Project Emissions

4.2.1 Project Construction Emissions

The proposed Project involves two phases that include construction activities. Construction emissions from the construction of the GDC will result from ground preparation, grading activities, building erection, parking lot construction activities, use of onsite construction equipment, and architectural coating. Construction emissions from the GBGF are included in the GDC construction emission calculations. GBGF offsite construction emissions will result primarily from material transport to and from the site, material placement in the generation yard, and worker travel. Table 4-2 summarizes the equipment used for construction activities.

Table 4-2: Construction Equipment

Phase Name	Off Road Equipment Type	Off Road Equipment Unit Amount	Horse-power	Load Factor
Site and Building #1 – Site Preparation	Excavators	4	158	0.38
	Scrapers	4	367	0.48
	Tractors/Loaders/Backhoes	4	97	0.37
Site and Building #1 – Grading	Excavators	3	158	0.38
	Graders	3	187	0.41
	Rollers	3	80	0.38
	Rubber Tired Dozers	3	247	0.40
	Scrapers	3	367	0.48
	Tractors/Loaders/Backhoes	3	97	0.37
Site and Building #1 – Foundation	Bore/Drill Rigs	4	221	0.50
	Cement and Mortar Mixers	4	9	0.56
	Excavators	3	158	0.38
	Other Construction Equipment	4	172	0.42
	Pumps	4	84	0.74
	Tractors/Loaders/Backhoes	3	97	0.37
Site and Building #1 – Structural/Building Exterior/Roof	Cement and Mortar Mixers	4	9	0.56
	Cranes	2	231	0.29
	Forklifts	6	89	0.20
	Generator Sets	2	84	0.74
	Other Construction Equipment	4	172	0.42
	Pumps	4	84	0.74
	Tractors/Loaders/Backhoes	1	97	0.37
	Welders	4	46	0.45
Site and Building #1 – ROMP01-ROMP12	Cranes	24	231	0.29
	Forklifts	48	89	0.20
	Generator Sets	24	84	0.74
	Pressure Washers	24	13	0.30
	Sweepers/Scrubbers	12	64	0.46

Phase Name	Off Road Equipment Type	Off Road Equipment Unit Amount	Horse-power	Load Factor
	Welders	36	46	0.45
Site and Building #1 – Paving	Excavators	2	158	0.38
	Graders	2	187	0.41
	Pavers	2	130	0.42
	Paving Equipment	2	132	0.36
	Plate Compactors	2	8	0.43
	Pressure Washers	2	13	0.30
	Rollers	2	80	0.38
	Rubber Tired Dozers	2	247	0.40
	Scrapers	2	367	0.48
	Tractors/Loaders/Backhoes	2	97	0.37
Site and Building #1 – ROMP01-ROMP12 Architectural Coating	Air Compressors	12	78	0.48
Site and Building #2 – Site Preparation	Excavators	4	158	0.38
	Scrapers	4	367	0.48
	Tractors/Loaders/Backhoes	4	97	0.37
Site and Building #2 – Grading	Excavators	3	158	0.38
	Graders	3	187	0.41
	Rollers	3	80	0.38
	Rubber Tired Dozers	3	247	0.40
	Scrapers	3	367	0.48
	Tractors/Loaders/Backhoes	3	97	0.37
Site and Building #2 – Foundation	Bore/Drill Rigs	4	221	0.50
	Cement and Mortar Mixers	4	9	0.56
	Excavators	3	158	0.38
	Other Construction Equipment	4	172	0.42
	Pumps	4	84	0.74
	Tractors/Loaders/Backhoes	3	97	0.37
Site and Building #2 – Structural/Building Exterior/Roof	Cement and Mortar Mixers	4	9	0.56
	Cranes	2	231	0.29
	Forklifts	6	89	0.20
	Generator Sets	2	84	0.74
	Other Construction Equipment	4	172	0.42
	Pumps	4	84	0.74
	Tractors/Loaders/Backhoes	1	97	0.37
	Welders	4	46	0.45
Site and Building #2 – ROMP01-ROMP05, ROMP07-ROMP11	Cranes	20	231	0.29
	Forklifts	40	89	0.20
	Generator Sets	20	84	0.74
	Pressure Washers	20	13	0.30
	Sweepers/Scrubbers	10	64	0.46
	Welders	30	46	0.45

Phase Name	Off Road Equipment Type	Off Road Equipment Unit Amount	Horse-power	Load Factor
Site and Building #2 – Paving	Excavators	2	158	0.38
	Graders	2	187	0.41
	Pavers	2	130	0.42
	Paving Equipment	2	132	0.36
	Plate Compactors	2	8	0.43
	Pressure Washers	2	13	0.30
	Rollers	2	80	0.38
	Rubber Tired Dozers	2	247	0.40
	Scrapers	2	367	0.48
	Tractors/Loaders/Backhoes	2	97	0.37
Site and Building #2 – ROMP01-ROMP05, ROMP07-ROMP11 Architectural Coating	Air Compressors	10	78	0.48

Construction of Phase I to support the first GDC Building is anticipated to begin in April 2021 or May 2021 and take approximately 11 months for exterior construction and approximately 25 months for additional interior construction. Construction of Phase II is conservatively assumed to occur immediately following the completion of the first generation yard and to take approximately 10 months. Additional Phase II interior construction activities are expected to take approximately 30 months following exterior construction. This assumption calculates conservative construction emissions as construction equipment emission profiles generally improve over time.

Construction emissions are computed using CalEEMod, Version 2016.3.2. The construction schedule and projected equipment usage were provided as inputs for the model. Inputs to the CalEEMod model are summarized as follows:

Land Uses. For Phase I, "General Light Industry" 220,500 square feet on 52.47 acres. "Parking Lot" 13,555 square feet on 0.31 acres. "Other Asphalt Surfaces" 140,312 square feet on 3.22 acres. For Phase II, "General Light Industry" 218,000 square feet on 5.00 acres. "Parking Lot" 6,777 square feet on 0.16 acres. "Other Asphalt Surfaces" 70,156 square feet on 1.61 acres.

Demolition. No demolition phase is assumed as the site is an undeveloped parcel that was previously used for agricultural production.

Site Preparation and Grading. The site preparation phase is anticipated to last 11 days as part of Phase I and 11 days as part of Phase II. The Grading and Excavation phase will be 30 days for Phase I and 30 days for Phase II. The modeling accounts for the export of 53,000 cubic yards of soil during Phase I and the import of 210,000 cubic yards of soil split evenly between both phases. The Phase I hauling trips will be phased such that the haul truck that imports material will be the same haul truck that exports material, resulting in 13,125 hauling trips each during Phase I and Phase II per the default average truck capacity of 16 cubic yards.

Building Construction. Building construction is modeled as two phases: exterior building (using the Building Construction phase) and interior construction (using the Building Construction and Architectural Coating phases). Interior building construction will take place in phases following exterior construction. Each interior construction phase is labelled as ROMP, for example, ROMP01 for the first interior building construction phase. Model inputs for building construction that are modified from CalEEMod defaults are summarized in Table 4-3.

Paving. The paving phase includes the import of 4,274 cubic yards of paving material, modeled as 534 total hauling trips per the default average truck capacity of 16 cubic yards. The paving phase will be split between Phase I and Phase II, with two-thirds of the paving and associated hauling trips occurring during Phase I and one-third of the paving and associated hauling trips occurring during Phase II.

Table 4-3 summarizes significant modifications to default inputs of CalEEMod, which were made based on project-specific representations of construction activity. Appendix A-4 includes a comprehensive list of all modifications to default inputs of CalEEMod.

Table 4-3: CalEEMod Significant Modifications to Default Inputs

CalEEMod Phase Name	Worker Trips (per day)	Vendor Trips (per day)	Total Trips Hauling	Trip Length Hauling (miles)
Site and Building #1 – Grading	Default	Default	13,125	Default
Site and Building #1 - Paving	Default	Default	356	Default
Site and Building #2 – Grading	Default	Default	13,125	Default
Site and Building #2 – Paving	Default	Default	178	Default

Based on an estimated construction start date of April 19, 2021 and an anticipated completion date of April 17, 2024, CalEEMod computes 765 construction days for Phase I. Based on a construction start date of November 13, 2023 and an anticipated completion date of March 3, 2027, CalEEMod computes 842 construction days for Phase II. Total construction emissions from full build out of the Project in comparison to the BAAQMD CEQA thresholds of significance are shown in Table 4-4. Average daily emissions are computed by taking the maximum annual emissions and assuming that construction occurs 260 days of the year, which is a conservative estimate based on the number of working days in a year.

Construction period GHG emissions are also computed using CalEEMod as described above. Table 4-4 includes a summary of the GHG emissions due to construction of the proposed Project.

In addition to mobile equipment and vehicle exhaust, emissions of $PM_{2.5}$ and PM_{10} due to construction fugitive dust are calculated using CalEEMod and are summarized in Table 4-4. The soil type of dust from material movement is input as a default value of 6.9% material silt content. Material moisture content of dust from material movement is input as a default value of 7.9% for bulldozing and 12% for truck loading. Material moisture content of on-road fugitive dust is input as a default value of 0.5% for all construction activities. Wind speed data is based on project location, CEC Forecasting Climate Zone and information from the Western Regional Climate Center. For the proposed Project, the windspeed is input as 2.2 miles per hour (mph).

Control methods, control efficiencies, and BAAQMD basic construction mitigation measures are included in the CalEEMod calculations as mitigation, further described below as Mitigation Measure AQ-1. CalEEMod inputs associated with BAAQMD basic construction mitigation measures include a Water Exposed Area with a Frequency of two (2) times per day resulting in 55% PM_{10} and $PM_{2.5}$ reduction and a Vehicle Speed limited to 15 mph.

Table 4-4: Project Construction Emissions Summary and Comparison to Significance Thresholds

Activity	Pollutant								
	Fugitive PM_{10} [a]	Fugitive $PM_{2.5}$ [a]	PM_{10}	$PM_{2.5}$	CO	NO_x	ROG/ VOC	SO_2	CO_2e
	Pounds per Day (lb/day)								
Construction Emissions	4.50	1.43	5.95	3.27	80.0	52.6	47.9	0.17	For this analysis and comparison to thresholds, GHG emissions are calculated on an annual basis only.
Significance Threshold	***N/A***	***N/A***	***82***	***54***	***N/A***	***54***	***54***	***N/A***	
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***	***No***	***No***	
Activity	**Tons per Year (tpy)** [b]								**Metric Tons per Year (MT/yr)**
Construction Emissions	0.59	0.19	0.77	0.43	10.4	6.84	6.22	0.02	1,976
Significance Thresholds [c]	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***	***N/A***
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***	***No***	***No***	***N/A***

a. Fugitive emissions will be controlled with best management practices, in accordance with the significance threshold.
b. Construction emissions represent the maximum mitigated emissions based on 260 total weekdays per year.
c. There are no annual construction-related thresholds of significance.

Mitigation Measure AQ-1 will reduce construction period NO_x emissions to levels below the BAAQMD thresholds of significance, as addressed in detail below. Appendix A-4 includes the CalEEMod output file that is the basis of the construction emission calculations.

Mitigation Measure AQ-1. Include construction equipment exhaust controls and measures to control dust and exhaust during construction.

During any construction period ground disturbance, the Applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD in their CEQA Air Quality Guidelines and those listed below would reduce the air quality impacts associated with grading and new construction to a less than significant level. The contractor shall implement the following best management practices that are required of all projects:

Basic Measures

a. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

1. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

2. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

3. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).

4. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

5. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

6. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

7. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Exhaust Control Measures

8. The Applicant shall implement the following measures such that the off-road equipment to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) shall meet the emission values as summarized in Table 4-4 above. Acceptable methods for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available. The following are examples of feasible methods:

   a. The following construction equipment used at the site during Phase I and Phase II shall be electric:
      i. Pressure Washer
      ii. Welder

   b. The following construction equipment used at the site during Phase I and Phase II shall meet U.S. EPA emission standards for Tier 3 engines and include particulate matter emissions control equivalent to CARB Level 2 verifiable diesel emission control devices that altogether achieve a 85 percent reduction in particulate matter exhaust:
      i. Air Compressors
      ii. Concrete/Industrial Saws
      iii. Forklifts
      iv. Generator Sets
      v. Other Construction Equipment, such as Concrete Vibrators
      vi. Pavers
      vii. Pumps
      viii. Rollers
      ix. Sweeper/Scrubbers
      x. Tractors/Loaders/Backhoes

   c. The following construction equipment used at the site during Phase I shall meet U.S. EPA Tier 4 final emission standards according to one of the following options:
      i. Option 1: Cranes, Graders, Rubber Tired Dozers, Tractors/Loaders/Backhoes
      ii. Option 2: Cranes, Graders, Rubber Tired Dozers, Bore/Drill Rigs

iii. Option 3: Cranes, Graders, Rubber Tired Dozers, Excavators

d. The following construction equipment used at the site during Phase II shall meet U.S. EPA Tier 4 final emission standards:
   i. Cranes
   ii. Scrapers

Effectiveness of Mitigation

The effects of Mitigation Measure AQ-1 were modeled for the proposed Project using CalEEMod and were found to reduce overall NO_x emissions to below the BAAQMD significance thresholds. Therefore, the Applicant proposes to implement Mitigation Measure AQ-1 in the proposed Project.

4.2.2 Operational Emissions Calculation Methodology

This section discusses methods used for calculating emissions associated with the proposed Project operations. An overview is provided below and details for each emission source are provided in Tables 4-5 through 4-6.

Proposed Project Overview. Operational air pollutant and GHG emissions are those that result from operation of the 53 generators for routine non-emergency testing and maintenance purposes, mobile sources such as employee vehicles, and general operation of the GDC buildings.

For the purposes of comparison to the BAAQMD maximum annual emission thresholds of significance, the Project emission calculations assume 50 hours per year per generator for non-emergency operation testing and maintenance operation per Title 17, CCR Section 93115.6(a)(3)(A)(1)(c): ATCM for Stationary CI Engines. For purposes of comparison to the BAAQMD average daily emission thresholds of significance, Project emission calculations conservatively assume 24 hours per day for all critical backup generators combined, 24 hours per day for all life safety generators combined, and 24 hours per day for the security building generator. There are no scenarios such that routine testing or maintenance for an individual generator would require 24 hours of operation in a single day. However, the Applicant has conservatively assumed it is possible that a combination of critical backup generators may be run for up to 24 combined hours in one day for maximum potential daily emission. The actual emissions are anticipated to be much less than what has been provided in this AQIA report.

Generator Emissions. The calculation methods utilized for estimating the proposed Project operational emissions are explained in detail in the following paragraphs. Emission factors and calculation methods used to quantify emissions from the proposed Project are based on facility information and data available from generally accepted public sources.

In the proposed Project, the GBGF is equipped with 50 critical backup generators, two life safety generators and one security building generator. The Applicant proposes to limit operation to one generator at a time for routine maintenance and testing activities conducted pursuant to manufacturer specifications. Generator operation for emergency use and emission testing for compliance purposes is not limited. The emission calculations are based on the generator engine horsepower, hours of operation, and EPA family emission factors. The critical backup generators and life safety generators will be equipped with a DPF, for which a control efficiency of 85% is assumed per CARB Executive Order DE-07-001-08. Per this executive order, CARB states that a DPF efficiency of 85% can be applied to emergency standby engines for approved engine models. The DPF for the critical backup generator model and life safety generator model is verified by CARB for model years 1996 through 2020 under Executive Order DE-07-001-08 to reduce emissions of diesel particulate matter by 85% or more (CARB, 2020a). The Executive Order specifically notes the DPF is designed for standby engines, which typically operate at various loads. Furthermore, the Executive Order notes that duty cycles of the standby engines which are approved under the Executive Order are reviewed to ensure compatibility DPF, meaning that the DPF is compatible at all duty loads. The CARB Executive Order and email correspondence with CARB is provided in Appendix A-2.

Emission factors for PM, NO_X, ROG and CO are provided by the proposed Miratech AT-IV technical specifications, which are provided in Appendix A-2. The emission factors for SO_2 are calculated with the assumption that the proposed generators will use ultra-low sulfur diesel fuel which contains 0.0015% sulfur as defined under 40 CFR 80, Subpart I. Per this assumption, the SO_2 emission factor from AP-42 Section 3.4, Table 3.4-1 applies.

Emission calculations for the critical backup generator NO_X emissions account for approximately 15 minutes of Tier 2 emission standards while the exhaust temperature heats up to the point the SCR can properly abate the NO_X emissions to Tier 4F standards. The daily testing and maintenance emissions assume 15 minutes of Tier 2 emission standards followed by an hour of Tier 4F emission standards based on the monthly reliability testing schedule. Over a 24-hour period, the monthly reliability testing would result in 5 hours of Tier 2 emission standards and 19 hours of Tier 4F emission standards. On an annual basis, the maximum testing and maintenance PTE would reflect 10 hours of Tier 2 emission standards and 40 hours of Tier 4F emission standards for each critical backup generator. It is anticipated that actual operations will require significantly fewer hours of testing and maintenance operation.

Operational GHG emissions are calculated using global warming potentials from Subpart A of 40 CFR 98, Table A-1 for CO_2, CH_4 and N_2O. Using emissions factors from Subpart C of 40 CFR 98 Tables C-1 and C-2, the equivalent emissions of CO_2 are calculated for CH_4 and N_2O to determine total potential (CO_2e emissions representing the GHG emissions for all generators (U.S. EPA, 2019a).[8]

Mobile and Building Operation Emissions. Emissions from mobile sources and general operation of the GDC buildings are calculated using the CalEEMod. Once Phase I and Phase II construction are complete, it is conservatively assumed that the Project may generate approximately 150 round trips daily to the GDC encompassing employee and visitor trips. Additionally, the GDC would generate building operational emissions from the use of consumer products, architectural coating such as interior painting, landscaping work, energy usage, solid waste disposal, and water usage. CalEEMod output files are included in Appendix A-4. The Project will use low VOC cleaning supplies as a design feature to reduce the operational emissions from the use of consumer products.

4.2.3 Project Operational Emissions

Table 4-5 summarizes estimated hourly, daily, and annual emissions for the operational emissions associated with the proposed Project. The hourly emissions are separated by generator type. The daily and annual emissions account for the maximum daily and annual hours of operation, respectively, per generator type and then combined into a total value. The detailed calculations are provided in Appendix A-3. It is expected that the daily and annual operational emissions in Table 4-5 and Table 4-6 encompass emissions from start-up and shutdown conditions, however the manufacturer does not provide speciated emission profiles for specific start-up and shutdown conditions.

[8] Emission factor for carbon dioxide obtained from 40 CFR 98, Table C–1 to Subpart C for Distillate Fuel Oil No. 2. Emission factors for methane and nitrous oxide obtained from 40 CFR 98, Table C–2 to Subpart C.

Table 4-5: Project Operational Emissions

Pollutant	Hourly Emissions			Daily Emissions	Annual Emissions
	Critical Backup Generators	Life Safety Generators	Security Building Generator	All Generators	All Generators
	Pounds per Hour	Pounds per Hour	Pounds per Hour	Pounds per Day	Tons per Year
PM/PM_{10}/$PM_{2.5}$	0.16	0.02	0.06	5.76	0.20
NO_X	10.6	8.36	1.69	469	12.0
ROG/VOC	1.12	0.16	0.04	31.7	1.95
CO	5.38	1.18	0.51	170	6.79
SO_2	0.044	0.011	0.01	1.58	0.06
					Metric Tons per Year
CO_2	For this analysis and comparison to thresholds, GHG emissions are calculated on an annual basis only.				4,491
CH_4					5
N_2O					11
Total CO_2e					4,506

Table 4-6: Project Operational Emissions Summary and Comparison to Significance Thresholds

Activity	Pollutant						
	PM_{10}	$PM_{2.5}$	CO	NO_x	ROG/ VOC	SO_2	CO_2e
	Pounds per Day (lb/day)						
Generator Operational Emissions	5.76	5.76	170	469	31.7	1.58	For this analysis and comparison to thresholds, GHG emissions are calculated on an annual basis only.
Mobile and Building Operational Emissions	1.69	0.63	6.56	4.37	10.7	0.03	
Total Project Operational Emissions	7.45	6.39	176	473	42.4	1.61	
Significance Threshold	***82***	***54***	[see note a]	***54***	***54***	***N/A***	
Significant Impact?	***No***	***No***	***No***	***Yes***	***No***	***No***	
Activity	**Tons per Year (tpy)**						**Metric Tons per Year (MT/yr)**
Generator Operational Emissions	0.20	0.20	6.79	12.0	1.95	0.06	4,506
Mobile and Building Operational Emissions	0.31	0.12	1.20	0.80	1.94	0.01	2,505
Offsets [b]	--	--	--	-12.0	--	--	--
Total Project Operational Emissions	0.51	032	7.99	0.80	3.89	0.07	7,011
Significance Thresholds	***15***	***10***	[see note a]	***10***	***10***	***N/A***	***10,000***
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***	***No***

a. CO is evaluated in this AQIA based on screening criteria identified in Table 4-1 for Local CO.

b. The Applicant will provide offsets at the ratio required per BAAQMD Rule 2-2-302.

The following should be noted with respect to Table 4-6 above:

1. Project average daily and maximum annual NO_x emissions exceed the BAAQMD CEQA thresholds of significance prior to mitigation.
2. Per the ambient air dispersion model and implementation of Mitigation Measure AQ-3 discussed in the Section 4.6 below, the concentration of NO_x as a result of the proposed Project is below the applicable NAAQS and CAAQS.
3. The emissions of NO_x from the generators will be mitigated through procurement of NO_x emission offsets.

With regards to the threshold of significance for local CO, it should be noted that the limited level of offsite mobile source activity during project operations would not increase peak hour intersection level of service and therefore would have an immeasurable effect on local CO levels at nearby roadway intersections. This is due to the minimal number of employees and visitors at the site. Therefore, local CO emissions are determined to be less than significant and are not further assessed in other sections of this report.

BAAQMD sets an odor threshold of significance where if there are a maximum of five odor complaints per year averaged over three years it will result in significant adverse air quality impacts. The Project is not considered a typical odor producing source such as a wastewater (sewage) treatment plant, landfill, composting facility, refinery, or chemical plant. As such, it is assumed that the Project will not exceed the identified threshold of significance for odor.

Impacts from toxic air contaminants and comparison to the BAAQMD thresholds of significance for Risks and Hazards are discussed in Section 4.7 below.

4.3 Air Dispersion Modeling Methodology

This section presents the modeling methods used prior to evaluating potential air quality impacts and health risks associated with the proposed Project's construction and operational phase. Each model incorporates the same components and inputs described below. AERMOD dispersion modeling is used in this AQIA to perform a load screening analysis and comparison to AAQS standards based on the operation of equipment associated with the Project. The concentrations of pollutants from the proposed Project for both the construction phase and operational phase with the incorporation of background concentration data do not exceed the NAAQS or CAAQS except for PM_{10} for the 24-hour and annual averaging period. This is addressed further in Section 4.5.4 and Section 4.6.4.

4.3.1 Air Dispersion Model

The air quality analysis is conducted according to U.S. EPA guidelines. The AERMOD model (version 19191) is used with Trinity Consultants' (Trinity's) *BREEZE™ AERMOD Suite* software to calculate ground-level concentrations using the regulatory default parameters, except as otherwise specified in this section. All model runs for this analysis use the BREEZE-developed parallel processing executable. This executable retains all of the U.S. EPA AERMOD code but adds code to allow AERMOD to run on multiple processor cores simultaneously, producing results faster.

4.3.2 Coordinate System

The locations of emission sources and receptors are represented in the Universal Transverse Mercator (UTM) coordinate system using the World Geodetic System (WGS84) projection. The UTM grid divides the world into coordinates that are measured in north meters (measured from the equator) and east meters (measured from the central meridian of a particular zone, which is set at 500 km).

4.3.3 Terrain Elevations

The terrain elevation for each receptor and emission source is determined using the United States Geological Survey (USGS) 1/3 arc-second National Elevation Dataset (NED). The data, obtained from the USGS, have terrain elevations at 10-meter intervals. The terrain height for each individual modeled receptor and emission source is determined by assigning the interpolated height from the digital terrain elevations surrounding each modeled receptor or emission source.

The AERMOD terrain preprocessor, AERMAP (version 18081), is used to compute the hill height scales for each receptor. AERMAP searches all NED data points for the terrain height and location that has the greatest influence on each receptor to determine the hill height scale for that receptor. AERMOD then uses the hill height scale in order to select the correct critical dividing streamline and concentration algorithm for each receptor.

4.3.4 Meteorological Data

Meteorological data is provided by BAAQMD for the calendar years 2013 through 2017. Surface data is from the San Martin Airport (Station ID 23293; elevation of 85.3 meters); upper air data is from the Oakland International Airport (Station ID 23230). The closest meteorological stations are selected for surface and upper air data. The meteorological data was not processed by BAAQMD with the default adj_u* option as site-specific friction data was available and incorporated into the analysis.

The Applicant requested more recent meteorological data from BAAQMD and was informed the 2013-2017 meteorological data is considered the most current data for modeling purposes formally approved by BAAQMD as of February 2021. The Applicant also evaluated processing 2018-2020 meteorological data independently from BAAQMD and determined that significant portions of these data were missing. For each year 2018-2020 the missing data exceeded the EPA threshold of 10% with between 19.4% and 53.8% of the raw surface data missing. It is also anticipated that meteorological data on a year-to-year basis would not change in the same manner as background concentrations of criteria pollutants. As such, the 2013-2017 meteorological data remains the most appropriate data for use.

4.3.5 Building Downwash

Emission sources' proximity to nearby structures creates the potential for downwash of the emission plume and elevated ground-level concentrations. Off-site buildings to the north and northwest of the facility fenceline are conservatively included to account for potential building downwash effects. Off-site building dimensions are estimated using Google Earth measurements. On-site building dimensions were determined from the facility site plans provided in Appendix A-1 and generator enclosure dimensions are determined from the equipment specifications in Appendix A-2.

The Building Profile Input Program (BPIP) with Plume Rise Model Enhancements (PRIME) (version 04274) is used to determine the building downwash characteristics for each stack in 10-degree intervals. The PRIME version of BPIP features enhanced plume dispersion coefficients due to turbulent wake and reduced plume rise caused by a combination of the descending streamlines in the lee of the building and the increased entrainment in the wake.

4.3.6 Receptors

According to U.S. EPA regulations, "ambient air" is defined as the portion of the atmosphere external to the source, to which the public has access. The dispersion modeling concentrations are determined for ambient air locations (i.e., receptors). The Applicant's property boundary is the ambient air boundary for the modeling demonstrations. The following receptors are used to ensure ambient air is protected:

- Boundary receptors with 20 meter (m) spacing; and
- A variable density receptor grid with 20 m intervals from the facility center to 500 m, 50 m intervals to 1,000 m, 100 m intervals to 2,000 m, 200 m intervals to 5,000 m, and 500 m intervals to 10,000 m.

For the air dispersion modeling analysis demonstrating compliance with the AAQS, receptors are set at ground level. For the health risk analysis, receptors are set at a flagpole height of 1.5 meters to conservatively represent an average human's breathing height as recommended by the BAAQMD Recommended Methods for Screening and Modeling Local Risks and Hazards (BAAQMD, 2011).

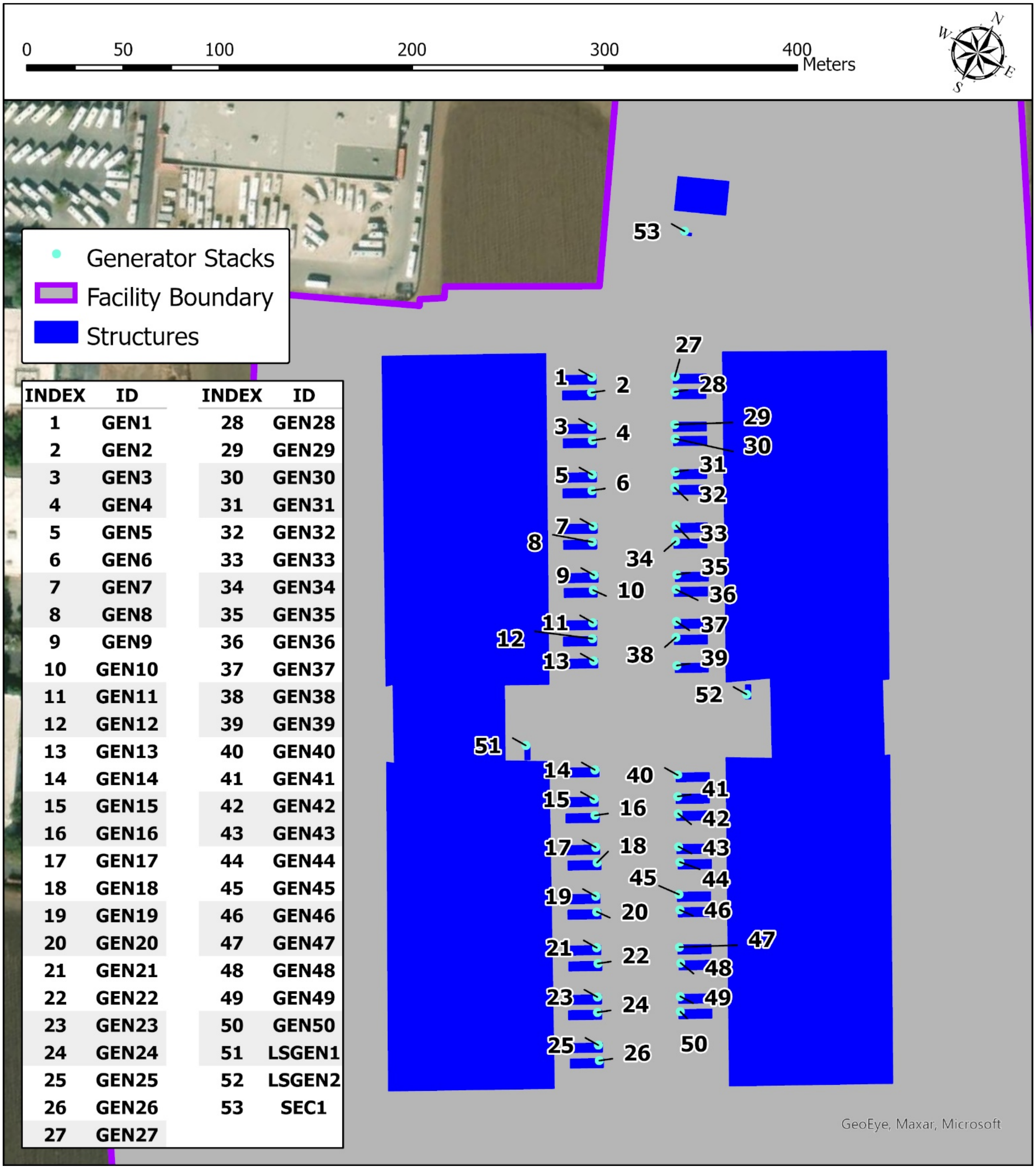
4.4 Generator Load Screening Analysis

The proposed generators will operate during the operational phase of the project at varying loads for purposes of maintenance and testing, and the pollutant emission rates and stack parameters (specifically exhaust temperature and flow rate) will differ for each load. The generators will not all operate simultaneously on a short-term basis for routine maintenance and testing activities conducted pursuant to the manufacturer specifications. Therefore, a load screening analysis was completed to determine the worst-case load and generator for each pollutant and short-term averaging period (e.g. 1-hour, 3-hour, 8-hour, 24-hour) for use in Federal and State AAQS modeling demonstrations. The goal of this analysis is to identify a single generator operating scenario which conservatively represents any potential combinations of generators which could operate during each pollutant averaging period (e.g. assuming a single worst-case engine operated continuously at a single load over the 8-hour averaging period instead of a more realistic scenario of various engines operating at various loads for short periods of time over the 8-hour averaging period).

The analysis implements one model (herein referred to as the "General Screening Model") for all pollutant and short-term averaging standards except for 1-hour NO_2 which is further discussed in Section 4.4.3. For CO, SO_2, PM_{10}, and $PM_{2.5}$, the worst-case generator/load combinations are used to develop the AAQS models described further in Section 4.6.

4.4.1 Emission Sources

AERMOD allows for emission units to be represented as point, volume, area, or road sources. The modeled generators are considered point sources and are modeled as such. There are 253 point sources in the General Screening Model, including five point sources for each of the 50 critical backup generators (one source for each load scenario) and one point source for each of the two life safety generators and security generator. The point sources at each critical backup generator represent 10%, 25%, 50%, 75%, and 100% loads using the load-specific stack parameters per manufacturer specification sheets. The point sources at each life safety generator and security generator represent 100% load. Refer to Appendix A-5 for a summary of emission unit modeling parameters. Figure 4-1 demonstrates the emission source layout.



INDEX	ID	INDEX	ID
1	GEN1	28	GEN28
2	GEN2	29	GEN29
3	GEN3	30	GEN30
4	GEN4	31	GEN31
5	GEN5	32	GEN32
6	GEN6	33	GEN33
7	GEN7	34	GEN34
8	GEN8	35	GEN35
9	GEN9	36	GEN36
10	GEN10	37	GEN37
11	GEN11	38	GEN38
12	GEN12	39	GEN39
13	GEN13	40	GEN40
14	GEN14	41	GEN41
15	GEN15	42	GEN42
16	GEN16	43	GEN43
17	GEN17	44	GEN44
18	GEN18	45	GEN45
19	GEN19	46	GEN46
20	GEN20	47	GEN47
21	GEN21	48	GEN48
22	GEN22	49	GEN49
23	GEN23	50	GEN50
24	GEN24	51	LSGEN1
25	GEN25	52	LSGEN2
26	GEN26	53	SEC1
27	GEN27		

Figure 4-1: Layout of Modeled Emission Sources for the Proposed Project

The stack parameters for each critical backup generator load and the 100% load for the life safety generators and the security generator are summarized in Table 4-7.

Table 4-7: Load Screening Analysis Generator Parameters

Generator Category	Critical Backup Generators					Life Safety Generators	Security Generator
Operating Scenario	**A**	**B**	**C**	**D**	**E**	**F**	**G**
Load (%)	**100**	**75**	**50**	**25**	**10**	**100**	**100**
Horsepower (bhp) [a]	3633	2760	1889	1029	497	900	280
Stack temperature (F) [a]	915.2	858.5	850.7	831.1	647.3	994.3	948
Stack flow rate (cfm) [a]	19,579	15,893	12,413	7,845	4,800	4,785.1	1,229.0
Stack velocity (m/s) [b]	26.98	21.90	17.10	10.81	6.61	30.95	24.40
PM Emission Factor (g/bhp-hr) [c]	2.00E-02	2.00E-02	2.00E-02	2.00E-02	2.00E-02	0.012	0.089
Unabated NO_x Emission Factor (g/bhp-hr) [d]	5.32	4.3	3.12	2.92	5.39	4.21	2.74
ROG Emission Factor (g/bhp-hr) [d]	0.1	0.14	0.22	0.3	0.67	0.082	0.060
CO Emission Factor (g/bhp-hr) [d]	0.42	0.26	0.32	0.82	2.37	0.60	0.82
SO_2 Emission Factor (g/bhp-hr) [e]	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055	0.0055
Abated NO_x Emission Factor (g/bhp-hr) [f]	0.5	0.5	0.5	0.5	0.5	N/A	N/A
PM Short-term Emission Rate (g/s/generator) [g]	2.018E-02	1.533E-02	1.049E-02	5.717E-03	2.761E-03	3.08E-03	6.96E-03
NO_x Short-term Emission Rate (g/s/generator) [h]	1.721	--	1.637	--	--	1.053	0.213
ROG Short-term Emission Rate (g/s/generator) [g]	0.101	0.107	0.115	0.0858	0.0925	0.0205	4.64E-03
CO Short-term Emission Rate (g/s/generator) [g]	0.424	0.199	0.168	0.234	0.327	0.149	0.0638
SO_2 Short-term Emission Rate (g/s/generator) [g]	5.55E-03	4.22E-03	2.89E-03	1.57E-03	7.60E-04	1.38E-03	4.281E-04

a. Operating Scenarios A through E represent varying load operation of the critical backup generators. Operating Scenario F represents the life safety generator operation at 100% load. Operating Scenario G represents the security generator operation at 100% load.
Critical backup generator operating parameters come from manufacturer performance data sheet titled "Performance Data [EM1894]", dated May 14, 2020, General Performance Data.
Life safety generator horsepower comes from the South Coast AQMD Certified ICE-Emergency Generators spreadsheet updated 7/31/2020 for a Caterpillar C-18 600kWe engine (SCAQMD, 2020). Life safety generator operating parameters come from the manufacturer's generator specification sheet. Listed parameters are assumed to correspond to 100% operating load.
Security Generator horsepower and operating parameters provided by Caterpillar dealership contact Bob Shepherd (Quinn Group, Inc. Manager) on 9/2/2020 for Perkins/Caterpillar Model 1106D-E70TA (C7.1) for 175 kW generators. Listed parameters are assumed to correspond to 100% operating load.

b. Stack velocity (m/s) = [Stack flow rate (cfm)] / [Stack area (ft^2)] * [0.3048 m/ft] / [60 sec/min]. The stack diameter is 26 inches for all critical emergency generators. The stack diameter is 12 inches for the life safety generators. The stack diameter is 6.85 inches for the security generator.

c. Critical backup generator PM emission factors conservatively reflect the SCR abatement package guarantee for all loads per the Miratech specification sheet. Life safety generator and security building generator PM emission factors per the U.S. EPA engine family certification levels for the respective engine families (U.S. EPA, 2020c).

d. Critical backup generator emission factors come from manufacturer performance data sheet titled "Performance Data [EM1894]", dated May 14, 2020, Emissions Data section: Rated Speed Nominal Data: 1800 rpm.
Life safety generator emission factors come from the U.S. EPA engine family certification levels for engine family LCPXL18.1NYS (U.S. EPA, 2020c).
Security generator emission factors come from the U.S. EPA engine family certification levels for engine family LPKXL07.0PW1 (U.S. EPA, 2020c).

e. The proposed generators will use ultra-low sulfur diesel fuel which contains 0.0015% sulfur as defined under 40 CFR 80, Subpart I. The SO_2 emission factor is from AP-42 Section 3.4, Table 3.4-1 (10/96).

f. Critical backup generator Tier 4F NO_x emission factor per the Miratech specification sheet.

g. Short-term Emission Rate (g/s/generator) = [Pollutant Emission Factor (g/bhp-hr)] * [Engine Horsepower (bhp)] / [3,600 s/hr].

h. Critical backup generator NO_x Short-term emissions at 100% load (g/s/engine) = [0.25 * Tier 2 Emission factor + 0.75 * Tier 4F Emission Factor (g/bhp-hr)] * [Engine Horsepower (bhp)] / [3,600 s/hr].

The short-term NO_x emissions account for 15 minutes of Tier 2 emission standards while the exhaust temperature warms up such that the SCR can properly abate NO_x emissions.

Critical backup generator NO_x Short-term emissions at 50% load (g/s/engine) = [Tier 2 Emission factor (g/bhp-hr)] * [Engine Horsepower (bhp)] / [3,600 s/hr].

The short-term NO_x emissions at 50% load (typical load for monthly readiness testing) conservatively assume Tier 2 emission standards for the entire hour to demonstrate worst-case scenario in which the exhaust temperature does not heat up sufficiently for the SCR to properly operate. It is expected that the SCR will properly operate at 50% load during actual operations. The 75%, 25%, and 10% loads are omitted from short-term dispersion modeling as emissions from these loads will be less than that of the modeled 100% Tier 2/Tier 4F and 50% Tier 2 emission standard scenarios.

4.4.2 Emission Rates

The General Screening Model is run with a point source unit emission rate of 1 gram per second (g/s) for "Other" pollutant as reflected in the load screening analysis model inputs included in Appendix A-5.[9] The pollutant-specific emission rates are then applied to the unitized model results.

The Refined 1-Hour NO_2 Analysis as discussed in Section 4.4.3 uses the NO_X short-term emission rates directly for the corresponding engine and load in g/s instead of utilizing the unitized 1 g/s emission rate as the model involves a single pollutant and averaging period.

4.4.3 Refined Analysis for 1-Hour NO_2 Standards

For comparison to the 1-hour NO_2 NAAQS and CAAQS, each generator at 50% and 100% operating load is modeled using the Plume Volume Molar Ratio Method (PVMRM) per U.S. EPA's guidelines (U.S. EPA, 2017). The previously submitted AQIA's refined 1-hour NO_2 analysis evaluated each generator at each applicable load, and the results determined that the worst-case situations consistently occur at 100% load. The 50% load is modeled to most closely reflect the monthly maintenance testing, and conservatively assumes Tier 2 emission standards for the full hour. For modeling the 100% load scenarios, 15 minutes of Tier 2 emission standards and 45 minutes of Tier 4F emission standards are assumed for each hour to account for the time necessary for the exhaust temperature to heat up such that the SCR abates NO_X emissions. The in-stack ratio (ISR) is set at 0.1 based on data presented in the U.S. EPA's NO_2/NO_X ISR database for diesel/kerosine-fired reciprocating internal combustion engines (U.S. EPA, 2020d). Emissions modeled in the refined analysis reflect the emission rates listed in Table 4-7 for each applicable load and generator and are not annualized as is generally the standard practice for modeling intermittent emission sources.[10]

As part of the PVMRM technique, 2013-2017 hourly ozone data from local monitoring stations is included in the modeling analysis to refine the NO_X to NO_2 conversion rate.[11] The 2013-2017 hourly ozone data is used to match the 2013-2017 meteorological data used. Ozone data from the monitoring station at the San

[9] AERMOD allows the user to select specific pollutants to implement specific averaging methodologies and chemical reaction options. Thus, "Other" is utilized to make the analysis generic for all pollutants.
[10] EPA guidance recommends annualizing emissions from intermittent sources, such as emergency generators, to demonstrate compliance with the 1-hour NO_2 and SO_2 NAAQS (U.S. EPA, 2011). However, as the Applicant understands that the CEC does not accept this guidance, the 1-hr SO_2 and NO_2 emission rates are modeled as maximum hourly emission rates.
[11] The time period of 2013-2017 was selected for the ozone data to be consistent with the meteorological data (a requirement to run PVMRM).

Martin monitoring station is utilized, then for hours in which ozone data at this station was not available, data from the 158 East Jackson St., San Jose monitoring station is utilized. Missing hourly ozone data is substituted as follows: for one to two consecutive hours of missing values, the missing value is replaced by the greatest preceding or succeeding value. For three or more consecutive hours of missing hourly values, the maximum value occurring from the same month and hour across the five years of ozone data is used.

Seasonal hourly (SEASHR) NO_2 background data matching the AAQS format are incorporated. Hourly 2017-2019 NO_2 data is from the 1007 Knox Ave., San Jose monitoring station is used. A significant portion of the 2020 NO_2 hourly data is missing from the San Jose monitoring station, thus the seasonal hourly background data is limited to 2017-2019 data. Missing hourly data is replaced in the same manner as for hourly ozone data previously described. For NAAQS models, hourly data is represented based on the 98th percentile for each season and hour. The 98th percentile is represented using the 3rd-highest value for each season and hour as consistent with EPA Guidance (U.S. EPA, 2011). For CAAQS models, the maximum SEASHR data is used as consistent with the format of the standard.

Because PVMRM is dependent on all sources represented in the model, individual models for each generator, load, and standard (CAAQS/NAAQS) are run to determine the worst-case scenario for comparison to the 1-hour NO_2 NAAQS and CAAQS. A total of 103 models are run to estimate the 1-hour NO_2 NAAQS impacts, and another 103 models are run to estimate the 1-hour NO_2 CAAQS impacts. Further description of the individual emission sources is provided in Sections 4.4.1 and 4.4.2. The results of the 206 models are summarized in Appendix A-6.

4.4.4 Load Screening Analysis Model Results

The General Screening Model results are scaled to the emission rates provided for each pollutant and generator load per the critical backup generators' manufacturer performance specifications and life safety/security generators' EPA engine family certification levels. The generator which contributes the maximum ambient concentration after the scaling process for each pollutant/averaging period combination is determined to be the worst-case engine and is then selected for the short-term Federal and/or State AAQS modeling demonstration. A detailed summary of the worst-case generator at the worst-case load for each criteria pollutant and AAQS averaging period based on these scaled results is included in Table 4-8. The location of the worst-case generators is depicted in Figure 4-1. AERMOD dispersion model outputs for both the General Screening Model and the refined 1-hour NO_2 analysis are included in Appendix A-6.

Table 4-8: Load Screening Analysis Model Worst-Case Scenario Results

Pollutant	Averaging Period	Worst-Case Generator	Worst-Case Load	Pollutant-Specific Emission Rate (g/s/generator)
NO_2	1-hour CAAQS	SEC1	100%	2.134E-01
	1-hour NAAQS	SEC1G [a]	100%	2.134E-01
CO	1-hour	GEN11	10%	3.272E-01
	8-hour	GEN50	10%	3.272E-01
SO_2	1-hour	GEN11	100%	5.555E-03
	3-hour	GEN30	100%	5.555E-03
	24-hour	GEN33	100%	5.555E-03
PM_{10}	24-hour	SEC1	100%	6.960E-03
$PM_{2.5}$	24-hour	SEC1	100%	6.960E-03

a. For 1-hour NO_2 NAAQS, additional modeling implementing hourly restrictions on the worst-case hours for SEC1 were necessary to demonstrate compliance. After implementing the hourly restrictions described in Mitigation Measure AQ-3, SEC1G was determined to be the worst-case engine. The hourly restrictions are conservatively not implemented in the models for other pollutants and standards.

4.5 Construction Phase Air Dispersion Modeling Analysis

Ambient air quality standards define clean air and protect public health, including the health of sensitive populations such as children and the elderly. Therefore, modeling in comparison to the NAAQS and CAAQS provides insight into the impact of the proposed Project on public health and clean air in the area surrounding the proposed Project area. All construction AAQS modeling represents the worst-case emissions by using the maximum emission rates per pollutant across all years of construction operation as represented in one year, which is chosen as 2023 during which the Phase II exterior building is constructed and the Phase I building is operational.

4.5.1 Emission Sources

AERMOD allows for emission units to be represented as point, volume, area, or road sources. Emissions from the construction equipment tailpipes and fugitive dust from soil disturbance (material handling, roads, and surfaces) are represented as volume sources. The source parameters associated with the construction volume sources are provided in Table 4-9 below.

Table 4-9: Project Construction Air Dispersion Modeling Volume Source Input Parameters

Source Description	Model ID	Release Height (m)	Initial Lateral Dimension (m)	Initial Vertical Dimension (m)
Volume Source: Construction Equipment Tailpipe Emissions	EXHAUST	1.12	97.23	0.52
Volume Source: Fugitive Dust from Soil Disturbance (material handling and road dust entrainment)	FUGDUST	1.12	97.23	0.52

Both volume sources are located over the proposed facility buildings to represent the general area construction would occur. The volume source type is representative of the construction emission sources as they are fugitive in nature and may occur above ground level or with a vertical plume rise. The release heights of EXHAUST and FUGDUST are based on the midpoint height of the weighted average height of the construction equipment. The weighted average height is developed using dimensions of the equipment type and the anticipated quantity of the equipment type. Most emissions from FUGDUST are from material handling operations as opposed to road dust entrainment, thus the initial and lateral dimensions are conservatively represented similarly to EXHAUST as opposed to haul road volume source dimensions. Construction equipment types include, but are not limited to, concrete saws, crushers, excavators, dozers, tractors, graders, scrapers, and cranes. The initial lateral and vertical dimensions are estimated using the area encompassing the two proposed construction phases and dividing by a factor of 4.3 and 2.15, respectively, as consistent with AERMOD user guidance (U.S. EPA, 2019b).

Short-term averaging period models only represent the construction volume sources while long-term averaging period models represent both the construction volume sources and the generators associated with the Phase I building (GEN1 through GEN26, LSGEN1) and the security generator (SEC1) (collectively referred to as the Phase I generators). Generators are not included in short-term averaging period models because the Applicant will implement Mitigation Measure AQ-2 to comply with the 1-hour NO_2 CAAQS and NAAQS limits, as further described in Section 4.5.4.

4.5.2 Emission Rates

Emission rates for the construction emission sources reflect the maximum annual and daily mitigated emissions as calculated using CalEEMod. All construction AAQS modeling represents the worst-case emissions by using the maximum emission rates per pollutant across all years of construction operation as represented in one year, which is 2023 during which the Phase II building is constructed. The CalEEMod calculations assume 8 hours of construction equipment operation during weekdays, as will be the typical operating schedule. The dispersion modeling reflects that construction activities will occur during weekdays, generally for 8-hours per day and in accordance with local construction restrictions. Construction equipment tailpipe emissions include NO_X, CO, SO_2, PM_{10}, and $PM_{2.5}$. For the 1-hour NO_2 NAAQS and CAAQS models, emissions are represented using NO_2 PVMRM with the same ozone and background data described in Section 4.4.3, while all other pollutants are represented using the respective pollutant's "Concentration Only" method. Construction equipment material handling fugitive particulate emissions (i.e. scooping/dumping of soil) are included with Fugitive PM_{10} and Fugitive $PM_{2.5}$.

Emission rates for the Phase I generators represented in the long-term averaging period models are consistent with those used for the operational phase dispersion modeling further described in Section 4.6.2.

4.5.3 Background Concentration

Background concentration data at the ambient air monitoring station in closest proximity to the Project is determined as described in Section 3.2.3 of this AQIA.

As shown in Table 4-10, the background concentrations alone of PM_{10} at certain averaging periods exceed the AAQS. Therefore, any additional Project emissions of PM_{10} at the same averaging periods would also inherently exceed the AAQS, regardless of the magnitude of potential emissions from the proposed Project.

4.5.4 Ambient Air Dispersion Model Results

The Applicant has chosen to model the worst potential impacts from the construction phase using several conservative assumptions, such as the following:

1. The maximum potential emissions are represented for all dispersion modeling. The maximum potential emissions are from construction operations between 2023 and 2024. Construction of the Phase II building exterior is anticipated to only occur during 2023.
2. Because Phase I will be operational by 2023, annual generator emissions are included to represent operational and construction impacts combined.
3. Volume source location is centrally located between the Phase I and Phase II buildings during the construction of the Phase II building. The Phase II building is located on the east side of the property while the majority of receptors are located to the west of the property boundary. Therefore, emissions are conservatively represented as being located closer to the western receptors than actual construction operations during the worst-case construction emissions time frame.
4. Volume source initial vertical dimensions were conservatively chosen to be closer to the ground thus reducing potential dispersion and resulting in increased ground level concentrations.
5. BAAQMD guidance recommends removing the offsite emissions beyond 1,000 feet of the project boundary.[12] The modeled emission rates did not exclude the offsite emissions beyond 1,000 feet of the project boundary, and as such, are conservative representations of the emissions occurring at the Facility.

The total concentrations of PM_{10} from the background concentrations and construction emissions exceed the 24-hour CAAQS and the annual CAAQS. However, for each of these exceedances, the concentrations of pollutant emissions resulting from the Project are below the applicable Class II Significant Impact Levels (SIL) thresholds of 5 $\mu g/m^3$ for 24-hour impacts and 1 $\mu g/m^3$ for annual impacts, which represent the concentrations of criteria pollutants in the ambient air that are considered inconsequential in comparison to the NAAQS (U.S. EPA, 2018). As stated previously, the background concentrations for each of these cases already exceed the CAAQS and thus despite the comparably minimal Project contributions, the CAAQS is exceeded. As demonstrated in Table 4-4, the construction PM_{10} emissions from the proposed Project are well under the BAAQMD CEQA thresholds of significance. Due to these circumstances, the Applicant does not consider the Project emissions as significantly impacting the state or federal air quality plans.

The following should be noted with respect to Table 4-10:

[12] Per e-mail correspondence with Areana Flores (BAAQMD) and Emily Wen (Trinity) on January 7, 2020.

- The background concentration data for PM_{10} is above the 24-hour and annual CAAQS and the background concentration data for $PM_{2.5}$ is above the 24-hour NAAQS and annual CAAQS without including concentrations from the proposed Project.
- Therefore, the concentration of PM_{10} is above the 24-hour and annual CAAQS when cumulated with background concentration data available from BAAQMD ambient air monitors and it can be deduced that the background concentrations of PM_{10} are responsible for the proposed Project's total concentration exceeding the CAAQS for PM_{10}.
- Further, the concentrations of PM_{10} resulting from the proposed Project alone are significantly below the CAAQS and the 24-hour and annual concentrations of PM_{10} resulting from the proposed Project are below the PM_{10} 24-hour and annual SILs.
- Per the BAAQMD CEQA thresholds of significance, PM_{10} emissions are much lower than the significance thresholds, as discussed in Section 4.2.1.

To comply with the 1-hour NO_2 CAAQS and NAAQS, the Applicant is implementing Mitigation Measure AQ-2 to reduce NO_X impacts below the threshold, as addressed in detail below.

Mitigation Measure AQ-2. Limit generator maintenance and testing such that generator maintenance and testing operation does not occur during the same hour as the Phase II building exterior construction equipment.

Table 4-10: Construction Phase Ambient Air Quality Dispersion Model Results and Comparison to AAQS

Pollutant	Averaging Period	Ambient Air Quality Standards		Construction Concentration (µg/m³)	Background Concentration (µg/m³)	Total Concentration (µg/m³)	Comparison to Ambient Air Quality Standards		If AAQS Exceeded, Comparison to SIL [d]
		CAAQS [b] (µg/m³)	NAAQS [c] (µg/m³)				CAAQS Below Threshold?	NAAQS Below Threshold?	Below Threshold?
NO_2	1-hour [a]	339	--	--	--	238	Yes	--	--
		--	188	--	--	149	--	Yes	--
	Annual	57	--	6	32	35.7	Yes	--	--
		--	100	6	30	34.4	--	Yes	--
CO	1-hour	23,000	--	259	3,208	3,466	Yes	--	--
		--	40,000	205	3,093	3,298	--	Yes	--
	8-hour	10,000	--	66	2,635	2,701	Yes	--	--
		--	10,000	58	2,635	2,692	--	Yes	--
SO_2	1-hour	655	--	0.56	38.0	38.6	Yes	--	--
		--	196	0.35	7.4	7.8	--	Yes	--
	3-hour	--	1,300	0.27	7.3	7.6	--	Yes	--
	24-hour	105	--	0.09	3.9	4.0	Yes	--	--
	Annual	--	80	0.016	0.49	0.5	--	Yes	--
PM_{10}	24-hour	50	--	4	121	124.9	No	--	Yes
		--	150	3	80	83.5	--	Yes	--
	Annual	20	--	0.48	23	23.6	No	--	Yes
$PM_{2.5}$	24-hour	--	35	1.19	27	28	--	Yes	--
	Annual	--	12	0.270	7.8	8.0	--	Yes	--
		12	--	0.276	6.4	6.6	Yes	--	--

a. For 1-hr NO_2 impacts, the total concentration reflects the highest modeled 1-hour NO_2 concentration (Project concentration) combined with seasonal hour of day NO_2 background concentrations.

b. The CAAQS are codified in the California Code of Regulations Title 17 § 70200 Table of Standards (CARB, 2008b).

c. The NAAQS are codified in 40 CFR Part 50, National Primary and Secondary Ambient Air Quality Standards (U.S. EPA, 2020e).

d. For PM_{10}, the SILs are 5 µg/m³ for 24-hour impacts and 1 µg/m³ for annual impacts. Class II SILs are codified in 40 CFR Section 51.165(b)(2) (U.S. EPA, 1986).

4.6 Operational Phase Air Dispersion Modeling Analysis

In addition to construction phase air dispersion modeling, operational phase air dispersion modeling was also conducted.

4.6.1 Emission Sources

Air dispersion models for averaging periods of less than one year (short-term) incorporate the representative worst-case generator as determined per the load screening analysis. Stack parameters correspond to the representative, worst-case load identified in the load screening analysis.

Air dispersion models for annual averaging periods include all 50 critical backup generators, the two life safety generators, and one security generator. Stack parameters for the critical backup generators, such as temperature and flow rate, are conservatively set at 10% load, representing the lowest temperature and flow rate. Low temperatures and low flow rates are considered to be most conservative because cooler, slow-moving plumes are less ideal for dispersion and tend to concentrate closer to the Project area, resulting in higher concentrations. In contrast, hot and fast-moving plumes will disperse more quickly and create lower concentrations around the facility.

4.6.2 Emission Rates

The AERMOD dispersion model is run with different emission rates dependent upon the averaging period of the model. For averaging periods of less than one year (short-term), the emissions factors from the manufacturer specification sheets for the worst-case representative generator load are converted to a g/s equivalent value. This equivalent value is input as the emission rate into the AERMOD dispersion model. The worst-case emission rates for each short-term AAQS are summarized in Table 4-7.

Operational schedules will be limited to one generator at a time for routine maintenance and testing activities conducted pursuant to manufacturer specifications. The short-term AAQS models represent the most conservative emissions scenario in which the worst-case load/generator operates continuously over the entire averaging period.

For annual averaging periods, the annual PTE calculated in the emission calculations in Section 4.2.3 per generator was converted to a g/s equivalent value for the critical backup generators and life safety generators.[13] These equivalent values are input as the emission rate for the respective type of generator into the AERMOD dispersion model.

4.6.3 Background Concentration

Background concentration data at the ambient air monitoring station in closest proximity to the Project is determined as described in Section 3.2.3 of this AQIA.

As shown in Table 4-11, the background concentrations alone of PM_{10} at certain averaging periods exceed the AAQS. Therefore, any additional Project emissions of PM_{10} at the same averaging periods would also inherently exceed the AAQS, regardless of the magnitude of potential emissions from the proposed Project.

[13] This emission rate conversion from annual PTE in tpy to g/s is based on 8,760 hours per year of operation as AERMOD will estimate annual impacts from 8,760 hours per year of operation.

4.6.4 Ambient Air Dispersion Model Results

The representative worst-case generators from the load screening analysis model were modeled and the resulting concentrations were compared to the NAAQS and CAAQS for each pollutant at each applicable averaging period. A detailed summary of the results and the comparison to NAAQS and CAAQS is included in Table 4-9. As discussed in Section 4.5.4, the total concentrations of PM_{10} from the background concentrations and Project emissions exceed the 24-hour CAAQS and the annual CAAQS. However, for each of these exceedances, the concentrations of pollutant emissions resulting from the Project are below the applicable Class II Significant Impact Levels (SIL) thresholds of 5 $\mu g/m^3$ for 24-hour impacts and 1 $\mu g/m^3$ for annual impacts, which represent the concentrations of criteria pollutants in the ambient air that are considered inconsequential in comparison to the NAAQS (U.S. EPA, 2018). As stated previously, the background concentrations for each of these cases already exceed the CAAQS and thus despite the comparably minimal Project contributions, the CAAQS is exceeded. As demonstrated in Table 4-6, the operational PM_{10} emissions from the proposed Project are well under the BAAQMD CEQA thresholds of significance. Due to these circumstances, the Applicant does not consider the Project emissions as significantly impacting the state or federal air quality plans.

The following should be noted with respect to Table 4-9:

- The background concentration data for PM_{10} is above the 24-hour and annual CAAQS and the background concentration data for $PM_{2.5}$ is above the 24-hour NAAQS and annual CAAQS without including concentrations from the proposed Project.
- Therefore, the concentration of PM_{10} is above the 24-hour and annual CAAQS when cumulated with background concentration data available from BAAQMD ambient air monitors and it can be deduced that the background concentrations of PM_{10} are responsible for the proposed Project's total concentration exceeding the CAAQS for PM_{10}.
- Further, the concentrations of PM_{10} resulting from the proposed Project alone are significantly below the CAAQS and the 24-hour and annual concentrations of PM_{10} resulting from the proposed Project are below the PM_{10} 24-hour and annual SILs.
- Per the BAAQMD CEQA thresholds of significance, PM_{10} emissions are much lower than the significance thresholds, as discussed in Section 4.2.3.

To comply with the 1-hour NO_2 NAAQS, the Applicant is implementing Mitigation Measure AQ-3 to reduce NO_X impacts below the threshold, as addressed in detail below.

Mitigation Measure AQ-3. Limit operational schedule for SEC1.

The Applicant shall not conduct maintenance and testing for the security building generator from 4:00 PM to 7:00 AM to comply with the 1-hour NO_2 NAAQS.

Table 4-11: Operation Phase Ambient Air Quality Dispersion Model Results and Comparison to AAQS

Pollutant	Averaging Period	Ambient Air Quality Standards		Project Concentration (µg/m³)	Background Concentration (µg/m³)	Total Concentration (µg/m³)	Comparison to Ambient Air Quality Standards		If AAQS Exceeded, Comparison to SIL [d]
		CAAQS [b] (µg/m³)	NAAQS [c] (µg/m³)				CAAQS Below Threshold?	NAAQS Below Threshold?	Below Threshold?
NO_2	1-hour [a]	339	--	--	--	338	Yes	--	--
		--	188	--	--	183	--	Yes	--
	Annual	57	--	3	32	35	Yes	--	--
		--	100	3	30	33	--	Yes	--
CO	1-hour	23,000	--	117	3,208	3,324	Yes	--	--
		--	40,000	104	3,093	3,197	--	Yes	--
	8-hour	10,000	--	46	2,635	2,680	Yes	--	--
		--	10,000	32	2,635	2,667	--	Yes	--
SO_2	1-hour	655	--	1.05	38.0	39.0	Yes	--	--
		--	196	0.68	7.4	8.1	--	Yes	--
	3-hour	--	1,300	0.41	7.3	7.7	--	Yes	--
	24-hour	105	--	0.25	3.9	4.2	Yes	--	--
	Annual	--	80	0.014	0.49	0.5	--	Yes	--
PM_{10}	24-hour	50	--	2.6	121	124	No	--	Yes
		--	150	2.4	80	83	--	Yes	--
	Annual	20	--	0.059	23	23	No	--	Yes
$PM_{2.5}$	24-hour	--	35	1.66	27	29	--	Yes	--
	Annual	--	12	0.051	7.8	7.8	--	Yes	--
		12	--	0.059	6.4	6.4	Yes	--	--

a. For CAAQS 1-hr NO_2 impacts, the total concentration reflects the highest modeled 1-hour NO_2 concentration (Project concentration) combined with seasonal hour of day NO_2 background concentrations. The NAAQS 1-hr NO_2 impact reflects Mitigation Measure AQ-3 which is conservatively not reflected in the other AAQS models.

b. The CAAQS are codified in the California Code of Regulations Title 17 § 70200 Table of Standards (CARB, 2008b).

c. The NAAQS are codified in 40 CFR Part 50, National Primary and Secondary Ambient Air Quality Standards (U.S. EPA, 2020e).

d. For PM_{10}, the SILs are 5 µg/m³ for 24-hour impacts and 1 µg/m³ for annual impacts. Class II SILs are codified in 40 CFR Section 51.165(b)(2) (U.S. EPA, 1986).

4.7 Operational Phase Nitrogen Deposition Modeling Analysis

Nitrogen deposition modeling was conducted to determine the total annual nitrogen deposition rates for nearby critical habitats due to the testing and maintenance of the emergency generators.

4.7.1 Critical Habitat Location

The closest Bay Checkerspot Butterfly critical habitat is located approximately 5 miles north of the Facility, which is classified as Critical Habitat Unit 12 (U.S. Fish & Wildlife Service, 2008). The critical habitat encompasses the area between Watsonville Road and Santa Teresa Road (U.S. Fish & Wildlife Service, 2008).

4.7.2 Emission Sources and Rates

The emission sources and rates modeled for the total annual nitrogen deposition modeling analysis are the same as those for the operational phase annual NO_2 dispersion modeling for comparison to the AAQS. Section 4.6.1 provides a description of the modeled sources. As mentioned in Section 4.4.3, the NO_2 emissions account for approximately 15 minutes of Tier 2 emission standards while the exhaust temperature heats up to the point the SCR can properly abate the NO_X emissions to Tier 4F standards.

4.7.3 AERMOD Parameters and Receptor Grid

AERMOD contains algorithms for particulate deposition and provides two methods for calculating deposition. Method 1 was selected which requires a particle size distribution. AERMOD Method 1 particulate deposition requires inputs for the particle size, fraction, and density. The dry deposition option with plume depletion was selected in the AERMOD model runs. The values in Table 4-12 were used in AERMOD to complete the NO_2 deposition analysis.

Table 4-12: AERMOD Deposition Analysis Constants

Species	Particle Size (microns) [a]	Fraction	Density (g/cm^3) [b]
Ammonium Nitrate	2.5	1.0	1.72
Ammonium Sulfate	2.5	1.0	1.77

a. Atmospheric ammonium nitrate and ammonium sulfate are considered aerosols with sizes typically not exceeding 1 micron. Selection of 2.5 micron-sized particles is conservative as modeling will predict more particle deposition in the critical habitat for larger sizes than what would actually occur for 1 micron diameter particles.

b. Densities reflect the specific gravities of the individual species (National Center for Biotechnology Information, 2021a and b).

Deposition mass was adjusted from the NO_2 emission rate to ammonium nitrate and ammonium sulfate to account for the additional nitrogen mass from ammonium. Total nitrogen deposition in terms of kilograms nitrogen per hectare per year was calculated based on total ammonium sulfate and ammonium nitrate deposition.

A polygon grid consisting of receptors with 100-m spacing is used such that the grid covers the entire Bay Checkerspot critical habitat as shown in Figure 4-2 and 4-3 below.

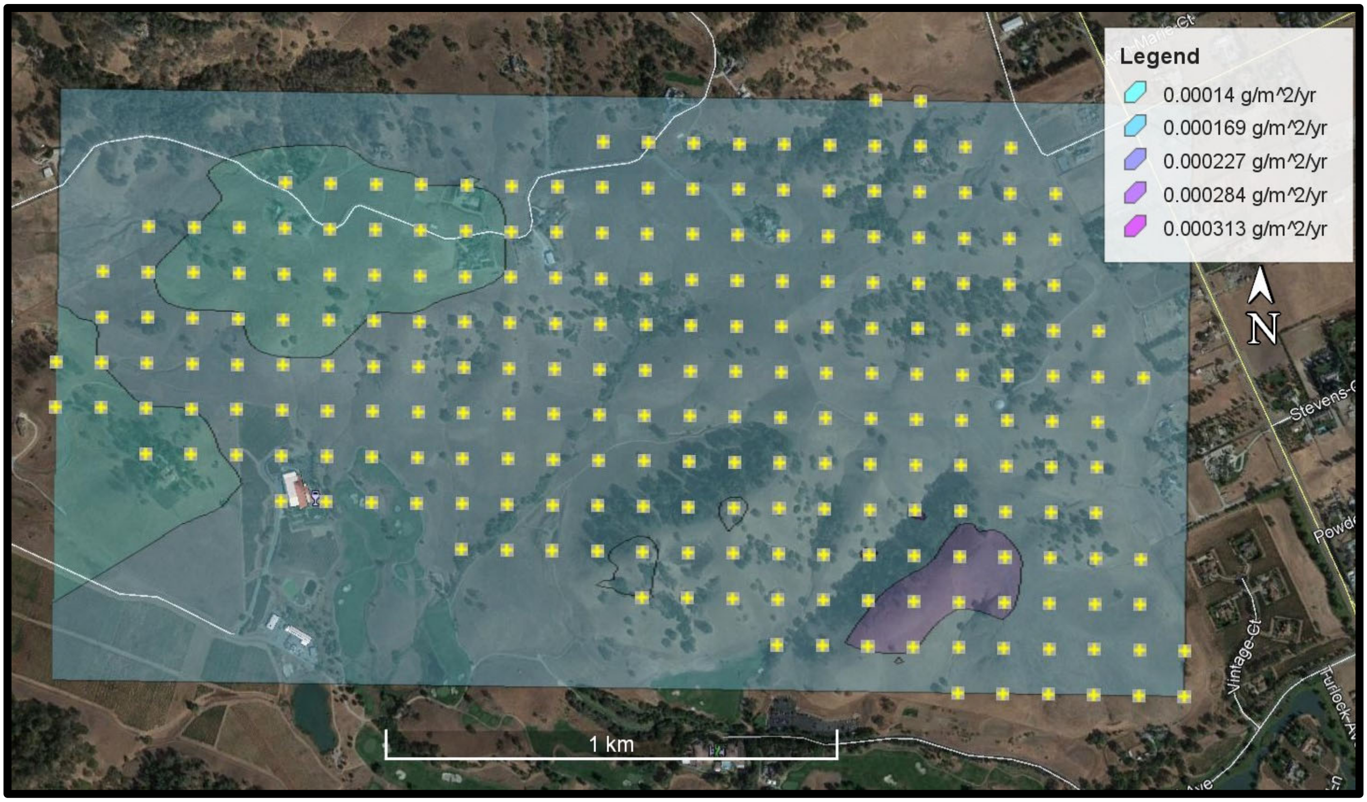


Figure 4-2: Ammonium Nitrate Deposition Isopleth

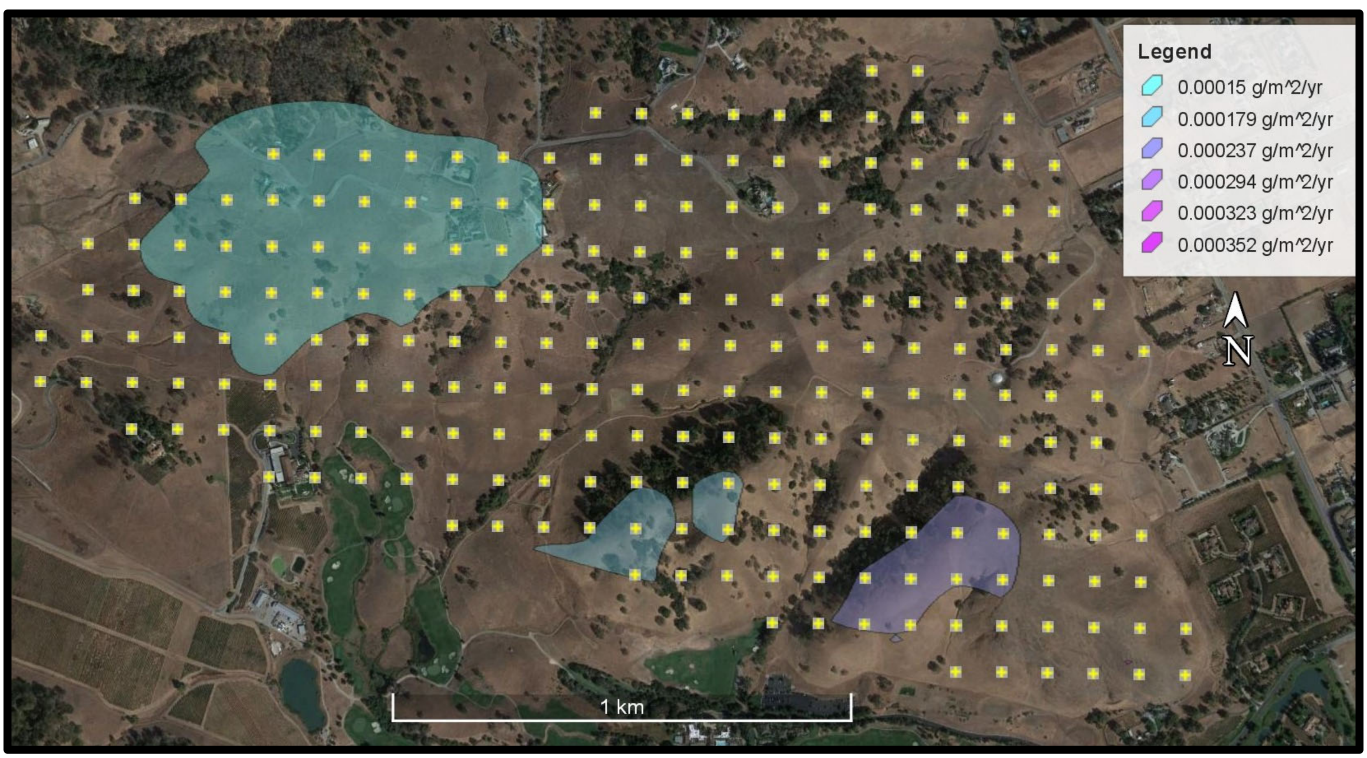


Figure 4-3: Ammonium Sulfate Deposition Isopleth

4.7.4 Deposition Modeling Results

AERMOD was run for NO_2 emission rates using the Method 1 particulate deposition option with plume depletion, conservatively assuming that all the NO_2 emitted is converted to ammonium nitrate and ammonium sulfate. Emission rates of NO_X were modeled using the ammonium nitrate and ammonium sulfate deposition parameters. The resulting mass deposition was converted to nitrate and sulfate to account for the additional mass of the ammonium nitrate and ammonium sulfate particles. The deposition rate was then converted from grams per square meter per year ($g/m^2/yr$) for the ammonium nitrate and ammonium sulfate pollutants to kilograms per hectare per year (kg/ha/yr) of nitrogen using the ratios of the molecular weights of nitrogen to ammonium nitrate and ammonium sulfate. As shown in Table 4-13 below, the total annual nitrogen deposition rate is conservatively 4.81E-03 kg/ha/yr, which is below the National Park Service's and U.S. Fish and Wildlife Service's Deposition Analysis Threshold for Western Class I area parks and refuges (National Park Service and U.S. Fish and Wildlife Service, 2002).

Table 4-13: Deposition Results

Pollutant	Modeled NO_2 Deposition ($g/m^2/yr$) [a]	Nitrogen Deposition (kg/ha/yr) [b]	Threshold (kg/ha/yr) [c]	Below Threshold?
Ammonium Nitrate	3.90E-04	2.37E-03	5.00E-03	Yes
Ammonium Sulfate	4.00E-04	2.43E-03		
Total:		**4.81E-03**		

a. AERMOD results of nitrate and sulfate deposition based on SO2 and NOX emission rates prior to adjusting for mass of ammonium nitrate and ammonium sulfate.

b. Converted using the mass of NO_2 to mass of ammonium nitrate and ammonium sulfate as ratios of molecular weights and converting from $g/m^2/yr$ to kg/ha/yr applying [(10,000 m^2/ha)/(1,000 g/kg)] as follows:
N deposition (kg/ha/yr) = ammonium nitrate ($g/m^2/yr$) * [(10,000 m^2 per ha)/(1,000 g/kg)] * (Nitrogen MW/ Ammonium Nitrate MW)
N deposition (kg/ha/y) = ammonium sulfate ($g/m^2/yr$) * [(10,000 m^2 per ha)/(1,000 g/kg)] * (Nitrogen MW/ Ammonium Sulfate MW)

c. (National Park Service and U.S. Fish and Wildlife Service, 2002)

4.8 Health Risk Assessments

This section presents the evaluation of potential health risks from TACs associated with the proposed Project. Two HRAs are completed to determine the potential health risks, one for the construction phase and one for the operational phase of the Project. The air toxic sources evaluated with the proposed Project for the construction phase are the emissions of diesel particulate matter from diesel-fired construction equipment for the exterior of the Phase II building and the operation of the Phase I building emergency generators. The air toxic sources evaluated with the proposed Project for the operational phase are the emissions of diesel from emergency generators. Ammonia is also a toxic emitted as a result of the SCR operation; however, the potential to emit for ammonia does not exceed the trigger levels of BAAQMD Rule 2-5. Therefore, ammonia emissions would not significantly impact the health risk results and are thus omitted from the assessments. AERMOD dispersion modeling and the Hotspots Analysis and Reporting Program Air Dispersion Modeling and Risk Tool (ADMRT) (version 19121) are used in this AQIA to estimate carcinogenic and chronic (long-term) health risks at residential and worker receptors as a result of the emissions associated with the Project.[14] The analysis concludes that the health risks are below BAAQMD's HRA thresholds of significance. The increased risk is evaluated on a per-receptor basis using the results from HRA conducted for the proposed Project emissions scenario. The results support a less than significant air quality impact on air toxic pollutant emissions. The following sections detail the parameters relevant to the air dispersion model and HRA.

4.8.1 Receptors

The fenceline and refined variable density receptors used for the air dispersion modeling are also used to evaluate the project health risks associated with the proposed Project. Section 4.3.6 provides details on the receptors that are used to evaluate project risk. The receptors are set at a flagpole height of 1.5 meters to conservatively represent an average human's breathing height as recommended by the BAAQMD Recommended Methods for Screening and Modeling Local Risks and Hazards (BAAQMD, 2011).

There are four key receptor types as follows:

- The Point of Maximum Impact (PMI) is selected as the highest risk receptor regardless of location.
- The Maximally Exposed Individual Resident (MEIR) is selected as the highest impact receptor which best aligns with a residence as modeled with resident exposure pathways and duration.
- Maximally Exposed Individual Sensitive Receptor (MEISR) is selected as the highest impact receptor which best aligns with a sensitive receptor (e.g. school, hospital, nursing home) as modeled with resident exposure pathways and duration.
- Maximally Exposed Individual Worker (MEIW) is selected as the highest impact receptor which best aligns with a workplace as modeled with worker exposure pathways and duration.

Potential sensitive receptors near the project are identified and summarized in Section 3.2.4. For purposes of the health risk analysis, the sensitive receptors are further refined to account for the anticipated chronic (long-term) exposure at the receptor location. Further discussion of the sensitive receptors considered for the health risk analysis is provided in Section 4.7.7.

4.8.2 Emission Sources

For the construction phase HRA, emissions are conservatively represented by using the maximum exhaust particulate emission rates as representative for 2023 in which the Phase II building is constructed and during which the Phase I building is operational. The AERMOD dispersion model is run with one volume source representing construction equipment tailpipe emissions and point sources representing 26 critical backup generators, one life safety generator, and one security generator. The conservatively estimated volume source parameters are provided in Section 4.5.1 and point source parameters are consistent with the operational phase HRA described in this section.

For the operational phase HRA, the AERMOD dispersion model is run with point sources representing each of the 50 critical backup generators, two life safety generators, and one security generator. Stack parameters such as temperature and flow rate for the critical backup generators are conservatively set at 10% load, representing the lowest temperature and flow rate. Stack parameters for the life safety generators and security generator are set at 100% load due to the availability of manufacturer-specified stack parameter data.

[14] DPM is the only toxic pollutant evaluated for the Project's operations, which does not have acute (short-term) health risk effects.

4.8.3 Emission Rates

The AERMOD dispersion model is run with a point source unitized emission rate of 1 g/s for "Other" pollutant. For the construction phase HRA, the AERMOD results are scaled by the worst-case annual construction exhaust PM PTE determined in CalEEMod for the volume source and the project operational annual PTE per generator per the emission calculations in Section 4.2.1. for the Phase I emergency generators. For the project operational HRA, the AERMOD results are scaled by the project operational annual PTE per generator in the emission calculations in Section 4.2.1 for all 53 emergency generators. The scaled PTE are then input into HARP.

4.8.4 Exposure Pathways

Results from the air dispersion modeling assessment are combined with applicable TAC emission rates in HARP to model risk and exposure. Exposure pathways are generally classified as primary pathways and secondary pathways. Inhalation is the primary exposure pathway for all modeled sources and substances. For multi-pathway substances, non-inhalation exposure pathways are also to be evaluated. As DPM does not contribute to acute health risk, only cancer risks and chronic hazard indices are considered for the analysis.

Residential cancer risks and chronic hazard indices are evaluated for the following default exposure pathways: dermal absorption, soil ingestion (reflecting a 0.02 m/s deposition rate for particulate-controlled sources), and mother's milk. HARP default parameters were used for numerical pathway inputs.

Worker cancer risks and chronic hazard indices are evaluated based on default worker multi-pathway exposure for the following exposure pathways: dermal absorption, soil ingestion (reflecting a 0.02 m/s deposition rate for particulate-controlled sources). An 8-hour breathing rate with moderate intensity and a 4.2 worker adjustment factor (WAF) was applied to the inhalation pathway to conservatively account for exposure to workers while testing occurred primarily during regular business hours.

4.8.5 Construction Phase Exposure Duration

As construction is not expected to occur for more than 7 years, the exposure duration is represented as 7 years with residential and sensitive receptor exposure assumed to begin prior to birth (during the third trimester of pregnancy). Worker exposure is assumed to begin at age 16 and for a total duration of 7 years. For the residential scenario, the default fraction of time at residence for age bins greater than or equal to 16 years is applied to account for adults spending a portion of the day away from their residence. The fraction of time at residence for age bins less than or equal to 16 years is not applied because at least one school is located within the Zone of Impact (ZOI) which is the 1 per million or greater cancer risk zone associated with the Project (OEHHA, 2015). The Zone of Impact is further discussed in the Section 4.7.7.

4.8.6 Operational Phase Exposure Duration

Consistent with health risk default parameters, residential and sensitive receptor exposure is assumed to begin prior to birth (during the third trimester of pregnancy) and continue for 30 years while worker exposure is assumed to begin at age 16 and continue for 25 years. For the residential scenario, the default fraction of time at residence for age bins greater than or equal to 16 years is applied to account for adults spending a portion of the day away from their residence. The fraction of time at residence for age bins less than or equal to 16 years is not applied because at least one school is located within the ZOI which is the 1 per million or greater cancer risk zone associated with the Project (OEHHA, 2015). The Zone of Impact is further discussed in the subsequent section.

4.8.7 Project Air Toxic Modeling Results

The risk from the proposed Project for each residential, sensitive, and worker receptor is evaluated against the BAAQMD significance thresholds. Both the cancer risks and chronic hazard indices for residents, sensitive individuals, and workers are all below the BAAQMD significance thresholds for health risk. These risks are listed in Tables 4-14 and 4-15. Thus, the HRA concludes that the Project would not have a significant health risk.

Figure 4-4 shows the location of the MEIR, MEISR, MEIW, and PMI of the operational phase. The MEIR, MEISR, MEIW, and PMI locations are the same for both cancer risk and chronic hazard index evaluations. The construction phase MEIR, MEISR, and MEIW are the same locations as that for the operational phase.

The cancer risk and chronic hazard indices for the sensitive receptors listed in Table 3-6 are not individually evaluated because the risks are below that of the MEISR which are below the BAAQMD significance thresholds.

Table 4-14 : Construction Phase Health Risk Assessment Results

Receptor	Sensitive Receptor ID [a]	HARP Receptor ID	Location (UTM Zone 10)	Location (Latitude/Longitude)	Cancer Risk (in 1 million)		Chronic Hazard Index		Significant Impact?
					Project Risk	Significance Threshold	Project Hazard Index	Significance Threshold	
MEIR	N/A	2134	628869 m E 4097265 m N	37.012727, -121.551446	4.16	10	1.55E-03	1	No
MEISR	4	1500	627569 m E 4097865 m N	37.018311, -121.565953	2.17	10	8.09E-04	1	No
MEIW	N/A	457	628049 m E 4097905 m N	37.018606, -121.560551	2.38	10	6.25E-03	1	No
PMI	N/A	577	628129 m E 4097785 m N	37.017511, -121.559403	39.1	N/A [b]	1.46E-02	N/A [b]	N/A

a. Sensitive Receptor ID corresponds to the ID provided in Table 3-6.

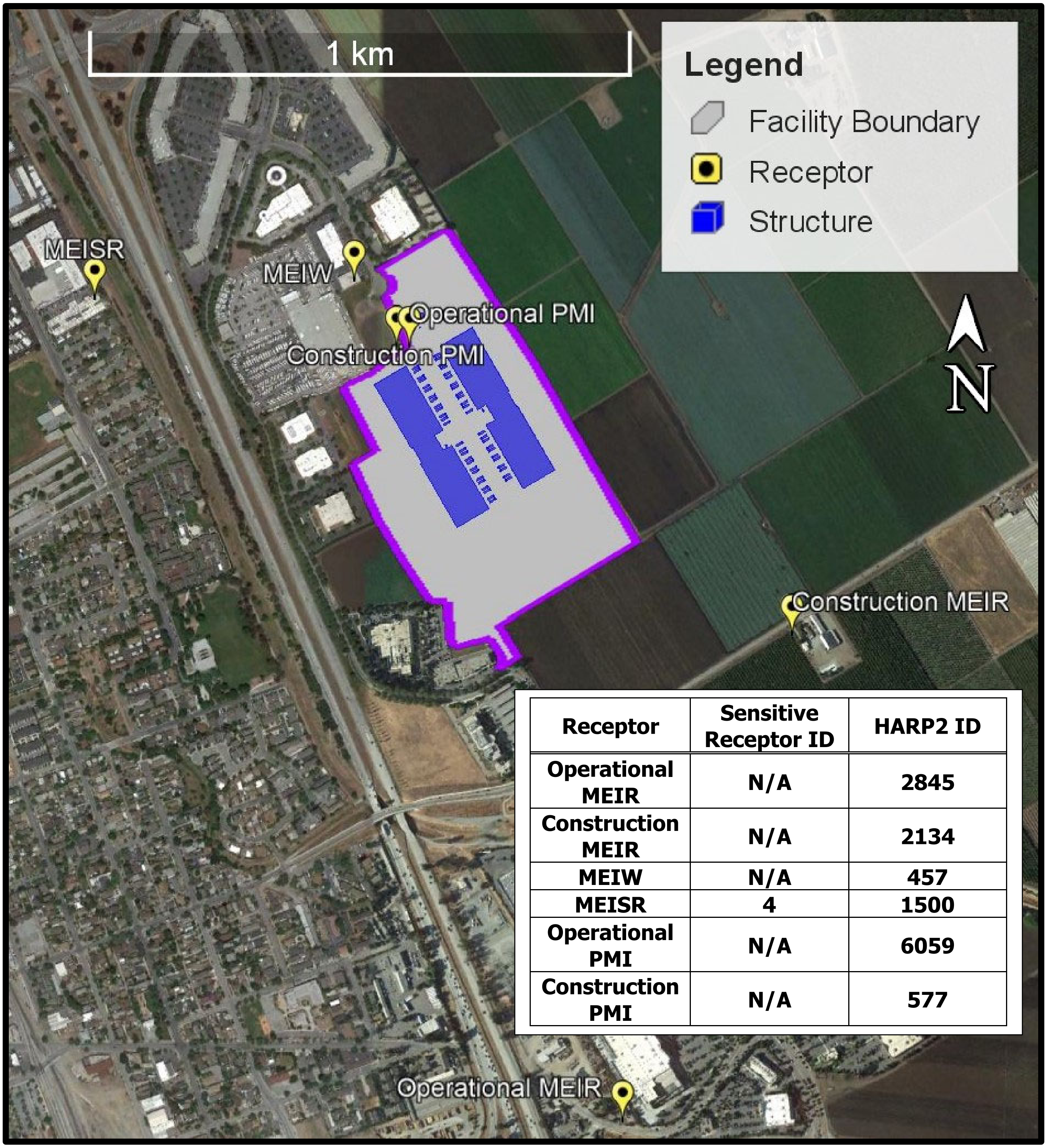
b. The BAAQMD CEQA Air Quality Guidelines note that the health risk evaluation should be considered for the MEI. Per BAAQMD Rule 2-5-302 and BAAQMD Rule 11-18-213, the MEI is defined as "a person that may be located at the receptor location where the highest exposure to toxic air contaminants emitted from a given source or project is predicted, as shown by an APCO-approved HRA." The definitions go on to specify that MEI locations consider exposure to residents, workers, and students. As such, the MEI location differs from the PMI in this evaluation. Since the PMI is not located at a receptor location where a person may reasonably be located on a long-term basis, the chronic and cancer risk thresholds are not applicable to the PMI location.

Table 4-15: Operational Phase Health Risk Assessment Results

Receptor	Sensitive Receptor ID [a]	HARP Receptor ID	Location (UTM Zone 10)	Location (Latitude/Longitude)	Cancer Risk (in 1 million)		Chronic Hazard Index		Significant Impact?
					Project Risk	Significance Threshold	Project Hazard Index	Significance Threshold	
MEIR	N/A	2845	628569 m E 4096365 m N	37.004657, -121.554970	5.45	10	1.26E-03	1	No
MEISR	4	1500	627569 m E 4097865 m N	37.018311, -121.565953	2.49	10	5.76E-04	1	No
MEIW	N/A	457	628049 m E 4097905 m N	37.018606, -121.560551	6.22	10	4.79E-03	1	No
PMI	N/A	6059	628153 m E 4097785.20 m N	37.017511, -121.559403	43.0	N/A [b]	9.95E-03	N/A [b]	N/A

c. Sensitive Receptor ID corresponds to the ID provided in Table 3-6.

d. The BAAQMD CEQA Air Quality Guidelines note that the health risk evaluation should be considered for the MEI. Per BAAQMD Rule 2-5-302 and BAAQMD Rule 11-18-213, the MEI is defined as "a person that may be located at the receptor location where the highest exposure to toxic air contaminants emitted from a given source or project is predicted, as shown by an APCO-approved HRA." The definitions go on to specify that MEI locations consider exposure to residents, workers, and students. As such, the MEI location differs from the PMI in this evaluation. Since the PMI is not located at a receptor location where a person may reasonably be located on a long-term basis, the chronic and cancer risk thresholds are not applicable to the PMI location.



Receptor	Sensitive Receptor ID	HARP2 ID
Operational MEIR	N/A	2845
Construction MEIR	N/A	2134
MEIW	N/A	457
MEISR	4	1500
Operational PMI	N/A	6059
Construction PMI	N/A	577

Figure 4-4: Location of MEIs and PMIs

As shown in Figure 4-4, the operational phase and construction phase PMIs are located along the north side of the Facility property boundary. The PMI locations are outside of a building in a place where the Applicant does not anticipate individuals would be located for extended periods of time.

The MEISR is a healthcare and rehabilitation center located to the west of the Facility property boundary which is anticipated to have in-patient care. The MEISR is determined by refining the list of sensitive receptors identified in Section 3.2.4. to those which will have chronic exposure. DPM is the only toxic pollutant emitted from the Project's operations, which does not have acute health risk effects. As such, sensitive receptors with the potential of chronic exposure are evaluated for determining the MEISR.

Figure 4-5 demonstrates the ZOI (the 1 per million or greater cancer risk zone) as a bright yellow outline and the zone of influence (the 1,000 feet zone around the property boundary) as a light green shaded area. There are no chronically-exposed sensitive receptors within the zone of influence.

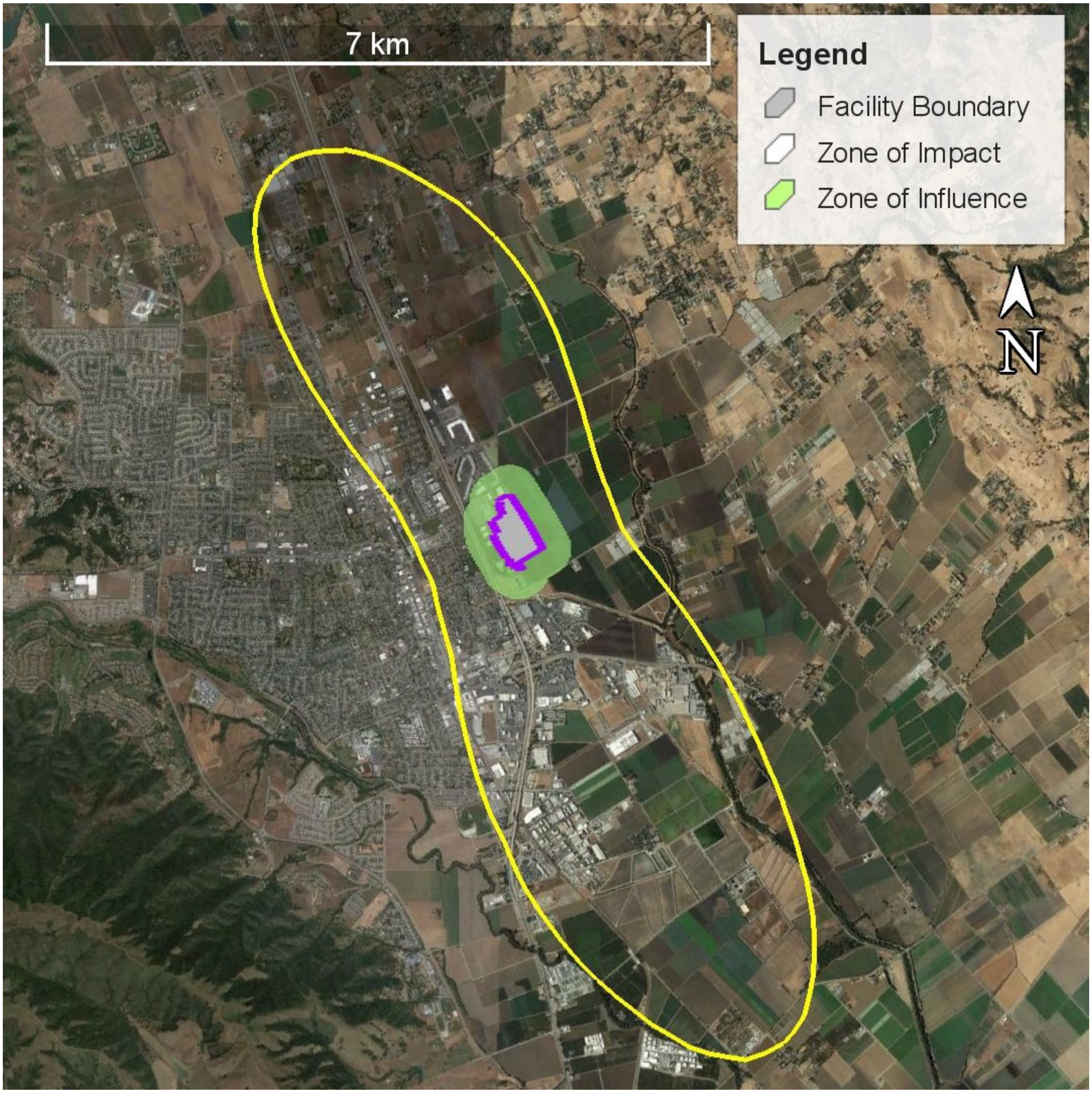


Figure 4-5: Operational Phase One in 10^6 Cancer Risk Zone of Impact

An additional BAAQMD threshold of significance for the risk and hazards category evaluates the ambient $PM_{2.5}$ increase associated with the Project operations. The threshold is 0.3 µg/m^3 on an annual average basis and the maximum ambient $PM_{2.5}$ increase associated with the Project at any receptor is 0.059 µg/m^3; therefore, any value at an MEI location will inherently be lower (BAAQMD, 2017b). Thus, the ambient $PM_{2.5}$ increase associated with the Project is not a significant impact.

4.8.8 Cumulative Health Risk Assessment Results

In addition to the HRA described above, an assessment of the proposed Project's impact summed with the impacts of sources within 1,000 feet of the Project was conducted and compared to the BAAQMD CEQA cumulative thresholds of significance (BAAQMD, 2017b).[15] The cumulative cancer risk, hazard index, and ambient $PM_{2.5}$ concentration are calculated using the maximum cancer risk and hazard indices from stationary sources within 1,000 feet of the proposed Project, as provided by BAAQMD. The cancer risk and $PM_{2.5}$ concentration from highways, major streets, and rails within 1,000 feet of the Project are determined using BAAQMD raster files that incorporate annual average daily traffic (AADT) per EMFAC 2014 data for fleet mix and includes OEHHA's 2015 Guidance Methods. The raster files encompass highways, major streets, and rails with greater than 30,000 AADT. Table 4-14 summarizes the impacts from cumulative sources in comparison to the BAAQMD threshold of significance for cumulative risk and hazards.

[15] Per the BAAQMD CEQA Guidelines, the zone of influence for the cumulative threshold is 1,000 feet from the source or receptor.

Table 4-16: Impacts from Cumulative Sources

Source [a]	Maximum Cancer Risk (in 1 million)			Maximum Hazard Index			Maximum Annual $PM_{2.5}$ Contribution ($\mu g/m^3$) [b]		
	MEIW	MEIR	MEISR	MEIW	MEIR	MEISR	MEIW	MEIR	MEISR
Plant No. 14520, Kaiser Permanente	6.56			0.01			0.01		
Plant No. 15334, Target Store T1851	0.01			0			0		
Plant No. 15772, City of Gilroy	1.54			0			0		
Plant No. 18259, County of Santa Clara - VHC Gilroy	1.64			0			0		
Plant No. 19648, City of Gilroy	6.23			0			0.01		
Highway	12.07	5.90	34.43	-- [c]			0.197	0.095	0.576
Railways	0.97	0.81	1.38	-- [c]			0.001	0.001	0.002
Major Streets	0.08	0.04	0.07	-- [c]			0.002	0.001	0.002
Total Cumulative Sources	29.10	22.72	51.86	1.00E-02	1.00E-02	1.00E-02	0.22	0.12	0.60
Project Operation of Generators	6.22	5.45	2.49	4.79E-03	1.26E-03	5.76E-04	5.88E-02		
Total Cumulative Sources + Project Operation	*35.32*	*28.17*	*54.35*	*0.015*	*0.011*	*0.011*	*0.28*	*0.18*	*0.66*
Significance Threshold	*100*			*10*			*0.8*		
Significant Impact?	**No**			**No**			**No**		

a. Sources within 1,000 feet of the Facility are determined using BAAQMD's Permitted Stationary Sources Risk and Hazards tool (BAAQMD, 2020d). As of 2020, BAAQMD has updated its procedures to only provide maximum values for each stationary source/facility. As such, only the maximum values are represented for each source/facility.

b. Maximum Annual $PM_{2.5}$ reflects the project impact determined for the annual $PM_{2.5}$ CAAQS. Annual $PM_{2.5}$ CAAQS is conservatively used to represent the MEIW, MEIR, MEISR.

c. Hazard index is not provided for highways, major streets and railways per the BAAQMD raster files.

The cumulative cancer risk, hazard index, and $PM_{2.5}$ concentration were estimated for the MEIR, MEIW, and MEISR. It is important to note that Table 4-14 specifies specific values for these MEI receptor locations where the data is available and otherwise substitutes the overall maximum receptor value as a conservative representation. As such, the annual $PM_{2.5}$ project impact for the MEIR, MEIW, and MEISR all conservatively reflect the maximum annual $PM_{2.5}$ impact from the Project. Based on the results of the comparison to cumulative thresholds for the proposed Project, the Project's health risk for maximally exposed individuals does not exceed the cumulative health risk thresholds when summed with the health risk of sources within 1,000 feet of the Project.

The cumulative health risk impacts are not individually evaluated for each sensitive receptor listed in Table 3-6 because these sensitive receptors are either greater than 1,000 feet from the Project or they are not chronically-impacted sensitive receptors. Per the BAAQMD 2017 CEQA Guidelines, cumulative impacts are evaluated for the aggregate total of sources within a 1,000 foot radius from the fenceline of a source plus the contribution from the Project. Only sensitive receptors 1, 2, and 3 are within 1,000 feet of the Project and these receptors are categorized as worker receptors due to the operating hours and nature of business for these facilities. As such, the sensitive receptors listed in Table 3-6 do not need to be further evaluated as part of the cumulative health risk assessment.

4.9 Impact Summary and Mitigation Recommendations

Table 4-17 summarizes the checklist questions from Appendix G of the California State CEQA Guidelines for air quality and GHG impacts and determinations resulting from the proposed Project analysis.

Table 4-17 : Environmental Impact Significance Determinations

Air Quality				
Would the project:	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a. Conflict with or obstruct implementation of the applicable air quality plan?		X		
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable Federal or State ambient air quality standard?		X		
c. Expose sensitive receptors to substantial pollutant concentrations?			X	
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	
Greenhouse Gas Emissions				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	

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

4.9.1 Types of Impacts

Direct Impacts. Direct impacts are the result of a project itself (from its operation) in the form of emissions generated at a project location. For example, exhaust emissions from vehicles and fugitive dust are direct impacts.

Indirect Impacts. Indirect impacts are those that may occur at locations other than a project location, or on a regional basis. For example, an increase in electricity usage could affect regional air quality.

Cumulative Impacts. Cumulative impacts are the combination of a project's direct and/or indirect impacts along with other existing, proposed, and reasonably foreseeable projects that may be related to the project. For example, the cumulative impact of all operational activity in an air basin may affect regional air quality.

Consistency with Plans and Programs. A project may be considered to have a significant impact if it conflicts with or delays implementation of any applicable air quality attainment or maintenance plan. A project is conforming if it complies with the applicable rules and regulations, complies with all proposed control measures that are not yet adopted from the applicable plan(s), and is consistent with the growth forecasts in the applicable plan(s) (or is directly included in the applicable plan).

4.9.2 Impact: Air Quality Criteria A and B

The following discuss the Project's air quality impact based on air quality significance Criteria A and B.

- Potential to conflict with or obstruct implementation of the applicable air quality plan (Criterion A) (Less than Significant, With Mitigation Incorporated).

As shown in Table 4-6, the emissions associated with the proposed Project would not exceed applicable significance thresholds and would result in less than significant operational impacts, except for daily and annual NOx emissions. As explained in Section 4.2.3 and 4.6.4, although the NO_x emissions exceed the BAAQMD CEQA thresholds of significance, the concentration of NO_x resulting from the proposed Project does not exceed the CAAQS or NAAQS with implementation of Mitigation Measure AQ-2 and Mitigation Measure AQ-3. As explained in Section 4.5.4, the ambient air quality dispersion model resulted in PM_{10} exceeding the CAAQS, however this was due to background concentration data rather than pollutant concentrations resulting from the Project. Furthermore, although PM_{10} exceeded the CAAQS due to high background pollutant concentrations, Project emissions of PM_{10} were below applicable SILs. Therefore, the proposed Project would not conflict with or have any adverse impact on implementation of the 2017 Bay Area Clean Air Plan nor would the proposed Project disrupt or hinder implementation of any plan control measures with mitigation incorporated.

- Potential to result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (Criterion B) (Less than Significant, With Mitigation Incorporated).

As shown in Table 4-6, the proposed Project would result in a net emissions increase for PM_{10}, $PM_{2.5}$, CO, NO_x, SO_X and ROG on a daily and annual basis. The Project region is nonattainment for $PM_{2.5}$ and 8-hour ozone. All net emissions increases of PM_{10}, $PM_{2.5}$, CO, SO_x and ROG are below the BAAQMD CEQA thresholds of significance. The net emissions increase of NO_x from operational emissions is above the

BAAQMD significance threshold, but below the CAAQS and NAAQS with implementation of Mitigation Measure AQ-2 and Mitigation Measure AQ-3. NO_x emissions from routine operation of the 53 proposed generators will be mitigated through procurement of NO_x emission offsets. NO_x emissions from construction impacts will be mitigated through Mitigation Measure AQ-1.

Per the ambient air dispersion model results, the concentration of PM_{10} is above the 24-hour and Annual CAAQS when cumulated with background concentration data available from BAAQMD ambient air monitors. However, the concentration of PM_{10} resulting from the proposed Project alone is significantly below the CAAQS and below the applicable SIL.

Therefore, the proposed Project's operational emissions will be less than significant with mitigation incorporated. Because the proposed Project does not conflict with any applicable air quality plans with mitigation incorporated, the proposed Project would also not contribute to cumulatively considerable air quality impacts.

4.9.3 Impact: Air Quality Criteria C and D

The following discuss the Project's air quality impact based on air quality significance Criteria C and D.

- ► Potential to expose sensitive receptors to substantial pollutant concentrations (Criterion C) (Less than Significant, No Mitigation Required).

The primary air toxic source associated with the proposed Project is DPM from the operation of the 53 proposed generators. Health risk to local receptors is analyzed using dispersion modeling as presented above in Sections 4.3 through 4.6. The results of the health risk assessment shown in Table 4-12 and 4-14 demonstrate the highest cancer, chronic, and acute risks as a result of this Project are below BAAQMD's thresholds of significance for Risks and Hazards. Additionally, cumulative health risk impacts were assessed for all sources within 1,000 feet of the Project boundary (per BAAQMD CEQA Air Quality Guidelines) and are below the BAAQMD CEQA threshold of significance for cumulative health risk impacts. Further, the Project would result in an ambient $PM_{2.5}$ increase of 0.059 $\mu g/m^3$ which is well below the significance threshold of 0.3 $\mu g/m^3$ and is therefore considered to be a less than significant impact. Additionally, as summarized in Table 4-14 above, cumulative impacts of $PM_{2.5}$ are also below the cumulative threshold of significance of 0.8 $\mu g/m^3$.

Therefore, no significant health risks are expected to occur from the operations of the proposed Project and no mitigation is required.

- ► Potential to result in other emissions (such as those leading to odors) adversely affecting a substantial number of people (Criterion D) (Less than Significant, No Mitigation Required).

The proposed Project would not involve the development of the types of land uses that would result in emissions that are typically associated with odor issues, such as wastewater (sewage) treatment plants, landfills, composting facilities, refineries, or chemical plants. Nor would the Project locate sensitive receptors within proximity of these types of odor-producing sources. Therefore, the proposed Project would not result in impacts associated with odor.

4.9.4 Impact: Greenhouse Gases Criteria A and B

The following discuss the Project's impact based on GHG significance Criteria A and B.

- Potential to generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment (Criterion A) (Less than Significant, No Mitigation Required).

The proposed Project's operational emissions are presented in Table 4-6 above and are compared to the BAAQMD threshold of significance applicable to the GHG emissions from stationary sources. GHG emissions associated with the proposed Project would be well below the 10,000 MT CO_2e per year significance threshold. The proposed Project's operational emissions are therefore considered to have less than significant GHG impacts and no mitigation is required.

- Potential to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. (Criterion B) (Less than Significant, No Mitigation Required).

None of the proposed Project elements, nor the Project as a whole, conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. The proposed Project does not conflict with the goals of AB 32, will not hinder the implementation of any of the measures specified in the updated AB 32 Scoping Plan, and will comply with all applicable GHG measures already adopted under AB 32 and other authorities. Nor would the proposed Project conflict with the Santa Clara County Climate Action Plan. For these reasons, the proposed Project's GHG emissions are considered to have less than significant impact associated with potential conflicts with a plan, policy or regulation adopted for the purpose of reducing GHG emissions and no mitigation is required.

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