SAN FRANCISCO
PLANNING DEPARTMENT

1650 Mission St.
Suite 400
San Francisco,
CA 94103-2479

Reception:
415.558.6378

Fax:
415.558.6409

Planning
Information:
415.558.6377

Addendum to Mitigated Negative Declaration

Date of Publication of Addendum:	April 27, 2016
Date of Publication of Final MND:	April 8, 2003
Case No.:	**2013.1125E**
Project Title:	**1828 Egbert Avenue**
Block/Lot:	5434B/005
Project Sponsor	Shane Mason, Cardiff Mason Development 408-834-0361
Lead Agency:	San Francisco Planning Department
Staff Contact:	Chris Thomas – (415) 575-9036 christopher.thomas@sfgov.org

REMARKS

1.0 Background

On December 30, 2013, the project sponsor submitted an Environmental Evaluation Application for minor modifications to an Internet Service Exchange (ISE)[1] facility that was evaluated in a Final Mitigated Negative Declaration (the 2003 FMND), adopted with approval of that project (the 2003 FMND Project or the then-proposed project) on April 8, 2003.[2] Pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15164, an addendum to an adopted negative declaration shall be prepared if only minor technical changes or additions are necessary or none of the conditions described in Section 15162 calling for preparation of a subsequent negative declaration or Environmental Impact Report (EIR) have occurred. In addition, Section 31.19(c)(1) of the San Francisco Administrative Code states that a modification to a previously approved project must be reevaluated as follows: "If, on the basis of such reevaluation, the Environmental Review Officer determines, based on the requirements of CEQA, that no additional environmental review is necessary, this determination and the reasons (Addendum) therefor shall be noted in writing in the case record, and no further evaluation shall be required by this Chapter."

Consistent with Section 15164 of the CEQA Guidelines, the purpose of this Addendum is to substantiate the Planning Department's determination that no supplemental CEQA review is required for the currently proposed 1828 Egbert Avenue Project (the Modified Project). This Addendum, which is intended to be used in the planning and decision-making process, concludes that the proposed changes to the 2003 FMND Project would not result in any new significant environmental impacts or substantial increases in the significance of already identified effects in the 2003 FMND. Thus, no supplemental environmental review for the Modified Project is required.

---

[1] Internet Service Exchanges are also referred to as "telecommunications switching facilities" or "data centers".

[2] San Francisco Planning Department. *1828 Egbert Avenue, Final Mitigated Negative Declaration* (Case File No. 2000.280E), April 8, 2003. This document (and all other documents cited in this report, unless otherwise noted) are available for review at the Planning Department, 1650 Mission Street, Suite 400, as part of Case No. 2013.1125E.

2.0 Previous Environmental Review

On March 22, 2000 the sponsor, San Francisco Self Storage III, LLC, filed an application for environmental review for a proposed telecommunications switching facility and parking garage to be located on an approximately 2.1-acre-lot at 1828 Egbert Avenue. The following project description was provided in the FMND prepared for this 2000 Project:

> *The proposed project would demolish two vacant buildings, totaling 47,993 square feet (sq. ft.) and construct a four-story, 246,000 sq. ft. telecommunication switch facility. The building would be approximately 63' in height. A three-story parking garage consisting of 124 parking spaces would also be provided on the 87,193 sq. ft. site. The vehicular access to the parking garage would be from Newhall Street. While the submitted plan shows code complying parking of 124 parking spaces (depicted as Option A), the project sponsor plans to seek a variance to reduce the anticipated parking to be lower due to the nature of the use. One drive-in loading bay and one loading dock would also be provided at the ground floor of the main building. The site is within the Planning Commission's adopted Industrial Protection Zone (IPZ) Buffer, where conditional use authorization or discretionary review is required for industrial building demolition. Since the proposed demolition would not result in employee or business displacement, mandatory discretionary review would be required and not a conditional use. The proposed project is located in an M-1 (Light Industrial) District and within the 65-J Height and Bulk district. The project sponsor would seek a conditional use, as permitted under Section 303 of the Planning Code, to exceed the bulk limit.*

The FMND for the 2000 project, which anticipated up to 34 employees at the then-proposed facility, was adopted on June 26, 2000. Construction was to occur in two phases; Phase 1 was completed in August 2004 and included demolition of the two buildings and construction of a 124,633-square-foot (sf) building[3], 70 parking spaces (located outdoors at ground level) and one freight loading space. The proposed 81,902-sf Phase 2 expansion to the Phase 1 building (including the 124-space parking garage) was never constructed.

In May 2001 the sponsor, San Francisco Self Storage III, LLC filed a second environmental evaluation application in response to a revision to the 2000 Project that entailed the following:

> *The proposed project is located at 1828 Egbert Avenue, west of Newhall Street on Assessor's Block 5434B, Lot 5. Subsequent to the issuance of an earlier Final Negative Declaration (FND) for this project, the project was revised. This analysis is for the revised project. The project analyzed in the original FND was the demolition of two vacant buildings and the construction of a four-story 246,000-square-foot-telecommunication switch facility and a three-story 124-space parking garage. The revised project only differs from that analyzed in the FND with respect to the number of diesel generators provided. The revised project proposes 16-diesel-fuel-generators compared to the previously analyzed one generator. The total square footage of the structure has been reduced to 210,102-sq.ft. and 94 parking spaces within the structure, eliminating the 124-space parking garage originally proposed. All 16 generators would provide backup capability to the telecommunications facility. The generators would be located outside the building*

[3] Although the 2000 FMND references a 124,633-sf structure, the plans for the proposed Modified Project state that the total area is 125,970 sf. Because this document is an Addendum to the 2003 FMND, the figures provided in the 2003 FMND will be used for the purposes of analyzing the effects of the proposed Modified Project.

envelope, 12 of which would be on the roof of the building and the remaining four located at the ground level next to the building. The diesel-fuel-generators would be limited to only operate for reliability testing and for emergency operations. Since the issuance of the FND, the site is no longer within the Planning Commission's adopted Industrial Protection Zone (IPZ) Buffer, but it is now located in the Permanent Industrial Protection Zone, in which industrial uses are principally permitted uses. The project site is also within the Planning Commission's adopted Conditional Use Authorization for Internet Services Exchanges zoning area. The proposed project is located in an M-1 (Light Industrial) District and within a 65-J Height and Bulk district.

The 2003 FMND included consideration of a Phase 2 expansion of the then-existing 124,633 sf structure that would have resulted in a 210,102 sf structure (an increase in area of about 85,470 sf), a minor amount of soil disturbance for concrete pads and the parking lot and analysis of the proposed addition of 16 emergency power generators. The Phase 2 expansion did not occur. The project description for the 2003 FMND included 53 employees working at the proposed facility with no distinction as to the number of employees per shift. The Air Quality/Climate section noted "limited" soil disturbance for foundation excavation and site grading.

The 2003 FMND found that the project would not have significant adverse environmental effects in regards to Land Use, Visual Quality, Population, Transportation/Circulation, Noise, Shadow, Utilities/Public Services, Biology, Geology/Topography, Water, Energy/Natural Resources, Cultural Resources, or Cumulative Impacts. The 2003 FMND contained four mitigation measures to avoid potentially significant impacts of the project identified in the initial study: Mitigation Measure 1 addressed construction air quality; Mitigation Measure 2 addressed air quality impacts associated with the emergency generators; Mitigation Measure 3 addressed hazards related to excavation and disposal of lead-contaminated soils; and Mitigation Measure 4 addressed impacts related to adverse effects to archeological resources.

Due to a sudden decline in demand for telecommunication switching facilities in the fall of 2001 (colloquially referred to as the "dot-com bust"), the 2003 FMND Project never became operational and the building has been used since that time as a self-storage facility. With the return in demand for telecommunication switching facilities over the past few years, the current sponsor, Cardiff Mason Development, submitted an application for a Conditional Use Authorization on August 15, 2013 and an Environmental Evaluation Application on December 30, 2013. This Addendum therefore evaluates the currently proposed Modified Project in relation to the 2003 FMND Project.

3.0 Modified Project Description

The Modified Project compares with that analyzed in the 2003 FMND Project as follows:

ISE Facility Structure

The adopted 2003 FMND evaluated an increase in the number of diesel-fueled emergency generators from one to 16 and included discussion of a Phase 2 expansion of the then-existing structure that would have resulted in an increase in area of about 85,470 sf. As noted, that expansion was never begun and the existing four-story, approximately 65-feet-tall-structure is the same as it was when completed in 2004.

With approval of the Modified Project, no new structure or substantial addition to the existing structure would be built. Instead, the existing building would be cleared of its current self-storage partitions to

make room for installation of internet servers and related mechanical equipment. Twelve emergency generators would be installed inside the fourth floor and would vent to exhaust stacks located at the northern edge of the roof, with one house generator installed on grade.

Additions to the current structure would primarily involve changes to address the need to maintain a cool temperature in the server rooms. These include construction of an approximately 38 by 53 foot ground-to-roof louvered air shaft on the northeast side of the existing structure and an approximately 27 by 14 foot ground-to-roof air shaft on the north east corner of the existing structure. Additions of these air shafts would add about 2,392 sf to the footprint of the existing structure, representing an approximately two percent increase in area. Ventilation fans on the larger shaft would convey exterior air into the interior of the building to cool the server rooms while the warm interior air would vent out the smaller shaft at the northeast corner. These air shafts would require excavation of approximately 280 cubic yards of soil to a depth of about one and a half feet. In addition, the Modified Project proposes about 2,870-sf of new paving for parking and 3,875-sf of concrete slabs to support water tanks, fuel tanks and electrical switch gear, requiring a total of about 310 cubic yards of excavation, again to depths of about one and one half feet. The total area subject to soil disturbance would therefore be about 8,960 sf and the total volume of excavation would be about 590 cubic yards. The existing parking lot, which has 60 parking spaces, would be downsized to 45 spaces and reconfigured by moving 13 of the spaces that are currently on the west side of the lot to an area with bare soil on the northeast side of the lot.

Other modifications to the existing structure would include a continuous 10-foot-tall rooftop barrier on the southern, western and northern perimeter of the roof to contain noise from rooftop mechanical equipment. In order to reduce noise from the Modified Project's mechanical equipment, the noise barrier, air shafts, fans, and exhaust vents would all be designed and constructed according to the recommendations discussed in the Noise section below. San Francisco's Noise Ordinance (Article 29 of the Health Code) provides limits to noise generating activities and operations. Section 2909(b) limits noise from commercial and industrial properties to no more than eight dBA above the local ambient at any point outside the property plane. Section 2909(d) mandates that no fixed noise source (such as stationary mechanical noise) may cause the noise level measured inside any sleeping or living room in any dwelling unit located on residential property to exceed 45 dBA between the hours of 10:00 PM to 7:00 AM or 55 dBA between the hours of 7:00 AM to 10:00 PM with the windows open. As discussed in the Noise section below, the modified project would comply with Section 2909(b) and (d). The specific acoustical requirements necessary for the proposed project's mechanical equipment to meet Noise Ordinance Sections 2909(b) and (d), which have been incorporated into the plans for the Modified Project, are as follows:

- *Rooftop Noise Barrier*. The continuous 10-foot-tall rooftop noise barrier along the southern, western and northern perimeter would have a minimum surface weight of four pounds per square foot and sound-absorptive media on its surface facing the rooftop mechanical equipment with a minimum Noise Reduction Coefficient (NRC) rating of 0.90.
- *Main Ventilation Intake Fans.* The main ventilation intake fans, located behind the louvers on the air supply shaft on the east side of the existing structure, would have acoustical louvers equal to Industrial Acoustics Company (IAC) Model R.
- *Main Ventilation Shafts and Exhaust Fans:* Ventilation shafts would be lined with two-inch thick acoustical duct liner board. The penthouses atop the ventilation shafts would be constructed with

single-stud wall sheathed on both sides, in addition to an interior lined with a minimum four-inch-thick, sound absorbing acoustical lining with a minimum NRC rating of 0.95. Exterior doors to the penthouses would be solid-core wood or insulated steel with full perimeter gaskets and a bottom seal. Penthouse vents would have duct silencers with the minimum insertion loss values provided in the noise analysis prepared for the modified project.[4]

- *Chillers.* The chiller units would be Trane Model RTAE300 (300 ton, 600 rpm and maximum 75 percent load).
- *Battery Air Cooled Condenser Units.* The condenser units to cool the generator engine batteries would be Liebert Quiet-Line Air Cooled Condenser Model DCST.
- *Rooftop Gravity Relief Vents*. Rooftop relief vents for emergency generator noise would be installed with mufflers adequate to meet Sections 2909(b) and 2909(d) on the western and eastern property planes and specified in the noise analysis prepared for the modified project.[5]

Emergency Backup Generators

The 2003 FMND evaluated sixteen 2 megawatt (MW) diesel-powered emergency generators (for a total output of 32 MW) to provide backup electricity in the event of a power failure. Twelve of the generators were to be located on the roof of the building and four were to be located on the ground next to the building.

The Modified Project would include twelve 2.5 MW diesel-powered emergency generators and one 500 KW diesel generator (for a total output of 30.5 MW) to provide backup power in the event of a power failure. Twelve generators would be located at the north end of the fourth floor of the existing building and the 500 KW generator would be located on ground level. The generators would vent to exhaust pipes on the roof and be cooled by radiators also located on the roof. Four 10,000 gallon dual contained fuel tanks would be located on the ground level, at the north end of the project site.

Condenser Units or Chillers

The 2003 FMND did not include discussion of condensers (also referred to as "chillers").

The Modified Project includes six Trane RTAE 300 chillers that would be located on the roof of the existing building. They would be used when outdoor ambient temperatures are too warm to keep the internet servers in the switching facility at their required operating temperature. The chillers pass exterior air over a chilled water coil before it is conveyed by fan into the building. They do not have evaporative cooling pads and do not consume any water. A memorandum (Chiller Operation Memo) was prepared to determine how often the chiller would have to operate given San Francisco's generally cool climate.[6] The Chiller Operation Memo notes that although the most stringent requirement for a maximum server room

---

[4] Charles M. Salter Associates, Inc., *1828 Egbert Avenue Data Center Mechanical and Emergency Generator Equipment Noise Analysis*, CSA Project: 15-0265. April 21, 2016.

[5] Ibid.

[6] Pragmatic Professional Engineers, *Memorandum: Air-cooled chiller operation at proposed 1828 Egbert data center*, February 2, 2016.

temperature is 80.6^{O} F, some tenants keep the server aisles at 72^{O} F. Assuming that the desired interior temperature for the Modified Project's server rooms would be 72^{O} F – and allowing for typical temperatures in the project vicinity – the Chiller Operation Memo established that the chillers would generally need to operate about 263 hours per year, or approximately three percent of the total number of hours in a year.

Employees

The 2003 FMND anticipated up to 53 employees at the site. No distinction was made as to whether this figure represented the number of employees per shift or a total figure for three shifts in a day.

According to the sponsor, the total number of employees at the proposed facility would vary depending upon how many data center tenants occupy the building.[7] Were multiple tenants to operate separate data centers at the proposed facility, there could be as many as 35 employees per shift, or a total of 105 employees over the course of a 24-hour day, every day. Five employees would operate the physical building and perform administrative, engineering, security, janitorial, and repair tasks. The project sponsor estimates that each data center would employ up to 30 engineers and technicians per shift to maintain the servers, network, power infrastructure, and mechanical equipment for the data center.

In contrast, if a single tenant were to occupy the facility, the project sponsor estimates eight to ten employees per shift would be required to operate the facility, or a total of 24 to 30 employees over the course of the day. For the purposes of this Addendum, the larger, more conservative figure of 105 employees over the course of a 24-hour day will be used that assumes shift changes during the AM and PM peak hour commuting periods.

Summary

To conclude, the Modified Project considered in this Addendum proposes the following changes to the project approved with adoption of the 2003 FMDN:

- The 2003 FMND included consideration of an approximately 85,470 sf expansion to the then-existing 124,633 sf structure. The Modified Project proposes an approximately 2,392 sf expansion to the existing 124,633 sf structure.
- The 2003 FMND included consideration sixteen 2 MW diesel-powered emergency generators (for a total output of 32 MW). The Modified Project would include twelve 2.5 MW diesel-powered emergency generators and one 500 KW diesel generator (for a total output of 30.5 MW).
- The 2003 FMND did not include discussion of the chillers used to cool the server rooms. The Modified Project would include six Trane RTAE 300 chillers that would be located on the roof of the building.
- The 2003 FMND included consideration of up to 53 employees at the project site, without distinction as to whether this was the number of employees per shift or the total employees for

[7] Email from Shane Mason, Project Sponsor, to Chris Thomas, San Francisco Planning Department. September 16, 2015.

three shifts in a day. The Modified Project would include as many as 35 employees per shift, or a total of 105 employees over the course of a 24-hour day, every day.

- The 2003 FMND included consideration of 96 parking places. The Modified Project would include 45 parking spaces.

The changes to the 2003 FMND Project proposed by the Modified Project are minor in scope and do not require preparation of a subsequent negative declaration pursuant to CEQA Guidelines Section 15162.

4.0 2003 and Current Environmental Setting

The Modified Project would occur in the same location as the project evaluated by the 2003 FMND: a level, approximately two-acre L-shaped lot located at the northwest corner of Egbert Avenue and Newhall Street in San Francisco's Bayview neighborhood. As noted, the project site currently includes a four-story (approximately 65-feet-tall), 124,620-sf building (temporarily used as a self-storage facility since 2005) with about 70 outdoor parking spaces occupying an approximately 25,000-sf paved parking lot.

Land uses in the vicinity of the project site was and is characterized by single-family residences to the immediate west and east and light industrial and warehouse uses to the immediate north and south. A comparison of 2002 and 2014 aerial photographs showing the area within 1,000 feet of the project site reveals the same structures with the exception of an approximately 8,000-sf, one-story warehouse and several small light manufacturing buildings located at 1996 Carroll Avenue, about 550 feet to the north. There is one school within 1,000 feet of the project site: Senior Martin College Preparatory School, located about 900 feet to the west across U.S. 101. Transportation infrastructure present in 2002 remains today: US Highway 101 (about 500 feet to the west) and the Caltrain commuter rail tracks (about 860 feet to the east).

The cumulative analysis in the 2003 FMND included the then-existing telecommunication center at 200 Paul Avenue (about 1,100 feet to the southeast) with twenty-two 2 MW emergency generators permitted, in addition to proposed telecommunications centers at 400 Paul Avenue (about 1,300 feet to the southwest) with seventeen 2 MW generators anticipated and 5700 Third Street (about 1,600 feet to the east) with seventeen 2 MW generators anticipated.

In regards to the current local setting, a FMND for an expansion of an existing internet service exchange at 200 Paul Avenue was adopted on September 26, 2013 that evaluated an additional eighteen 2 MW emergency generators (in addition to the seventeen existing generators).[8] A FMND for a new internet service exchange at the 400 Paul Avenue site was adopted on September 11, 2014 that includes a total of eighteen 2 MW emergency generators.[9] The telecommunications facility at 5700 Third Street was never built and that site continues to contain a warehouse.

[8] San Francisco Planning Department, *200 Paul Avenue Final Mitigated Negative Declaration,* Case No. 2012.0153E, adopted September 26, 2013.

[9] San Francisco Planning Department, *320-400 Paul Avenue Final Mitigated Negative Declaration*, Case No. 2011.0408E, adopted September 11, 2014.

5.0 Changes in the Regulatory Environment

Since the adoption of the 2003 MND, several new policies, regulations, statutes, and funding measures have been adopted, passed, or are underway that affect the physical environment and/or environmental review methodology for projects in San Francisco. As discussed in each topic area referenced below, these policies, regulations, and statutes have or will implement mitigation measures or further reduce less-than-significant impacts identified in this Addendum. These include:

- On March 3, 2016, in anticipation of the future certification of revisions to CEQA Section 21099(b)(2), the San Francisco Planning Commission adopted Resolution 19579 and the state Office of Planning and Research's recommendation to use the VMT metric instead of automobile delay to evaluate the transportation impacts of projects (see Transportation section).
- The Construction Dust Control Ordinance, effective July 2008, requires a number of measures to reduce and manage fugitive dust at construction sites (see Air Quality section).
- Article 38 of the Health Code became effective on December 8, 2014 with the purpose of protecting public health and welfare by establishing an Air Pollutant Exposure Zone and imposing an enhanced ventilation requirement for all urban infill sensitive use development within the Air Pollutant Exposure Zone. The Air Pollutant Exposure Zone as defined in Article 38 are areas that, based on modeling of all known air pollutant sources, exceed health protective standards for cumulative $PM_{2.5}$ concentration, cumulative excess cancer risk, and incorporates health vulnerability factors and proximity to freeways. Projects within the Air Pollutant Exposure Zone require special consideration to determine whether the project's activities would expose sensitive receptors to substantial air pollutant concentrations or add emissions to areas already adversely affected by poor air quality (see Air Quality section). The modified project is located in an identified Air Pollutant Exposure Zone.
- The current Bay Area Air Quality Management District CEQA thresholds of significance for criteria air pollutants are generally lower than the thresholds in effect in 2003. The current thresholds of significance are provided in Table 1 in the Air Quality section.
- Article 22A of the Health Code, also known as the Maher Ordinance, was amended in August 2013 to include properties throughout the City where there is potential to encounter hazardous materials, primarily industrial zoning districts, sites with industrial uses or underground storage tanks, sites with historic bay fill, and sites in close proximity to freeways or underground storage tanks. The goal of the Maher Ordinance is to protect public health and safety by requiring appropriate handling, treatment, disposal and when necessary, remediation of contaminated soil that is encountered in the building construction process. Projects that disturb 50 cubic yards or more of soil that are located on sites with potentially hazardous soil or groundwater are subject to this ordinance (see Hazards and Hazardous Materials section).

6.0 Project Approvals

The Modified Project would require approval of a Conditional Use Authorization-Planned Unit Development to establish an Internet Services Exchange (ISE) with specific modifications to Planning Code requirements for off-street parking as defined in Planning Code Section 151..

7.0 Analysis of Potential Environmental Effects

As discussed above, CEQA Guidelines Section 15164 provides for the use of an addendum to document the basis of a lead agency's decision not to require a Subsequent or Supplemental EIR for a project that is already adequately covered in an existing certified EIR or negative declaration. The lead agency's decision to use an addendum must be supported by substantial evidence that the conditions that would trigger the preparation of a Subsequent EIR, as provided in CEQA Guidelines Section 15162, are not present. Since adoption of the 2003 FMND, no changes have occurred in the circumstances under which the currently proposed modifications were evaluated that would increase the severity of the project's impacts identified in the 2003 FMND. Similarly, no new information has emerged that would materially change the analyses or conclusions set forth in the 2003 FMND.

The 2003 FMND included evaluation of a Phase 2 buildout of the then-existing 124,633 sf structure that would have resulted in a 210,102 sf structure. As noted, Phase 2 was never begun. The Modified Project would result in a minor expansion of the existing structure, considerably less than the approximately 85,470 sf Phase 2 expansion evaluated in the 2003 FMND. Therefore, potential impacts resulting from the Modified Project with respect to Land Use, Visual Quality, Population, Utilities/Public Services, Biology, and Geology/Topography (Geology and Geologic Hazards), and Water (Hydrology) would remain similar or be less than the project analyzed in the 2003 FMND. ISE's are known to consume a considerable amount of energy and energy usage is discussed in this document. The 2003 FMND anticipated 53 employees while the Modified Project would employ up to 35 employees per shift or a total of 105 employees over the course of a day. As discussed below under Transportation and Circulation, the additional employees are expected to result in a less-than-significant impact with regards to traffic.

As noted, the 2003 FMND determined that the then-proposed project could result in potential impacts related to air quality (construction air quality and emergency generator emissions), hazardous materials (contaminated soil) and archeological resources. The Modified Project's potential impacts in regards to these environmental topics are therefore evaluated below. Because the make, model and location of the emergency generators have changed with the Modified Project, potential noise impacts are also evaluated.

The proposed changes to the 2003 project are minor and, as demonstrated below, would not result in any new significant environmental impacts. The effects of the proposed project would be substantially the same as reported in the 2003 FMND (Case No. 2000.280E 1828 Egbert Avenue). The following discussion provides the basis for this conclusion.

7.1 Air Quality

2003 FMND

As discussed above, the 2003 FMND project description contemplated soil disturbance for the Phase 2 expansion and the addition of 15 more emergency generators to the one included in the 2000 FMND project description. The 2003 FMND contained two mitigation measures related to air quality. Mitigation Measure 1 (Construction Air Quality) was included to address potential impacts related to construction dust and emissions from construction equipment used for the limited amount of soil disturbance for foundation excavation and site grading. Mitigation Measure 2 (Air Quality Impacts of Emergency

Generators) addressed criteria air pollutant and toxic air contaminant emissions from the 16 generators proposed to serve as emergency backup power for the data center. As detailed in a memorandum and technical report (Air Quality Memo and Technical Report) analyzing generator emissions from the Modified Project that compares the emergency generators for the 2003 FMND project with those proposed for the Modified Project, the generator configuration for the 2003 FMND project consisted of 12 Cummins QSK60 Engines at 2,000 KW each (equivalent to 24,000 KW) and four Caterpillar 3516 B engines at 2,000 KW each (equivalent to 8,000 KW) for a total of 32,000 KW of electric power generation.[10,11]

With implementation of Mitigation Measures 1 and 2, the 2003 FMND determined that the then-proposed project would not have a significant effect with respect to air quality.

Modified Project

Potential air quality emissions and health risk with operation of the Modified Project were analyzed in an Air Quality Memo and Technical Report.[12] As noted, the Modified Project would involve soil disturbance of about 8,960 sf and a minor amount of excavation for the two air shafts, modification of the parking lot, and the concrete slabs that were not evaluated in the 2003 FMND. This amount of soil disturbance is considerably less than the Phase 2 expansion evaluated in the 2003 FMND. Once operational, up to 35 individuals per shift would be working at the proposed facility or a total of 105 employees over the course of a day. In the event of a power failure at the proposed Modified Project site, twelve Caterpillar 3516C engines at 2,500 KW each (equivalent to 30,000 KW total) would provide emergency standby power for the proposed servers, chillers and other equipment supporting the internet service exchange. One Caterpillar C-15 engine emergency generator at 500 KW would provide "house power" in the event of a power failure. As noted in the Environmental Setting, the sensitive receptors (residences) immediately to the west and east of the project site in 2003 are present today. For the Modified Project, as for the 2003 FMND Project, the emergency generators would be operated only during unexpected grid power outages and during scheduled testing and maintenance periods.

The proposed project would result in two categories of potential air quality impacts: short-term impacts from construction and long-term impacts from operation. Operational emissions would occur with the testing of the emergency generators and with operation of the ISE facility (daily employee commuting trips and the lighting and cooling of the structure itself).

Construction Air Quality Impacts

Fugitive dust (PM_{10} and $PM_{2.5}$) would result from excavation and grading to prepare the 8,960 sf of ground surface for the air shafts, concrete pads and parking spaces. Criteria air pollutants (reactive organic gases [ROG], oxides of nitrogen [NOx], and particulate matter [PM_{10} and $PM_{2.5}$]), greenhouse gases (GHGs) and toxic air contaminants (TACs, including diesel particulate matter or DPM) would result from the use of diesel-powered heavy equipment and, to a lesser extent, worker and vendor vehicle trips to and from the project site. The total construction period for the proposed project is anticipated to be 180 days.

---

[10] Sage Environmental Consulting, *Memorandum Emission Levels from 1828 Egbert Avenue LLC,* April 6, 2016.

[11] Sage Environmental Consulting, *Technical Report No. 400-631-2-13 for 1828 Egbert Avenue Facility*, April 6, 2016.

[12] Ibid.

Construction Dust

The 2003 FMND included discussion of the soil disturbance associated with the Phase 2 expansion and Mitigation Measure 1 (retained from the 2000 FMND) required water to be sprayed on the site and the surrounding streets to be swept during construction activities to control fugitive dust:

> The project sponsor would require the contractor(s) to spray the site with water during construction activities; spray unpaved construction areas with water at least twice per day; cover stockpiles of soil, sand, and other material; cover trucks hauling debris, soils, sand, or other such material; and sweep surrounding streets during construction at least once per day to reduce particulate emissions.
>
> Ordinance 175-91, passed by the Board of Supervisors on May 6, 1991, requires that non-potable water be used for dust control activities. Therefore, the project sponsor would require that the contractor(s) obtain reclaimed water from the Clean Water Program for this purpose.

On July 30, 2008, the San Francisco Board of Supervisors approved a series of amendments to the San Francisco Building and Health Codes, generally referred to as the Construction Dust Control Ordinance (Ordinance 176-08). The intent of the Construction Dust Control Ordinance is to reduce the quantity of fugitive dust generated during site preparation, demolition, and construction work in order to protect the health of the general public and of on-site workers, minimize public nuisance complaints, and to avoid orders to stop work by DBI. Ordinance 176-08 requires that all site preparation work, demolition, or other construction activities within San Francisco that have the potential to create dust or to expose or disturb more than 10 cubic yards or 500 square-feet of soil comply with specified dust control measures whether or not the activity requires a permit from DBI. The Director of DBI may waive this requirement for activities on sites that are less than one half-acre that are unlikely to result in any visible wind-blown dust.

The Modified Project would involve a minor amount of construction and a limited amount of dust would be expected with the approximately 8,960-sf of surface preparation necessary for the air shafts, parking spaces and support pads for fuel and water tanks. This minor amount of soil disturbance would not result in significant amounts of fugitive dust. Nevertheless, in compliance with the Construction Dust Control Ordinance, the project sponsor and contractor responsible for construction activities at the project site would be required to control construction dust on the site through a combination of watering disturbed areas, covering stockpiled materials, street and sidewalk sweeping and other measures. These requirements are similar to the dust control provisions of the 2003 FMND Mitigation Measure 1. Therefore, the 2003 FMND Mitigation Measure 1 is no longer required.

Given the minor amount of soil disturbance and the regulations and procedures set forth by the San Francisco Dust Control Ordinance, construction dust impacts associated with the proposed project would be less-than-significant. Therefore, the Modified Project would not change the analysis or conclusions reached in the 2003 FMND with respect to construction dust.

Criteria Air Pollutants

Aside from the minor amount of soil disturbance to prepare the ground surface for the air shafts, the concrete pads, and the reconfigured parking lot, construction would also include building the two approximately 75-foot-tall air shafts discussed in Section 3 above. These construction activities would

involve the use of various off- and on-road heavy equipment and tools, and include trips to and from the project site by workers and vendors of materials. BAAQMD's *CEQA Air Quality Guidelines* (May 2011) provides screening criteria[13] to assist lead agencies in determining whether short-term construction-related air pollutant emissions could exceed the significance thresholds in Table 1 below. If a proposed project meets the screening criteria, then its construction would result in less-than-significant criteria air pollutant impacts. A project that exceeds the screening criteria may require a detailed air quality assessment to determine whether criteria air pollutant emissions would exceed significance thresholds. The size of the proposed construction activities are well below the criteria air pollutant screening size of 259,000 sf for the General Light Industry land use category identified in the BAAQMD's *CEQA Air Quality Guidelines*. Therefore, detailed modeling and quantification of construction-related criteria air pollutant emissions is not required and the proposed project's construction activities would result in a less-than-significant criteria air pollutant impact.

Construction Equipment TAC Emissions

Diesel-fueled construction equipment emit DPM, which is considered a TAC and potential health hazard, along with other TACs. The 2003 FMND included Mitigation Measure 1 (again, carried over from the 2000 FMND), which contains provisions related to construction emissions, stating:

> The project sponsors would require the project contractor(s) to maintain and operate construction equipment so as to minimize exhaust emissions of particulate and other pollutants, by such means as a prohibition on idling motors when equipment is not in use or when trucks are waiting in queues, and implementation of specific maintenance programs to reduce emissions for equipment that would be in frequent use for much of the construction period.

As noted in the discussion regarding Article 38 of the Health Code in Section 5.0 above, the project site is located within an identified Air Pollutant Exposure Zone. Although the proposed project would not be subject to Article 38 (which applies only to residences), sensitive receptors in residences are to the immediate east and west of the project site. Off-road equipment (including construction equipment) is a large contributor to DPM emissions in California, although since 2007, the CARB has found the emissions to be substantially lower than previously expected.[14] Additionally, a number of federal and state regulations require cleaner off-road equipment. Specifically, both the USEPA and California have set emissions standards for new off-road equipment engines, ranging from Tier 1 to Tier 4. Tier 1 emission standards were phased in between 1996 and 2000, and Tier 4 Interim and Final emission standards for all new engines were phased in between 2008 and 2015. Although the full benefits of these regulations will not be realized for several years, the USEPA estimates that by implementing the federal Tier 4 standards, NOx and PM emissions from construction equipment will be reduced by more than 90 percent.[15]

---

[13] Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, updated May 2011. See pp. 3-2 to 3-3.

[14] ARB, Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Proposed Amendments to the Regulation for In-Use Off-Road Diesel-Fueled Fleets and the Off-Road Large Spark-Ignition Fleet Requirements, p.1 and p. 13 (Figure 4), October 2010. Accessed at: http://www.arb.ca.gov/regact/2010/offroadlsi10/offroadisor.pdf

[15] USEPA, *"Clean Air Nonroad Diesel Rule: Fact Sheet,"* May 2004.

Furthermore, California regulations limit maximum idling times to five minutes, which further reduces public exposure to NOx and PM emissions.[16]

Construction activities do not lend themselves to assessments of long-term health risks because of their temporary and variable nature. As explained in the BAAQMD's CEQA Air Quality Guidelines:

> Due to the variable nature of construction activity, the generation of TAC emissions in most cases would be temporary, especially considering the short amount of time such equipment is typically within an influential distance that would result in the exposure of sensitive receptors to substantial concentrations. Concentrations of mobile-source diesel PM emissions are typically reduced by 70 percent at a distance of approximately 500 feet (ARB 2005). In addition, current models and methodologies for conducting health risk assessments are associated with longer-term exposure periods of 9, 40, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities. This results in difficulties with producing accurate estimates of health risk.[17]

Therefore, project-level analyses of construction activities have a tendency to overestimate assessments of long-term health risks. However, within the APEZ, additional construction activity may adversely affect populations that are already at a higher risk for adverse long-term health risks from existing sources of air pollution.

Construction activities for the Modified Project are expected to take about 180 days and would result in short-term emissions of DPM and other TACs in an area that already experiences poor air quality, potentially affecting nearby sensitive receptors. Implementation of modified 2003 FMND Mitigation Measure 1, Construction Emissions Minimization, would reduce this potential impact to a less-than-significant level. While emission reductions from limiting idling, educating workers and the public and properly maintaining equipment are difficult to quantify, other measures, specifically the requirement for equipment with Tier 2 engines and Level 3 Verified Diesel Emission Control Strategy (VDECS), can reduce construction emissions by 89 to 94 percent compared to equipment with engines meeting no emission standards and without a VDECS. Emissions reductions from the combination of Tier 2 equipment with Level 3 VDECS are almost equivalent to requiring only equipment with Tier 4 Final engines, which may not be yet readily available for engine sizes subject to the mitigation. 2003 FMND Mitigation Measure 1 has been modified with this Addendum to include a requirement that all construction equipment engines: (1) meet or exceed wither the USEPA or California Air Resources Board (ARB) Tier 2 off-road emissions standards; and (2) be retrofitted with an ARB Level 3 VDECS. Therefore, compliance with modified Mitigation Measure 1 would reduce construction emissions impacts on nearby sensitive receptors to a less-than-significant level. See page 22 for the full text of modified Mitigation Measure 1.

Operational Air Quality Impacts

The proposed ISE would result in direct and indirect operational emissions. Maintenance and reliability testing of the 13 backup generators (comprising 12 Caterpillar 3516C 2.5 MW engines and one Caterpillar

[16] Bay Area Air Quality Management District, *CEQA Guidelines*, page 8-6. May, 2011.

[17] Bay Area Air Quality Management District, *CEQA Guidelines*, page 8-6. May, 2011.

500 KW C-15 engine) would result in direct criteria air pollutant and toxic air contaminant emissions. Daily vehicle trips by employees and the lighting and cooling of the proposed facility would result in indirect criteria air pollutant emissions.

In order to ensure their ability to provide backup power should the electricity normally supplied by PG&E fail, each of the emergency generators would periodically undergo maintenance testing that would result in criteria air pollutant emissions and health impacts. The Air Quality Memo and Technical Report provides estimates for the amount of criteria air pollutants and health risk associated with the testing of the emergency generators based upon emissions specifications for the Caterpillar 3516 C and the Caterpillar C-15 engines.[18] Emissions were calculated according to two distinct maintenance testing scenarios that would represent best practices as determined by their manufacturer. Scenario A would involve testing each engine at 25 percent load 51 times per year, as well as testing each of the thirteen engines once per year at 100 percent load. Scenario B would involve testing each of the thirteen engines at 50 percent load as frequently as once per week (that is, up to 52 times per year). For both scenarios, each engine test would consist of operating the engine for 30 minutes at the specified load with an additional 15 minute period at idle (10 percent load) to allow the unit to cool down. The analysis provided in the Air Quality Memo and Technical Report is summarized under Criteria Air Pollutants and Health Risk below.

Criteria Air Pollutants

The 2003 FMND found that the then-proposed project would not violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation with respect to criteria air pollutants.

As noted under Section 5.0, the BAAQMD has revised its criteria air pollutant significance thresholds since 2003. The current thresholds for operational emissions are provided in Table 1 below.

Table 1. Current and 2003 Criteria Air Pollutant Significance Thresholds

Criteria Air Pollutants and Precursors	2011*		2003**	
	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (tpy)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (tpy)
ROG	54	10	80	15
NOx	54	10	80	15
PM_{10}	82	15	80	15
$PM_{2.5}$	54	10	NA	NA

* Bay Area Air Quality Management District CEQA Guidelines, May 2011, Table 2-1 Air Quality CEQA Thresholds of Significance.

***1828 Egbert Avenue, Final Mitigated Negative Declaration* (Case File No. 2000.280E), April 8, 2003.

[18] Sage Environmental Consulting, *Memorandum Emission Levels from 1828 Egbert Avenue LLC,* April 6, 2016.

For the Modified Project, daily and annual levels of criteria air pollutants resulting from maintenance testing of the proposed emergency generators are evaluated in the Air Quality Memo and Technical Report. Criteria air pollutants resulting from daily employee commuting trips and operation of the facility have been determined with the California Emissions Estimator Model (CalEEMod). The results of these two analyses are summarized below.

Emergency Generator Emissions

Again, two testing scenarios for the emergency generator engines are proposed based on recommendations from the generator manufacturer, Caterpillar: Scenario A, in which each engine would be tested 51 times per year at 25 percent load and one time per year at 100 percent load; and Scenario B, in which each engine would be tested at 50 percent load 52 times per year (i.e., weekly). Tables 2 and 3 below summarize the Air Quality Memo and Technical Report calculations for the daily and annual emissions of ROG, NOx and PM for the testing of one generator according to the load factors proposed in Scenarios A and B.

Table 2. Scenario A Maximum Daily Emissions per Generator

	Criteria Air Pollutant (lbs/day)		
Engine Type	**ROG**	**NOx**	**PM**
One Caterpillar 3516C Engine at 100% Load	0.8	27.5	0.28
One Caterpillar C-15 Engine at 100% Load	0	5.5	0.064
One Caterpillar 3516C Engine at 25% Load	0.7	5.7	0.238
One Caterpillar C-15 Engine at 25% Load	0.1	1	0.151

Source: Sage Environmental Consulting, *Technical Report No. 400-631-2-13 for 1828 Egbert Avenue Facility*, April 6, 2016, Compilation of Series 3, 4 and 5 tables.

Table 3. Scenario B Maximum Daily Emissions per Generator

	Criteria Air Pollutant (lbs/day)		
Engine Type	**ROG**	**NOx**	**PM**
One Caterpillar 3516C Engine at 50% Load	0.8	9.6	0.225
One Caterpillar C-15 Engine at 50% Load	0.1	1.2	0.09

Source: Sage Environmental Consulting, *Technical Report No. 400-631-2-13 for 1828 Egbert Avenue Facility*, April 6, 2016, Compilation of Series 3, 4 and 5 tables.

Having established the maximum daily emissions per generator engine under Scenarios A and B, Table 4 below provides calculations for the maximum number of generator engines that could be feasibly tested in one day without exceeding the BAAQMD significance thresholds. In this instance, "feasibly tested" refers to the number of generators that could be feasibly tested by a technician in one day. Assuming that each generator test takes at least one hour, the most a technician could reasonably be expected to test in a standard work day would be eight generators.

As indicated for Scenario A, the testing of engines for eight Caterpillar 3516C and one Caterpillar C-15 per day at 25 percent load would not exceed BAAQMD daily emissions significance thresholds or annual

significance thresholds (which would include the testing of each generator 51 times per year at 25 percent load plus each generator one time per year at 100 percent load). Under Scenario B, the testing of up to five Caterpillar 3516C generators and one Caterpillar C-15 generator could be tested per day at 50 percent load without exceeding the BAAQMD significance thresholds. (For purposes of calculating emissions from diesel engines, PM is considered equivalent to PM_{10} plus $PM_{2.5}$.) The analysis found that no more than one Caterpillar 3516C engine could be tested per day at 100 percent load because, as indicated in Table 2, one hour at that load results in NOx emissions of 27.5 pounds, more than half the BAAQMD threshold of 54 pounds per day. Accordingly modified Mitigation Measure 2 specifies that limitation.

Table 4. Daily (lbs/day) and Annual (tons/year) Emissions Resulting from the Maximum Number of Generators Tested per Day Under Scenarios A and B

Parameter	Scenario A*	Scenario B**	BAAQMD Threshold
Daily ROG (lbs/day)	5.7	4.4	54
Annual ROG (tons/year)	0.22	0.27	10
Daily NOx (lbs/day)	46.9	49.0	54
Annual NOx (tons/year)	1.95	3.01	10
Daily $PM_{10}/PM_{2.5}$ (lbs/day)	2.1	1.2	82/54***
Annual $PM_{10}/PM_{2.5}$ (tons/year)	0.08	0.07	15/10

*Scenario A: Maximum daily emissions when eight 3516C engines and one C-15 engine are tested at 25% load. Annual emissions include the annual total weekly testing plus the one time per year testing of each generator at 100 percent load.

**Scenario B: Maximum daily emissions when five 3516C engines and one C-15 engine are tested at 50% load.

***BAAQMD identifies different thresholds for PM_{10} and $PM_{2.5}$, both of which are shown above.

Source: Sage Environmental Consulting, *Technical Report No. 400-631-2-13 for 1828 Egbert Avenue Facility*, April 6, 2016, Tables 1-3 and 1-4.

Table 4 also shows that under either a Scenario A or B, the annual emissions would be well below the BAAQMD threshold for ROG, NOx and PM. For maintenance testing of the 12 Caterpillar 3516C 2.5 MW generators and the one Caterpillar C-15 500 KW generator, the BAAQMD criteria air pollutant would be met under both Scenario A and B as follows:

- Only one Caterpillar 3516C engine per day and one Caterpillar C-15 engine per day are allowed to be tested at 100 percent load under Scenario A;
- As many as eight Caterpillar 3516C engines per day and one Caterpillar C-15 engine per day can be tested at 25 percent load under Scenario A;
- As many as five Caterpillar 3516C engines per day and one Caterpillar C-15 engine per day can be tested at 50 percent load under Scenario B; and
- Testing with a frequency of once-per-week under either Scenario A or B would result in emissions that are below the BAAQMD CEQA thresholds of significance.

These maintenance testing limitations are included in modified Mitigation Measure 2.

The Air Quality Memo also compared emissions from the 2003 FMND Project and the Modified Project. As indicated in Table 5, the engines proposed for the Modified Project would also result in fewer emissions than those approved for the 2003 FMND project. Note that the 2003 FMND Project emissions represent the maximum daily emissions from the testing of two Caterpillar 3516B engines operating at full load for one hour each during any one day.[19] This testing scenario for the 2003 Project is consistent with the Authority to Construct (ATC) issued by the Bay Area Air Quality Management District for the 2003 FMND Project in 2003.[20]

Table 5. Summary of 2003 Project and Proposed 2016 Project Maximum Daily Emissions (lbs/day)

Criteria Air Pollutant	2003 Project	2016 Project Scenario A	Percent Reduction	2016 Project Scenario B	Percent Reduction
NOx	73.2	46.9	36%	49	33.1%
ROG	3.5	0.9	74.3%	0.7	81.3%
Particulate Matter (PM)	1.1	0.3	72.7%	0.2	81.8%

Sage Environmental Consulting, *Technical Report No. 400-631-2-13 for 1828 Egbert Avenue Facility*, April 6, 2016, Table 1-7.

Table 6 provides the annual emissions for the same comparison between the 2003 FMND Project and the Modified Project.

Table 6. Summary of 2003 Project and Proposed 2016 Project Maximum Annual Emissions (tons/year)

Criteria Air Pollutant	2003 Project	2016 Project Scenario A	Percent Reduction from 2003	2016 Project Scenario B	Percent Reduction from 2003
NOx	12.5	1.95	84.4%	3.01	75.9%
ROG	0.53	0.03	94.3%	0.04	92.5%
Particulate Matter (PM)	0.27	0.01	96.3%	0.01	96.3%

Sage Environmental Consulting, *Technical Report No. 400-631-2-13 for 1828 Egbert Avenue Facility*, April 6, 2016, Table 1-8.

Note that the emissions calculated for 2016 Scenario A and B assume an 85 percent reduction in emissions that would result with installation of Level 3 VDECS, as required by the modified Mitigation Measure 2. Therefore, testing of the generators proposed for the Modified Project, under either Scenario A or B, would result in substantial reductions in maximum daily emissions of ROG, NOx, and PM in comparison with the 16 generators approved for the 2003 FMND Project.

[19] 12 generators with Cummins QSK60 engines and four generators with Caterpillar 3516B engines were approved for use in the 2003 FMND Project. The Caterpillar 3516B engine is used for the modeling in Table 5 because it has higher emissions than the Cummins QSK60 engine, leading to a more conservative comparison with the Scenarios A and B analyzed here.

[20] San Francisco Bay Area Air Quality Management District, *Authority to Construct for San Francisco Self Storage III*, Application Number 2780, Plant Number 13120, April 28, 2003.

Daily Employee Trips and Operation of the Proposed Facility

Operational emissions apart from the emergency generators, such as employee and visitor vehicle trips and maintenance activities, were calculated with the California Emissions Estimator Model (CalEEMod).[21] As discussed under Transportation below, up to 150 daily vehicle trips to and from the facility are anticipated to result from the Modified Project. Operational emissions resulting from vehicle trips and maintenance activities, excluding testing of the emergency generators discussed above, equates to average daily emissions of approximately 4.1 lbs/day of ROG, 2.2 lbs/day of NOx. On an annual basis, operational emissions resulting from vehicle trips and maintenance activities would equate to maximum annual emissions of approximately 0.74 tons/year of ROG, 0.38 tons/year of NOx, and 0.24 tons/year of $PM_{2.5}/PM_{10}$.

Conclusion – Operational Criteria Air Pollutants

Tables 7 and 8 below summarize the total operational criteria air pollutant emissions for the proposed project, including emissions from the testing of the emergency generators under Scenario A and B, employee trips and operation of the facility.

Table 7. Total Criteria Air Pollutant Emissions for the Proposed Modified Project, Scenario A

	ROG		NOx		PM	
	Daily (lbs/day)	Annual (tons/year)	Daily (lbs/day)	Annual (tons/year)	Daily (lbs/day)	Annual (tons/year)
Scenario A	5.7	0.22	46.9	1.95	2.1	0.08
Facility Operation	4.1	0.74	2.2	0.38	1.4	0.24
Total	9.8	0.96	49.1	2.33	3.5	0.32
BAAQMD Threshold	*54*	*10*	*54*	*10*	*82/54*	*15/10**

*BAAQMD identifies different thresholds for PM_{10} and $PM_{2.5}$, both of which are shown above.

Table 8. Total Criteria Air Pollutant Emissions for the Proposed Modified Project, Scenario B

	ROG		NOx		PM	
	Daily (lbs/day)	Annual (tons/year)	Daily (lbs/day)	Annual (tons/year)	Daily (lbs/day)	Annual (tons/year)
Scenario B	4.4	0.27	49.0	3.01	1.2	0.07
Facility Operation	4.1	0.74	2.2	0.38	1.4	0.24
Total	8.5	1.01	51.2	3.39	2.6	0.31
BAAQMD Threshold	*54*	*10*	*54*	*10*	*82/54*	*15/10**

* BAAQMD identifies different thresholds for PM_{10} and $PM_{2.5}$, both of which are shown above.

The total maximum daily and annual operational criteria air pollutant emissions would not exceed the BAAQMD thresholds. Therefore, the Modified Project would result in less than significant impacts with regards to criteria air pollutant emissions.

[21] The CalEEMod input file and model results are provided in Appendix A.

Local Health Risks and Hazards.

In addition to criteria air pollutants, operation of the emergency generators for the Modified Project would also emit TACs and diesel particulate matter (DPM). As noted in Section 5.0 above, the project site is located within an Air Pollutant Exposure Zone and sensitive (residential) receptors are to the immediate east and west of the project site. In regards to stationary sources of TACs such as the emergency generators proposed for the 2003 FMND project and the Modified Project, exposure to fine particulate matter ($PM_{2.5}$) is of primary concern.[22]

The 2003 FMND evaluated the then-proposed project's specific air quality impacts and health risk associated with the use of 16 emergency generators and determined that with implementation of Mitigation Measure 2, sensitive receptors would not be exposed to substantial pollutant concentrations. The 2003 FMND Mitigation Measure 2 contains several requirements in regards to the type of generator engine and its operation. Reliability testing was limited to 46 hours per year for each of the 16 generators, or a total of 736 hours.

The emergency generators proposed for the Modified Project would be permitted as emergency standby diesel engines as defined in the California Air Resources Board's Airborne Toxics Control Measure (ATCM) for Stationary Compression Ignition Engines. The ATCM requires a $PM_{10}/PM_{2.5}$ emission factor of 0.15 grams per brake horsepower – hour (g/bhp-hr) or less for emergency standby engines, and limits testing and maintenance operation of each engine in this category to no more than 50 annual hours.[23] The proposed emergency generators would be subject to BAAQMD's New Source Review (Regulation 2, Rule 5) permitting process that limits the excess cancer risk from any facility to no more than ten per one million persons. New Source Review also requires any source that would result in an excess cancer risk of greater than one per one million persons to install Best Available Control Technology for Toxics (TBACT).

In accordance with the ATCM requirements stated above, the proposed emergency generator Caterpillar 3516C and Caterpillar C-15 engines are rated as United States Environmental Protection Agency (EPA) Emergency Stationary/Tier 2-equivalent engine with a California Air Resources Board (CARB) certified emission factor for particulate matter of 0.13 and 0.09 g/bhp-hr, respectively. The proposed emergency generator engine emission factors therefore meet the BAAQMD ATCM requirement of 0.15 g/bhp-hr.

Engines exceeding BAAQMD's Best Available Control Technology (BACT) threshold of 10 pounds or more per highest day for certain criteria and ozone precursor pollutants are required to comply with BACT requirements. The BACT threshold would be met for all applicable pollutants by the use of an EPA Emergency Stationary/Tier 2-equivalent engine, in particular for PM by use of an engine with a PM emission factor below 0.15 g/bhp-hr. As indicated in Table 9 below, the proposed engines meet these standards.

---

[22] For the purposes of calculating PM emissions from diesel engines, DPM is assumed to be equivalent to $PM_{2.5}$ and PM_{10} because diesel combustion produces particulate matter that is primarily comprised of fine particulate matter.

[23] California Air Resources Board, Airborne Toxics Control Measure for Stationary Compression Ignition Engines, 17 Cal. Code Regs. § 93115.6(a)(3)(A)1.c. (May 19, 2011).

Table 9. Proposed Generator Emission Levels and BAAQMD BACT Standards[24]

Pollutant	BAAQMD BACT Standard	Proposed Engine Emission Levels	
		Caterpillar 3516C	Caterpillar C-15
Non-Methane Hydrocarbons plus Nitrogen Oxides (NMHC+Nox)	6.4 g/kw-hr	5.8 g/kw-hr	5.5 g/kw-hr
Particulate Matter (PM)	0.20 g/kw-hr	0.17 g/kw-hr	0.12 g/kw-hr
Carbon Monoxide (CO)	3.5 g/kw-hr	1.0 g/kw-hr	1.8 g/kw-hr

Source for Engine Emission Levels: Sage Environmental Consulting, *Technical Report No. 400-631-2-13 for 1828 Egbert Avenue Facility*, April 6, 2016, Tables 1-9 and 1-10.

Further, as required by Modified Mitigation Measure 2, the proposed engines would be equipped with a Level 3 diesel particulate filter to further reduce PM emissions a minimum of 85 percent.

The Air Quality Memo and Technical Report provide a health risk assessment based upon modeling for Scenarios A and B, with all engines fitted with a Level 3 VDECS. As indicated in Table 10 below, testing of the proposed emergency generator engines according to either Scenario A or B would result in a facility excess cancer risk that is well below the BAAQMD New Source Review standard of 10 in one million persons.

Table 10. Inhalation Risk for Particulate Emissions for the Proposed Emergency Generator Engines

Parameter	Scenario A	Scenario B
Predicted Maximum Annual DPM Concentration Averaged Over Two Years (µg /m^3)	0.0034	0.0022
Facility Excess Cancer Risk (in one million)	1.02	0.66
BAAQMD Threshold (in one million)	*10*	*10*

Source: Sage Environmental Consulting, *Technical Report No. 400-631-2-13 for 1828 Egbert Avenue Facility*, April 6, 2016, Table 1-6

Finally, as indicated in Table 5 above, there would be an approximately 67 percent reduction in daily PM emissions under Scenario A and an approximately 83 percent reduction in daily PM emissions under Scenario B in comparison with the 2003 FMND Project. As indicated in Table 6 above, there would be an approximately 96 percent reduction in annual PM emissions under Scenario A and B in comparison with the 2003 FMND Project.

For the above reasons, maintenance and reliability testing of the generators proposed for the Modified Project would have a less than significant impact with regards to toxic air contaminants.

[24] Bay Area Air Quality Management District, *Best Available Control Technology (BACT) Guideline, IC Engine-Compression Ignition: Stationary Emergency, non-Agricultural, non-direct drive fire pump*. Document 96.1.3. 12/22/2010. Available at: http://hank.baaqmd.gov/pmt/bactworkbook/.

Cumulative Health Risk

As noted above, the project site within an Air Pollutant Exposure Zone. The threshold of significance used to evaluate health risks from new sources of TACs is based on the potential for the proposed project to substantially affect the geography and severity of the Air Pollutant Exposure Zone at sensitive receptor locations. For project sites within an Air Pollutant Exposure Zone, a proposed project's $PM_{2.5}$ concentrations above 0.2 μg/m3 or an excess cancer risk greater than 7.0 per million would be considered a significant impact.[25]

In its health risk assessment, the 2003 FMND considered impacts from the then-proposed project in addition to the following other facilities:

- An existing telecommunications center at 200 Paul Avenue which, at full build-out, was anticipated to include 22 generators, each with diesel particulate filters and elevated exhaust stacks.
- A proposed telecommunications center at 400 Paul Avenue with a total of seventeen 2-MW generators.
- A proposed telecommunications center at 5700 Third Street with seventeen 2-MW generators.

The 2003 FMND noted that emission impacts occur downwind of each facility and, because prevailing winds are from the west, the highest impacts would be found to the east of the facilities. The contribution from the then-proposed 1828 Egbert Avenue project to the cumulative health risk would have been 0.06 excess cancer cases per million persons at the most affected residential receptors, and the cumulative maximum risk assessment for the four projects was determined to be 2.48 excess cancer cases per million persons. The 2003 FMND concluded that sensitive receptors would not be exposed to substantial, cumulative pollutant concentrations.

As noted under "2003 and Current Setting," a FMND for a new internet service exchange at the 400 Paul Avenue site was adopted on September 11, 2014 that includes operation of eighteen 2-MW emergency generators. While the 400 Paul Avenue project includes eighteen additional generators, that negative declaration contains mitigation measures similar to Modified Mitigation Measure 2 that would reduce health risk to less than significant.[26] The FMND for an expansion of an existing internet service exchange at 200 Paul Avenue was adopted on September 26, 2013 and evaluated eighteen 2-MW emergency generators (in addition to the 17 existing generators).[27] This analysis concluded that with proposed generator upgrades required as part of the environmental review, the project would result in no net

---

[25] A 0.2 μg/m3 increase in $PM_{2.5}$ would result in a 0.28 percent increase in non-injury mortality or an increase of about twenty-one excess deaths per 1,000,000 population per year from non-injury causes in San Francisco. This information is based on Jerrett M et al. 2005. Spatial Analysis of Air Pollution and Mortality in Los Angeles. Epidemiology. 16:727-736. The excess cancer risk has been proportionally reduced to result in a significance criteria of 7 per million persons exposed.

[26] San Francisco Planning Department, *320-400 Paul Avenue Final Mitigated Negative Declaration*, Case No. 2011.0408E, adopted September 11, 2014.

[27] San Francisco Planning Department, *200 Paul Avenue Final Mitigated Negative Declaration*, Case No. 2012.0153E, adopted September 26, 2013.

increase in criteria pollutants and consequently, health risks. The telecommunications facility at 5700 Third Street was never built and the site continues to contain a warehouse.

The emergency generators proposed for use in the Modified Project would result in the emission of fewer TACs than the emergency generators evaluated in the 2003 FMND and those TAC emissions would be reduced further with implementation of modified Mitigation Measure 2. In addition, mitigation measures associated with the 200 and 400 Paul Avenue projects would similarly reduce emergency generator emissions and the 5700 Third Street ISE evaluated in the 2003 FMND was never constructed. As shown in Table 10, the modified project would result in an excess cancer risk of one per million persons exposed and annual average $PM_{2.5}$ concentration of 0.003 $\mu g/m^3$. These are well below the excess cancer risk of seven in one million and 0.2 $\mu g/m^3$ significance thresholds identified above. Therefore, cumulative health risk impacts resulting from the Modified Project plus cumulative projects would be less than those determined for the 2003 FMND project and less-than-significant.

Modified 2003 FMND Mitigation Measures for Air Quality

The 2003 FMND determined that Mitigation Measures 1 (Construction Air Quality) and 2 (Air Quality Impacts of Emergency Generators) were necessary to avoid potential significant impacts related to construction air quality and emergency generator emissions, respectively. As discussed above and summarized below, modifications to these two mitigation measures would (1) better reflect the current regulatory setting of the proposed Modified Project, and (2) provide an equal or higher level of mitigation in regards to the respective impacts they are addressing.

Modified Mitigation Measure 1

As discussed above under "Construction Air Quality," the regulations and procedures set forth by the San Francisco Dust Control Ordinance supersede the dust control provisions of the 2003 FMND Mitigation Measure 1, which would therefore no longer apply to the construction activities proposed for the Modified Project. In regards to construction equipment emissions, the project site is within an identified Air Pollutant Exposure Zone and more effective emissions control technologies are now available than in 2003 that would further reduce construction exhaust emissions. In particular, modified Mitigation Measure 1 would require that the project sponsor: (1) prepare a Construction Emissions Minimization Plan, (2) ensure that all construction equipment over 25 horsepower and operating for more than 20 hours over the duration of the construction activities be equipped with engines that meet or exceed either U.S. Environmental Protection Agency (USEPA) or California Air Resources Board (ARB) Tier 2 off-road emission standards, and are retrofitted with an ARB Level 3 Verified Diesel Emissions Control Strategy (VDECS), and (3) require that idling time for off-road and on-road equipment be limited to no more than two minutes, except as provided in exceptions to the applicable state regulations regarding idling for off-road and on-road equipment.

Accordingly, Mitigation Measure 1 has been modified as follows:[28]

Mitigation Measure 1. Construction Air Quality

[28] ~~Strikethrough~~ indicates words removed and <u>double-underscore</u> indicates words added.

~~The project sponsor would require the contractor(s) to spray the site with water during construction activities; spray unpaved construction areas with water at least twice per day; cover stockpiles of soil, sand, and other material; cover trucks hauling debris, soils, sand, or other such material; and sweep surrounding streets during construction at least once per day to reduce particulate emissions.~~

~~Ordinance 175-91, passed by the Board of Supervisors on May 6, 1991, requires that non-potable water be used for dust control activities. Therefore, the project sponsor would require that the contractor(s) obtain reclaimed water from the Clean Water Program for this purpose. The project sponsors would require the project contractor(s) to maintain and operate construction equipment so as to minimize exhaust emissions of particulate and other pollutants, by such means as a prohibition on idling motors when equipment is not in use or when trucks are waiting in queues, and implementation of specific maintenance programs to reduce emissions for equipment that would be in frequent use for much of the construction period.~~

The project sponsor or the project sponsor's Contractor shall comply with the following:

A. *Construction Emissions Minimization Plan.* Prior to issuance of a construction permit, the project sponsor shall submit a Construction Emissions Minimization Plan (Plan) to the Environmental Review Officer (ERO) for review and approval by an Environmental Planning Air Quality Specialist. The Plan shall detail project compliance with the following requirements:

1. All off-road equipment greater than 25 hp and operating for more than 20 total hours over the entire duration of construction activities shall meet the following requirements:
    a) Where access to alternative sources of power are available, portable diesel engines shall be prohibited;
    b) All off-road equipment shall have:
        i. Engines that meet or exceed either U.S. Environmental Protection Agency (USEPA) or California Air Resources Board (ARB) Tier 2 off-road emission standards, and
        ii. Engines that are retrofitted with an ARB Level 3 Verified Diesel Emissions Control Strategy (VDECS).[29]
    c) Exceptions:
        i. Exceptions to A(1)(a) may be granted if the project sponsor has submitted information providing evidence to the satisfaction of the ERO that an alternative source of power is limited or infeasible at the project site and that the requirements of this exception provision apply. Under this circumstance, the sponsor shall submit documentation of compliance with A(1)(b) for onsite power generation.
2. The project sponsor shall require the idling time for off-road and on-road equipment be limited to no more than two minutes, except as provided in exceptions to the applicable state regulations regarding idling for off-road and on-road equipment. Legible and visible signs shall be posted in multiple languages (English, Spanish, Chinese) in designated queuing areas and at the construction site to remind operators of the two

[29] Equipment with engines meeting Tier 4 Interim or Tier 4 Final emission standards automatically meet this requirement, therefore a VDECS would not be required.

minute idling limit.

3. The project sponsor shall require that construction operators properly maintain and tune equipment in accordance with manufacturer specifications.
4. The Plan shall include estimates of the construction timeline by phase with a description of each piece of off-road equipment required for every construction phase. Off-road equipment descriptions and information may include, but is not limited to: equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel usage and hours of operation. For VDECS installed: technology type, serial number, make, model, manufacturer, ARB verification number level, and installation date and hour meter reading on installation date.
5. The Plan shall be kept on-site and available for review by any persons requesting it and a legible sign shall be posted at the perimeter of the construction site indicating to the public the basic requirements of the Plan and a way to request a copy of the Plan. The project sponsor shall provide copies of Plan to members of the public as requested.

B. *Reporting*. Quarterly reports shall be submitted to the ERO indicating the construction phase and off-road equipment information used during each phase including the information required in A(4). Within six months of the completion of construction activities, the project sponsor shall submit to the ERO a final report summarizing construction activities. The final report shall indicate the start and end dates and duration of each construction phase. For each phase, the report shall include detailed information required in A(4).

C. *Certification Statement and On-site Requirements.* Prior to the commencement of construction activities, the project sponsor must certify (1) compliance with the Plan, and (2) all applicable requirements of the Plan have been incorporated into contract specifications.

Modified Mitigation Measure 2

As discussed above under "Criteria Air Pollutants" and "Health Risk and Hazards" above, since 2003, more effective emissions control technologies are now available to further reduce emissions from proposed emergency generators. The 2003 FMND Mitigation Measure 2 has been modified to include the following requirements:

Mitigation Measure 2. Air Quality Impacts of Emergency Generators

In addition to the use of low particulate emission engines, the following operations and equipment are proposed as part of the project and would be implemented to meet as conditions of BAAQMD BACT permit requirements for emergency generators.

- The emergency generator engines will be limited to only operate for reliability testing and for emergency operations. Emergency operation is limited to periods when the primary source of electrical power (the local utility grid) fails. The emergency generators ~~would~~ will not be used for load shedding.
- Reliability testing of the diesel emergency generator engines will be limited to ~~736~~ 650 hours per year for combined engines (~~46~~ 50 hours per year for each of the ~~16~~ 13 engines). The number of hours for reliability testing for each emergency generator engine would be limited to an average of ~~46~~ 50 hours per year or an annual cumulative total of ~~736~~ 650 hours for the ~~16~~13 generators.

- The project sponsor shall ensure that each emergency generator meets or exceeds one of the following emission standards for particulate matter: Tier 4 certified engine (interim or final), or (2) use of a current EPA Tier 2 or Tier 3 certified engine that is equipped with a California Air Resources Board (ARB) Level 3 Verified Diesel Emissions Control Strategy (VDECS). A non-verified diesel emission control strategy may be used if the filter is identical to the ARB verified model and if the Bay Area Air Quality Management District (BAAQMD) approves of its use. The project sponsor shall submit documentation of compliance with the BAAQMD New Source Review permitting process (Regulation 2, Rule 2, and Regulation 2, Rule 5) and the emission standard requirement of this mitigation measure to the San Francisco Planning Department for review and approval prior to issuance of a building permit from the Department of Building Inspection.
- Once operational, all emergency generators and VDECS shall be maintained in good working order in perpetuity and any future replacement of the diesel backup generators and Level 3 VDECS filters shall be required to be consistent with these emissions specifications.
- For each emergency generator permit submitted for the 1828 Egbert Avenue site, engine and filter specifications shall be submitted to the San Francisco Planning Department for review and approval prior to issuance of a permit for the generator from the San Francisco Department of Building Inspection.
- Annual maintenance testing of the emergency generator engines shall occur under one of two scenarios as follows:
    - Scenario A: each emergency generator engine ~~is~~may be tested no more than one time per year at 100 percent load and no more than 51 times per year at 25 percent load.
    - Scenario B: each emergency generator engine ~~is~~may be tested no more than 52 times per year at 50 percent load.

  Under either Scenario A or Scenario B, testing of each individual emergency generator engine shall involve operating at the designated load for 30 minutes followed by operation of the engine at idle for 15 minutes to allow for cooling before shutting down.
- If Scenario A is employed as the maintenance testing schedule, then no more than eight emergency generator engines may be tested at 25 percent load in one day and no more than one generator may be tested at 100 percent load in one day.
- If Scenario B is employed as the testing and maintenance schedule, then no more than five emergency generator engines may be tested during any one day at no more than 50 percent load.
- Testing of all emergency generator engines shall only be conducted between the hours of 8:00 AM to 5:00 PM, Monday through Friday. No more than one emergency generator engine may be tested at any one time.
- Prior to issuance of a building permit from the Department of Building Inspection, the operator of the facility shall provide notice to the San Francisco Planning Department regarding whether it will conduct annual emergency generator engine testing under either Scenario A or Scenario B over the course of a year. The facility operator shall also notify the San Francisco Planning Department anytime it changes from one annual testing scenario to the other.

- The operator of the facility shall maintain records of the testing schedule for each emergency generator engine for the life of that emergency generator. The records shall specify under which scenario the emergency generator engines are tested and the number of hours of testing under the designated load and at idle. This information shall be provided for review to the San Francisco Planning Department annually for the first three years, starting with the first submittal in 2017. Thereafter, this information may be provided on a less frequent schedule as approved by the San Francisco Planning Department.
- Each emergency generator engine will be EPA-certified to be a low-hydrocarbon emitting engine.
- Each emergency generator engine will be EPA-certified to be a low carbon monoxide emitting engine.
- Each engine will be equipped with a turbocharger, low temperature after-cooling, and variable timing (NOx emission control measures).
- Each engine will be fueled with very-low sulfur (15 ppm) diesel fuel or renewable diesel fuel. ~~This measure would reduce emissions of sulfur dioxide, would improve the performance of the diesel particulate filters, and would result in reduced diesel particulate emissions.~~
- ~~Each engine will be equipped with a Level 3 diesel particulate filter (DPF) equipped with a pre-heater to reduce emissions by 85%.~~
- ~~Emergency use of each generator would be limited to an annual average of 10 hours per year for the 16 generators over the life of the proposed project. This estimate is based on the historical reliability of PG&E. A maximum of 12 engine generators will be utilized during emergency generation. Based on this restriction, the extent of average annual use of the generators for both emergencies and testing would be limited to conform with the AWR Engineering Group report, *Cumulative Air Pollution Impact Report for Diesel Engine Generators for 1828 Egbert Avenue*, April 2002 which were prepared in conjunction with this environmental document.~~ Any future modifications affecting the combined average annual levels of use for the generators shall require a modification of any conditional use permit issued to authorize the 1828 Egbert Avenue project and they shall require resubmittal for a modified source permit for the BAAQMD.

Conclusion

The Modified Project, which would involve minor construction activities and the installation of emergency generators with lower criteria air pollutant and TAC emissions than those proposed for the 2003 FMND Project, would result in less-than-significant air quality impacts with regard to construction dust and exhaust emissions, criteria air pollutants, and health risk.

As indicated in the discussion under criteria air pollutants above, the daily commuting of the 105 employees and operation of the building itself are not expected, when added to the criteria air pollutants emitted by testing of the emergency generators, to exceed the applicable BAAQMD threshold. The proposed modifications to 2003 FMND Mitigation Measures 1 and 2 incorporate updated emissions control technologies and regulatory changes that have occurred since 2003 and would provide equal or improved protection of air quality as it may be affected by construction and operation of the Modified Project.

With regard to potential air quality impacts, there have been no substantial changes to the Modified Project as proposed or to its environmental setting. The changes proposed for the Modified Project would not result in any new significant impacts with regards to air quality that would require preparation of a subsequent negative declaration or EIR.

7.2 Hazards (Soil Contamination)

2003 FMND

A Phase I Environmental Site Assessment (ESA) prepared in 1999 for the 2000 FMND disclosed that the project site was developed in 1941 as a food processing facility and, over time, had various other subsequent land uses including an auto repair shop.[30] The 2000 FMND determined that potential health hazards related to lead-contaminated soils would be reduced to less-than-significant with implementation of a mitigation measure, also included in the 2003 FMND as Mitigation Measure 3, which comprised four steps. Step 1 provided procedures for the testing and determination of whether or not lead-contaminated soils were present. If the Department of Public Health (DPH) determined that lead contamination in the soils would be potentially hazardous, the project sponsor would have to comply with Step 2 and prepare a Site Mitigation Plan that details alternatives for managing the contaminated soils and identifies the preferred alternative. Step 3 requires that the Site Management Plan include provisions for the handling, hauling and disposal of lead-contaminated soils, including specific work practices, dust suppression, surface water runoff control, soils replacement (as necessary), and hauling and disposal at a permitted hazardous waste disposal facility registered with the State of California. Step 4 involves preparation and submittal to DPH of a closure report certifying that the contaminated soils have been handled and disposed as required by the Site Mitigation Plan.

Modified Project

Soil disturbance at the project site occurred in 2000-2001 with the demolition of the previous structures and construction of the existing building. As discussed above, the Phase 2 expansion considered by the 2003 FMND did not occur, no generators were installed, and the then-proposed ISE was not implemented. Instead, the existing structure, completed in 2004, has been used as a self-storage facility. Excepting construction of the existing building, no changes to the conditions described in the 1999 Phase I ESA have occurred with respect to potentially contaminated soils. The approximately 590 cubic yards of soil that would be excavated for the Modified Project was not evaluated in the 2000 FMND or the 2003 FMND.

Since publication of the 2003 FMND, the City has amended Article 22A of the Health Code, also known as the Maher Ordinance. Potentially contaminated soils are regulated by this ordinance, which is administered and overseen by DPH. The project site is located in an area with potentially contaminated soils as identified by the Department of Public Health's Maher Map.[31] The over-arching goal of the Maher

[30] EnviroNet Consulting, *Phase I Environmental Site Assessment for the Evaluation of Potentially Hazardous Materials, 1828 Egbert Avenue, San Francisco, California 94124*. March 17, 1999

[31] San Francisco Department of Public Health Maher Map. Available online at:

Ordinance is to protect public health and safety by requiring appropriate handling, treatment, disposal and, when necessary, remediation of contaminated soils that are encountered in the building construction process. Projects that disturb 50 cubic yards or more of soil on sites with potentially hazardous soil or groundwater are subject to this ordinance. The preparation of the Phase I ESA and the four steps noted above for Mitigation Measure #3 are consistent with the requirements of the Maher Ordinance. Therefore, as the Modified Project would disturb more than 50 cubic yards of soil, the provisions of the Maher Ordinance would apply to the proposed soil disturbing work and supersede the requirements of the 2003 FMND Mitigation Measure 3. The project sponsor submitted an application to DPH to be enrolled in the Maher program on April 21, 2016.

Hazardous building materials were not evaluated in the 2003 FMND.[32] Hazards related to the demolition of the existing interior partitions are not expected because those partitions were constructed in 2004, well after the use of asbestos for various types of insulation and lead additives to paints were banned.

Conclusion

With regard to potential impacts related to contaminated soils and groundwater, the Modified Project would involve less soil disturbance than would have occurred with the Phase 2 expansion considered by the 2003 FMND. In addition, there have been no changes to the environmental setting as it pertains to soil contamination. To the extent that hazardous soils or groundwater may be encountered during the proposed excavation, the project would be required to remediate any potential contamination in accordance with the Maher Ordinance. If determined necessary by DPH, a Site Management Plan would be developed to ensure safe handling, hauling and disposal as required by local, state and federal regulations. Compliance with the Maher Ordinance would reduce potential impacts associated with contaminated soils and/or groundwater to less-than-significant. Hazardous building materials are not expected with the demolition of interior partitions and no impact would occur relating to their safe handling and disposal.

The changes proposed for the Modified Project would not result in any new significant impacts with regards to soil and water contamination that would require preparation of a subsequent negative declaration or EIR.

7.3 Cultural Resources (Archaeology)

2003 FMND

The 2003 FMND Mitigation Measure 4 requires the project sponsor to distribute the Planning Department's archeological resource "ALERT" sheet to the prime contractor, any subcontractor, and any utility firm involved in soil disturbing activities within the project site. Prior to any soil disturbing activities being undertaken, each contractor is responsible for ensuring that the "ALERT" sheet is

---

http://www.sf-planning.org/ftp/files/publications_reports/library_of_cartography/Maher%20Map.pdf. Note that the 2003 FMND Project was not in an area subject to the Maher Ordinance. The areas subject to the Maher Ordinance were amended in 2013 and now include the project site.

[32] Hazardous building materials were evaluated in the 2000 FMND for the previously extant buildings that were demolished so that the existing structure could be built.

circulated to all field personnel including machine operators, field crew, pile drivers, and supervisory personnel. The project sponsor must provide the Environmental Review Officer (ERO) with a signed affidavit from the responsible parties confirming that all field personnel have received copies of the "ALERT" sheet. If a potential archeological resource is encountered during any soils disturbing activity, the ERO must be immediately notified and work suspended. If the ERO determines that an archeological resource is present, the project sponsor must retain the services of a qualified archeological consultant to advise the ERO regarding the disposition of the resource.

Modified Project

The project site is not in an archeologically sensitive area as identified by the City's Geographic Information Systems (GIS) database and, as the major soil disturbance has already occurred with construction of the existing building, no changes in regards to the potential presence of archeological resources is expected with the minor amount of excavation that would be required for the Modified Project. The Planning Department conducted a Preliminary Archeological Review of the Modified Project, which involves excavation of a total of about 590 cubic yards of soil to a depth of about one and one half feet, and determined that the 2003 FMND Mitigation Measure 4 was still required and did not recommend any new mitigation measures.[33]

Conclusion

Given that the Modified Project includes a minor amount of excavation and Mitigation Measure 4 remains applicable, the Modified Project would not result in an impact related to archeological resources that was not considered in the 2003 FMND, nor would it require a change to the analysis or conclusions reached in the 2003 FMND with respect to archeology. Therefore, there would be no cultural resource impact that would require preparation of a subsequent negative declaration or EIR.

7.4 Noise

2003 FMND

The 2003 FMND determined that there would not be an impact from the then-proposed project with respect to: (a) a substantial increase in ambient noise levels for adjoining areas; (b) a violation of Title 24 Noise Insulation Standards; and (c) a substantial impact to the proposed project by existing noise levels. No mitigation measures for noise were adopted.

Modified Project

The Modified Project includes emergency generators and other mechanical equipment that were not specifically analyzed for noise effects in the 2003 FMND. The main ventilation intake and exhaust fans, the roof-top chillers, and the emergency generators would all create noise that may be heard off-site. Given San Francisco's generally cool climate, it is expected that the proposed intake and exhaust fans

[33] Randall Dean, San Francisco Planning Department. *Environmental Planning Preliminary Archeological Review: 1828 Egbert Street*. June 26, 2015. This report is available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, as part of Case File No. 2013.1125E.

would be operated only as necessary to keep the server rooms cool. The rooftop chillers would generate noise when operating but, as discussed in Section 3.0 above, due to San Francisco's generally cool temperatures, the chillers are expected to operate about 263 hours per year, or about three percent of the total hours in a year. Typically, their operation would be during the daytime hours when temperatures are higher than during the nighttime.

A Noise Analysis was prepared for the Modified Project to evaluate potential noise impacts from the rooftop condensers, the intake and venting fans necessary for climate control in the server rooms, and the emergency generators.[34] The Noise Analysis made the assumption that up to two chillers would operate from 12:30 AM to 4:15 AM and, as internet activity picks up later in the morning, up to six chillers would operate during the hours from 4:15 AM to 12:30 AM.

As noted under Environmental Setting above, the project site is immediately adjacent to residential neighborhoods on its east and west. With respect to noise, residences are considered sensitive receptors and noise from fixed equipment at sensitive receptor locations are subject to certain maximum noise levels pursuant to San Francisco's Noise Ordinance (Article 29 of the Police Code). Section 2909(d) of the Noise Ordinance provides that no fixed noise source may cause the noise level measured inside any sleeping or living room in any dwelling unit to exceed 45 dBA between the hours of 10:00 PM to 7:00 AM or 55 dBA between the hours of 7:00 AM to 10:00 PM with windows open (except where building ventilation is achieved through mechanical systems that allow windows to remain closed). As specified by Section 2909(b) of the Noise Ordinance, mechanical noise such as that produced by the proposed emergency generators, chillers and ventilation fans cannot exceed eight dBA above the ambient level at any point outside of the property plane within which the noise originates.

Long-term measurements were taken between April 27 and 30, 2015 at three locations around the project site.[35] With ambient noise levels known for the surrounding residential neighborhood, and in consideration of the Noise Ordinance Section 2909(b) limit at the property plane of eight dBA above ambient, the Noise Analysis then established the maximum noise levels at the project site boundary as provided in Table 11.

Table 11. Maximum Allowable Noise Level, in dBA, at Project Property Planes per City of San Francisco Noise Ordinance 2909(b)

Property Plane	8:00 AM to 5:00 PM	4:00 AM to 12:00 AM	12:00 AM to 4:00 AM
North	63	61	58
West	63	61	58
East	62	62	59
South	69	66	61

Source: Charles M. Salter Associates, Inc., *1828 Egbert Avenue Data Center Mechanical and Emergency Generator Equipment Noise Analysis*, Table 1, CSA Project: 15-0265. April 21, 2016.

[34] Charles M. Salter Associates, Inc., *1828 Egbert Avenue Data Center Mechanical and Emergency Generator Equipment Noise Analysis*, CSA Project: 15-0265. April 21, 2016.

[35] Hourly ambient noise measurements for the three locations are provided in the Appendix to the Noise Analysis.

Combined Noise Levels

In evaluating total combined noise from the modified project (that is, noise from testing of the generators and operation of the chillers and other rooftop mechanical equipment), the Noise Analysis assumed the following operational conditions:

- All equipment runs at 100% load, except the chillers which run at 75% load.
- Generators would be tested between 8:00 AM and 5:00 PM.
- Generally, the chillers are expected to operate between 4:00 AM and 12:00 AM.
- Between 12:00 AM and 4:00 AM, analysis accounts for up to 2 chillers operating.
- Exhaust fans and battery room condensers would operate all day.
- Outdoor noise transmitted into residence interior spaces through the building facade with open windows would be reduced by 15 decibels.

The Noise Analysis also took into account the mechanical equipment manufacturer's source-sound data and normal attenuation with distance (6 dB for every doubling of distance) and provided the following noise reduction specifications for the rooftop noise barrier, airshafts, intake and exhaust fans, chillers, and emergency generators. Note that these specifications have been incorporated into the Modified Project plans as discussed in Section 3.0.

Rooftop Noise Barrier: In order to reduce the noise from condensers and the emergency generator radiators, a continuous (except where interrupted by the 10-foot-tall rooftop penthouses) 10-foot-tall rooftop noise barrier would be constructed on the southern, western and northern perimeter of the roof with a minimum surface weight of four pounds per square foot and sound-absorptive media on its surface facing the rooftop mechanical equipment with a minimum Noise Reduction Coefficient (NRC) rating of 0.90.[36] The 10-foot-tall rooftop penthouses would suffice as portions of the noise barrier. The noise barrier is not proposed for the eastern perimeter of the roof because the residential neighborhoods to the east are more than 300 feet away and noise from the mechanical equipment would attenuate with this distance to a level that would meet the 45 dBA interior residential noise level requirements of Noise Ordinance Section 2909(d).[37]

Main Ventilation Intake Fans: The air intake fans would be located behind the louvers on the air supply shaft on the east side of the existing structure. Using the noise specifications provided for the intake fans, the Noise Analysis determined that the maximum allowable noise levels for the east side property plane would be met with the installation of acoustical louvers equal to Industrial Acoustics Company (IAC) Acoustics Model R.

Main Ventilation Shafts and Exhaust Fans: Exhaust fans would be located at each floor to expel warmed air from the server rooms into the two main exhaust shafts. In order to reduce exhaust fan noise, the exhaust shafts would be lined with two-inch thick acoustical duct liner board. At the top of each shaft would be a

[36] The Noise Reduction Coefficient (NRC) is a scalar representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption.

[37] Phone call between Jeremy L Decker, P.E., Charles M. Salter Associates, Inc. and Chris Thomas, San Francisco Planning Department, December 18, 2015.

rooftop penthouse with air openings on two sides. The penthouse sides and roofs would be constructed with a material acoustically equivalent to a single-stud wall with sheathing on both sides. The interior surfaces of the penthouse would be lined with minimum four-inch-thick, sound absorbing, acoustical lining with a minimum NRC rating of 0.95. Exterior doors to the penthouses would be solid-core wood or insulated steel with full perimeter-gaskets and a bottom seal. Duct silencers would be incorporated into the vents in the penthouse through which air from the server rooms would be expelled.

Chillers: The Noise Analysis notes that the chiller units selected – the Trane Model RTAE300 (300 ton, 600 rpm and maximum 75 percent load) – generate a maximum noise level of 55 dB at 33 feet away in the direction of the west property line. The chillers, which would be at least 40 feet from the west property plane and separated from the residences to the west by the noise barrier, would therefore meet the maximum allowable limits noted in Table 11.

Battery Condensers: Calculating from the manufacturer's source-sound data and accounting for normal attenuation with distance, the Noise Analysis determined that the battery condenser units (Liebert Quiet-Line Air Cooled Condenser Model DCST) would meet the noise limit with the rooftop noise barrier.

Emergency Generators: The twelve Caterpillar 3516C emergency generators would be located inside the building on the fourth floor and the Caterpillar C-15 (for house power) would be located inside the building on the ground floor. The emergency generators would have their radiators and exhaust pipes located on the roof. The Noise Analysis calculated noise from the operation of the emergency generators according to the manufacturer's specifications provided for generators.[38]

Engine Noise Radiated Through Rooftop Gravity Relief Vents: In order to reduce emergency generator engine noise radiated through the rooftop gravity relief vents, those vents would be fitted with mufflers adequate to meet the Noise Ordinance Sections 2909(b) and (d) noise limits at the nearest receiver property plane which, in this case, would coincide with the western and eastern property planes of the project site.

Table 12 presents the cumulative noise levels for equipment operating simultaneously. The calculations assume that six chillers would operate between 4:15 AM and 12:30 AM and one chiller would operate between 12:30 AM and 4:15 AM. Emergency generators are assumed to be tested one at a time during the daytime hours only (8:00 AM to 5:00 PM per Air Quality Mitigation Measure 2). All equipment except the chillers is assumed to run at 100 percent load. The chillers are assumed to run at 75 percent load. The noise levels at the project site property plane are based on the equipment specifications for sound pressure and power levels, the building design, equipment location, and distances to the nearest property lines. Noise levels are calculated for the nearest "receiver" locations along the nearest neighboring property plane (the west and east property plane of the project site) at the same elevation as the roof of the proposed project building.

[38] As discussed above, testing of the emergency generator engines is limited to one generator at a time during the period between 8:00 AM and 5:00 PM, Monday through Friday in accordance with modified Mitigation Measure 2.

Table 12. Calculated Combined Noise Levels (dBA) at Nearest Property Planes (one generator, six chillers and all rooftop mechanical equipment)

Property Plane	Calculated Noise Level	8:00 AM to 5:00 PM Noise Limit
North	63	63
West	63	63
East	61	62
South	62	69

Source: Charles M. Salter Associates, Inc., *1828 Egbert Avenue Data Center Mechanical and Emergency Generator Equipment Noise Analysis*, Table 3, CSA Project: 15-0265. April 21, 2016.

As indicated by the results in the second column, testing of one emergency generator at a time with operation of the other mechanical equipment would not exceed the Section 2909(b) noise limits at the property plane in any direction.

The Noise Analysis also calculated the combined mechanical equipment noise that would occur at night (12:00 AM to 4:00 AM) when emergency generator testing would not be allowed and two chillers would be operating. Table 13 provides the noise levels at the nearest neighboring property planes with two chillers operating (during the 12:00 AM to 4:00 AM period).

Table 13. Calculated Noise Levels (dBA) at Nearest Property Planes without Generator Testing: Two and Six Chillers and All Other Rooftop Mechanical Equipment Operating

Property Plane	Calculated Noise Level from 12:00 AM to 4:00 AM (two chillers operating)	12:00 AM to 4:00 AM Noise Limit
North	58	58
West	58	58
East	56	59
South	53	61

Source: Charles M. Salter Associates, Inc., *1828 Egbert Avenue Data Center Mechanical and Emergency Generator Equipment Noise Analysis*, Tables 4 and 5, CSA Project: 15-0265. April 21, 2016.

As indicated in Table 13, operation of all the mechanical equipment during times outside of emergency generator testing would comply with Noise Ordinance Section 2909(b).

The Noise Analysis also evaluated compliance with the Noise Ordinance Section 2909(d) daytime and nighttime interior noise limits of 55 dBA and 45 dBA, respectively. As presented in Table 14, the daytime evaluation included combined noise from testing of one emergency generator with six chillers operating.

Table 14. Calculated Interior Daytime Noise Levels (dBA) at Nearest Residences with One Emergency Generator, Six Chillers, and all Other Rooftop Mechanical Equipment Operating.

Property Plane	Calculated Noise Level (One Generator)	Daytime Noise Limit
North	48	55
West	48	
East	46	
South	47	

Source: Charles M. Salter Associates, Inc., *1828 Egbert Avenue Data Center Mechanical and Emergency Generator Equipment Noise Analysis*, Table 6, CSA Project: 15-0265. April 21, 2016.

As indicated in Table 14, the Section 2909(d) daytime interior noise standard of 55 dBA would be met with the operation one emergency generator while six chillers are operating.

Finally, Table 15 presents the nighttime evaluation which included combined noise from the operation of two chillers between 12:00 AM and 4:00 AM and six chillers between 4:00 AM and 12:00 AM, in addition to all other rooftop mechanical equipment (but without testing of any emergency generators).

Table 15. Calculated Interior Nighttime Noise Levels (dBA) at the Nearest Residences with Two and Six Chillers and all Other Rooftop Mechanical Equipment Operating.

Property Plane	Noise Level (Two Chillers -12:00 AM to 4:00 AM)	Noise Level (Six Chillers – 4:00 AM to 12:00 AM))	Day/Night Noise Limit
North	42	44	55/45*
West	42	44	
East	40	42	
South	38	39	

*Per Section 2909(d), the daytime interior noise limit from 7:00 AM to 10:00 PM is 55 dBA and the nighttime interior noise limit from 10:00 PM to 7:00 AM is 45 dBA.

Source: Charles M. Salter Associates, Inc., *1828 Egbert Avenue Data Center Mechanical and Emergency Generator Equipment Noise Analysis*, Tables 7 and 8, CSA Project: 15-0265. April 21, 2016.

As indicated in Table 15, operation of all the mechanical equipment during times outside of emergency generator testing would comply with Noise Ordinance Section 2909(d).

Conclusion

The Noise Analysis demonstrates that the combined mechanical noise expected from the Modified Project would not exceed applicable limits prescribed by the Noise Ordinance when only one emergency generator is tested at any one time; this restriction is consistent with the requirements of Mitigation Measure 2. The 10-foot-high noise barrier with the recommended minimum surface weight of four pounds per square foot and sound-absorptive media on its surface facing the rooftop mechanical equipment with a minimum NRC rating of 0.90 would reduce the noise from operation of the chillers and the emergency generator radiators such that their potential noise impacts to nearby sensitive receptors

would be less-than-significant. The potential noise impacts from noise emitted through the exhaust pipes for the emergency generators would be less-than-significant with installation of the particle filter/muffler discussed above. These specifications are included in the plans for the Modified Project. Noise impacts to surrounding sensitive receptors resulting from operation of the air shaft fans would also be less-than-significant with inclusion of their specifications for acoustical lining and duct silencers.

7.5 Transportation and Circulation

2003 FMND

The 2003 FMND evaluated the then-proposed project with 53 employees and estimated it would result in a total of 239 daily person trips, 30 of which would occur during the PM peak hour. Of these 30 PM peak hour person trips, 20 would have been by vehicle, six by transit, and three by other means such as walking, bicycling and motorcycles. Assuming an average occupancy of 1.23 persons per automobile, the 2003 FMND estimated that the 2003 project would generate about 15 PM peak hour vehicle trips.[39] Peak loading demand was determined to be two trucks at one time. The 2003 FMND determined that the increase of 15 PM peak hour vehicles to the local road network would not have a significant effect with respect to the existing traffic load and capacity of the local street system. Similarly, the 2003 FMND found the then-proposed project would not result in a significant impact with respect to transit capacity, on-street parking, loading, safety hazards for bicyclists or pedestrians, or impacts to local vehicular, bicyclist or pedestrian conditions due to the effects of construction traffic. No mitigation measures related to transportation and circulation were proposed in the 2003 FMND.

Modified Project

The project site, located in a neighborhood of the Bayview District that contains residential, warehouse and light industrial land uses, is about 450 feet east of the onramp to US-101 and Interstate 280. Major north-south arterials near the project site include Bayshore Boulevard (700 feet to the northwest of the project site and paralleling US-101) and Third Street (about 2,600 feet walking distance to the east of the project site). Muni Bus Line 54 stops at Egbert and Phelps Street, about 400 feet west of the project site. Muni Bus Lines 9 and 90 have stops at Bacon Street and San Bruno Avenue, about 1,000 feet walking distance to the west of the project site. The T Third Street Light Rail Line and Bus Line 91 have stops at Third Street and Williams Avenue, about 3,000 feet walking distance to the northeast of the project site. Bike Route 5, a Class III bike route, follows Third Street north and is about 3,000 feet to the northeast, accessible via Williams Avenue. All local streets in the vicinity of the project site have sidewalks and local intersections are stop-sign controlled.

Trip Generation

For data center uses, only a small number of employees present around the clock are necessary to monitor the equipment, in addition to building security, maintenance, and administrative personnel. Periodically, additional workers are needed to install and replace equipment. Unlike typical trip patterns generated by

[39] The 2003 FMND did not evaluate the number of PM peak hour vehicle trips arriving and leaving from the project site if a shift change were to have occurred during that time.

office uses, data center trip arrival and departure times are spread out over three shifts, most of which occur outside the PM peak period (because maintenance and repairs are typically made during the nighttime hours when internet activity declines). Much of the installation, repair and maintenance in a data center occur in the evening hours after 10:00 PM when internet usage drops significantly.

This analysis assumes a 'worst-case' scenario of multiple tenants at the proposed facility with as many as 35 employees working per shift.[40] Because data centers operate 24 hours per day, seven days per week, there could therefore be up to 105 employees working at the facility over the course of a 24-hour day. (By contrast, if a single tenant occupies the entire building, it would take about eight to ten employees per shift to run the whole facility.) Thirty-five employees could therefore arrive at and depart from the proposed facility during shift changes, or 70 employee trips for each shift change. Therefore, there would be 210 employee trips for the three shift changes per day. Pursuant to the San Francisco Guidelines, traffic analysis is typically conducted for the AM and PM peak hour periods (e.g., 8:00 – 9:00 AM and 4:30 – 5:30 PM). This analysis assumes that the morning and evening shift changes for the Modified Project would occur during the AM and PM peak hours, during which as many as 70 employees would be travelling to and from the proposed facility. Based on the employee travel mode rates of 1.23 person per vehicle provided by the San Francisco Guidelines for this area of the City (Superdistrict 3), 50 employees would be expected to arrive by vehicle, 14 by transit, four by walking, and two by bicycle. AM and PM peak hour employee travel by mode to and from the project site are provided in Table 13.

Table 13. AM and PM Peak Hour Employee Travel Mode to the Project Site

Trips to Project Site	Vehicles	Transit	Walk	Other	Number of Vehicles (1.23 persons per vehicle)
Mode Split (percent)	71.1	20.2	5.8	2.0	-
No. of Employees (35 per shift) arriving by	25	7	2	1	20
No. of Employees (70 during shift overlap) arriving and departing by	50	14	4	2	40

Vehicle Miles Traveled (VMT) Analysis

As discussed above under Section 5.0 above, in response to state legislation that called for removing automobile delay from CEQA analysis, the Planning Commission adopted Resolution 19579 replacing automobile delay with a VMT metric for analyzing transportation impacts of a project. Therefore, potential impacts associated with automobile delay are not discussed in this analysis.

Many factors affect travel behavior. These factors include density, diversity of land uses, design of the transportation network, access to regional destinations, distance to high-quality transit, development scale, demographics, and transportation demand management. Typically, low-density development at

[40] Shane Mason, *Cooling and Staffing Clarification*, email attachment from Shane Mason, Project Sponsor, to Chris Thomas, San Francisco Planning Department. September 16, 2015.

great distance from other land uses, located in areas with poor access to non-private vehicular modes of travel, generate more automobile travel compared to development located in urban areas, where a higher density, mix of land uses, and travel options other than private vehicles are available.

Given these travel behavior factors, San Francisco has lower VMT per capita and per employee ratios than the nine-county San Francisco Bay Area region. In addition, some areas of the City have lower VMT per capita and per employee ratios than other areas of the City. These areas of the City can be expressed geographically through transportation analysis zones. Transportation analysis zones are used in transportation planning models for transportation analysis and other planning purposes. The zones vary in size from single city blocks in the downtown core, multiple blocks in outer neighborhoods, to even larger zones in historically industrial areas like the Hunters Point Shipyard.

The San Francisco County Transportation Authority (Transportation Authority) uses the San Francisco Chained Activity Model Process (SF-CHAMP) to estimate VMT by private automobiles and taxis for different land use types. Travel behavior in SF-CHAMP is calibrated based on observed behavior from the California Household Travel Survey 2010-2012, census data regarding automobile ownership rates and county-to-county worker flows, and observed vehicle counts and transit boardings. SF-CHAMP uses a synthetic population, which is a set of individual actors that represents the Bay Area's actual population, who make simulated travel decisions for a complete day. The Transportation Authority uses tour-based analysis for office and residential uses, which examines the entire chain of trips over the course of a day, not just trips to and from the project. For retail uses, the Transportation Authority uses trip-based analysis, which counts VMT from individual trips to and from the project (as opposed to entire chain of trips). A trip-based approach, as opposed to a tour-based approach, is necessary for retail projects because a tour is likely to consist of trips stopping in multiple locations, and the summarizing of tour VMT to each location would over-estimate VMT. [41,42]

A project would have a significant effect on the environment if it would cause substantial additional VMT. Data for VMT is currently available for residential, office and retail land uses. The Modified Project does not include any residential or retail uses. For purposes of this VMT analysis, the Modified Project will therefore be analyzed as an office land use. For office projects, a project would generate substantial additional VMT if it exceeds the regional VMT per employee minus 15 percent. As documented in the *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA* ("proposed transportation impact guidelines"), a 15 percent threshold below existing development is "both reasonably ambitious and generally achievable." [43]

---

[41] To state another way: a tour-based assessment of VMT at a retail site would consider the VMT for all trips in the tour, for any tour with a stop at the retail site. If a single tour stops at two retail locations, for example, a coffee shop on the way to work and a restaurant on the way back home, then both retail locations would be allotted the total tour VMT. A trip-based approach allows the apportionment of all retail-related VMT to retail sites without double-counting.

[42] San Francisco Planning Department, Executive Summary: Resolution Modifying Transportation Impact Analysis, Appendix F, Attachment A, March 3, 2016.

[43] This document is available online at: https://www.opr.ca.gov/s_sb743.php, page III:20.

The State Office of Planning and Research's (OPR) *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA* ("proposed transportation impact guidelines") provides screening criteria to identify types, characteristics, or locations of land use projects that would not exceed these VMT thresholds of significance. OPR recommends that if a project or land use proposed as part of the project meet any of the below screening criteria, then VMT impacts are presumed to be less than significant for that land use and a detailed VMT analysis is not required. The screening criteria applicable to the project and how they are applied in San Francisco are described below:

- Map-Based Screening for Residential, Office, and Retail Projects. OPR recommends mapping areas that exhibit where VMT is less than the applicable threshold for that land use. Accordingly, the Transportation Authority has developed maps depicting existing VMT levels in San Francisco for residential, office, and retail land uses based on the SF-CHAMP 2012 base-year model run. The Planning Department uses these maps and associated data to determine whether a proposed project is located in an area of the City that is below the VMT threshold.
- Proximity to Transit Stations. OPR recommends that residential, retail, and office projects, as well projects that are a mix of these uses, proposed within ½ mile of an existing major transit stop (as defined by CEQA Section 21064.3) or an existing stop along a high quality transit corridor (as defined by CEQA 21155) would not result in a substantial increase in VMT. However, this presumption would not apply if the project would: have a floor area ratio of less than 0.75; (2) include more parking for use by residents, customers, or employees of the project than required or allowed, without a conditional use; or (3) is inconsistent with the applicable Sustainable Communities Strategy.[44]

As shown in Table 14, existing average daily office VMT per employee is 15.5 for the transportation analysis zone the project site is located in, 907. The existing regional average daily VMT per office employee is 19.1. Fifteen percent below the regional average daily VMT per employee is 16.2. The average daily VMT per employee for TAZ 907 is 18 percent below the existing regional average daily VMT per employee of 19.1.

Table 14. Daily Vehicle Miles Traveled

Land Use	Bay Area		TAZ 907
	Regional Average	Regional Average minus 15%	
Employment (Office)	19.1	16.2	15.5

Given that the project site is located in an area where existing VMT is more than 15 percent below the existing regional average, the proposed project's office use would not result in substantial additional VMT and impacts would be less-than-significant. Furthermore, the project site meets the Proximity to

[44] A project is considered to be inconsistent with the Sustainable Communities Strategy if development is located outside of areas contemplated for development in the Sustainable Communities Strategy.

Transit Stations screening criterion, which also indicates the proposed project's use would not cause substantial additional VMT.

San Francisco 2040 cumulative conditions were projected using a SF-CHAMP model run, using the same methodology as outlined for existing conditions, but includes residential and job growth estimates and reasonably foreseeable transportation investments through 2040. The future 2040 average daily VMT per office employee for the region is projected to be 17.1. Fifteen percent below the projected regional average would be 14.5 VMT per office employee. The projected future 2040 average daily VMT per office employee is 11.7 for the transportation analysis zone the project site is located in, 907. This is 31 percent below the projected 2040 regional average VMT per office employee of 17.1. Given that the project site is located in an area where VMT is greater than 15 percent below the projected 2040 regional average, the modified project's data center uses would not result in substantial additional VMT. Therefore, the proposed project would not contribute considerably to any substantial cumulative increase in VMT.

Therefore, the proposed project would not cause substantial additional VMT and impacts would be less-than-significant.[45]

Transit

As indicated in Table 13, approximately 14 employees of the proposed project would use transit to travel to and from the project site. The project site is located within a quarter mile of several local transit line stops with AM and PM headways of 15 minutes or less, including Muni bus lines 8X Bay Shore Express, 9 San Bruno, 44 O'Shaughnessy, and 54 Felton lines. The Muni light rail Third Street T line is about a half mile walk from the project site and also has AM and PM headways of 15 minutes or less. The Modified Project employees' transit trips would be dispersed over these bus and light rail lines.[46] Given the availability of nearby transit, the addition of 14 PM peak hour transit trips would be accommodated by existing capacity. As such, the proposed project would not result in unacceptable levels of transit service or cause a substantial increase in delays or operating costs such that significant adverse impacts in transit service could result.

Analysis of potential cumulative transit impacts focuses on the cumulative transit patronage during the PM peak hour. The San Francisco Municipal Transportation Agency (SFMTA) has adopted an "85 percent" standard for transit vehicle load — that is, all transit vehicles should operate at or below 85 percent capacity utilization. The SFMTA's most recent cumulative 2040 peak hour analysis of transit capacity utilization indicates that the during the weekday p.m. peak hour the capacity utilization of some transit corridors (including the Third Street T line) in the southeast area of San Francisco would exceed the 85 percent capacity utilization standard.[47] This exceedance of the capacity utilization standard would be considered a significant cumulative impact. However, the addition of the Modified Project's transit

[45] San Francisco Planning Department. Eligibility Checklist: CEQA Section 21099 – Modernization of Transportation Analysis for 2435 – 2445 16th Street, March 16, 2016.

[46] Note also that at least some of the transit riders to and from the project site from elsewhere in the City would be commuting in the less crowded reverse-commute direction – outbound for the AM commute to the project site and inbound for the PM commute back to the employee place of residence.

[47] San Francisco Planning Department, *Memorandum: Transit Data for Transportation Impact Studies*, May 15, 2015.

riders to the southeast corridors that exceed the 85 percent capacity utilization standard would be less than 5 percent, and the proposed project would not contribute considerably to the cumulative impact. Therefore, the Modified Project would result in a less-than-significant impact to cumulative transit conditions.

Parking

The Planning Code does not include a parking requirement for data center uses. Parking demand generated by the proposed project would not substantially exceed that considered by the 2003 FMND. The project site's proposed 45 parking spaces would provide ample capacity for the anticipated 40 vehicles that may be present during the Modified Project's shift change (and approximately half that number after the shift change is complete). Given that the Modified Project would accommodate all parking on-site, there would be no impact upon on-street parking conditions in the vicinity of the project site.

Loading

The project site currently has one off-street loading space with a rollup door that is accessed via an approximately 80-foot-long ramp from Egbert Avenue. The proposed ISE facility would not be a delivery-intensive use. Most deliveries using the loading space would occur with the installation of the servers and their support infrastructure; once this equipment is installed, normal business deliveries via UPS and Fed Ex would be expected. The modified project would meet the loading space requirements of Section 152 of the Planning Code, which specifies one loading space for structures between 100,001 and 200,000 sf that host a land use that is not involved with the handling of goods, retail or manufacturing. The current loading space would be adequate for normal business deliveries via UPS and Fed Ex and the Modified Project would not result in loading demand greater than that estimated in the 2003 FMND. Given the amount of available parking at the project site, which could (in the unlikely event it was necessary) accommodate several trucks in addition to a full parking lot, the proposed project would result in a less-than-significant impact with respect to on-street loading capacity and safety hazards resulting from trucks queueing to unload at the project site.

Pedestrian and Bicycle Conditions

As noted in Table 13 above, the proposed project is expected to generate few walking or bicycling trips and would only slightly exceed the number of walking and bicycling trips considered in the 2003 FMND. Local streets have ample capacity for both modes and the proposed project would result in less-than-significant impacts with respect to sidewalk and street crowding that could lead to unsafe conditions for pedestrians or bicyclists.

Construction

As discussed above, construction activities for the Modified Project would include two new air shafts from the ground level to two rooftop penthouses, and a continuous 10-foot-tall rooftop noise barrier along the southern, western and northern perimeter of the roof. Emergency generators, condensers, and other mechanical equipment would also be installed in the existing structure. There is ample off-street room at the project site for construction equipment and materials, and for construction worker vehicles.

No closures of sidewalks or streets would be necessary. Given the relatively minor amount of construction, the Modified Project would result in a less-than-significant impact to local traffic conditions.

Conclusion

The Modified Project, which proposes minor physical changes to the project considered by the 2003 FMND, would employ up to 35 workers per shift for a total of 105 workers. Although the number of potential employees for the Modified Project exceeds the 53 considered by the 2003 FMND, there would be a less-than-significant impact with regards to VMT and induced travel because VMT per employee in TAZ 907 is already more than 15 percent below the regional average VMT per employee. The Modified Project's trip generation would not exceed the capacity of local transit, bikeways or sidewalks. The changes proposed for the Modified Project would not result in any new significant impacts with regards to transportation and circulation that would require preparation of a subsequent negative declaration or EIR.

7.6 Energy and Natural Resources

The Modified Project would include ISE uses and emergency generators that would consume energy resources consistent with the 2003 FMND Project. While ISE uses consume large amounts of energy when factoring in computer servers and cooling equipment, the Modified Project would employ energy efficiency features to prevent the wasteful use of electricity. An analysis of the Modified Project (the PUE Analysis) determined its expected annualized power utilization efficiency (PUE) would be 1.226.[48] If the air-cooled chillers are not used and the facility temperature is maintained by drawing air in from the outside, the PUE would drop to 1.183.[49] As noted in the PUE Analysis, these figures are low compared to PUE figures for conventional data centers. The energy efficiencies are achieved by certain design features that allow for cooling of the facility without electric refrigeration or water consumption, the use of high-efficiency fan motors, and server temperature held at ASHRAE Class 1 standards (less than 80^{O}F dry bulb) that can be maintained with evaporative cooling (that is, no refrigeration). Therefore the Modified Project would not use larger amounts of fuel and energy in a wasteful manner.

The Modified Project would involve a minor amount of construction necessitating certain natural resources such as mineral resources (concrete) and petroleum-based resources (asphalt). Given its small size, the Modified Project would result in a less than significant impact with regards to the loss of mineral and petroleum-based resources.

7.7 Other Environmental Topics

As described in Project Description, the Modified Project would include some minor changes to the 2003 FMND Project that would not substantially alter the 2003 FMND analysis because the Modified Project's construction duration and activities, as well as its operation, would be similar to that considered in the 2003 FMND. The Modified Project would have similar impacts compared to the 2003 FMND Project,

[48] Pragmatic Professional Engineers, *Memorandum: Power Utilization Efficiency (PUE) at proposed 1828 Egbert data center*, April 6, 2016.

[49] Ibid.

including the less-than-significant impacts regarding Aesthetics, Population and Housing, Transportation and Circulation, Wind and Shadow, Recreation, Utility and Service Systems, Public Services, Biological Resources, Geology and Soils, and Hydrology and Water Quality.[50] In regards to these topics, the Modified Project would neither increase the severity of any significant impacts associated with the 2003 FMND Project, nor result in new or substantially different environmental effects. These topics do not warrant further discussion.

MITIGATION MEASURES

The following 2003 FMND mitigation measures apply to the Modified Project with aforementioned changes noted by ~~strike-through~~ for text to be removed and double-underscore for text to be added.

Mitigation Measure 1. Construction Air Quality

~~The project sponsor would require the contractor(s) to spray the site with water during construction activities; spray unpaved construction areas with water at least twice per day; cover stockpiles of soil, sand, and other material; cover trucks hauling debris, soils, sand, or other such material; and sweep surrounding streets during construction at least once per day to reduce particulate emissions.~~

~~Ordinance 175-91, passed by the Board of Supervisors on May 6, 1991, requires that non-potable water be used for dust control activities. Therefore, the project sponsor would require that the contractor(s) obtain reclaimed water from the Clean Water Program for this purpose. The project sponsors would require the project contractor(s) to maintain and operate construction equipment so as to minimize exhaust emissions of particulate and other pollutants, by such means as a prohibition on idling motors when equipment is not in use or when trucks are waiting in queues, and implementation of specific maintenance programs to reduce emissions for equipment that would be in frequent use for much of the construction period.~~

The project sponsor or the project sponsor's Contractor shall comply with the following:

A. *Construction Emissions Minimization Plan.* Prior to issuance of a construction permit, the project sponsor shall submit a Construction Emissions Minimization Plan (Plan) to the Environmental Review Officer (ERO) for review and approval by an Environmental Planning Air Quality Specialist. The Plan shall detail project compliance with the following requirements:
   1. All off-road equipment greater than 25 hp and operating for more than 20 total hours over the entire duration of construction activities shall meet the following requirements:
      a) Where access to alternative sources of power are available, portable diesel engines shall be prohibited;
      b) All off-road equipment shall have:
         i. Engines that meet or exceed either U.S. Environmental Protection Agency (USEPA) or California Air Resources Board (ARB) Tier 2 off-road emission standards, and

[50] Note that Forest Resources were not addressed in the 2003 MFMND because they were not CEQA topics at that time.

ii. Engines that are retrofitted with an ARB Level 3 Verified Diesel Emissions Control Strategy (VDECS).[51]

c) Exceptions:

i. Exceptions to A(1)(a) may be granted if the project sponsor has submitted information providing evidence to the satisfaction of the ERO that an alternative source of power is limited or infeasible at the project site and that the requirements of this exception provision apply. Under this circumstance, the sponsor shall submit documentation of compliance with A(1)(b) for onsite power generation.

2. The project sponsor shall require the idling time for off-road and on-road equipment be limited to no more than two minutes, except as provided in exceptions to the applicable state regulations regarding idling for off-road and on-road equipment. Legible and visible signs shall be posted in multiple languages (English, Spanish, Chinese) in designated queuing areas and at the construction site to remind operators of the two minute idling limit.

3. The project sponsor shall require that construction operators properly maintain and tune equipment in accordance with manufacturer specifications.

4. The Plan shall include estimates of the construction timeline by phase with a description of each piece of off-road equipment required for every construction phase. Off-road equipment descriptions and information may include, but is not limited to: equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel usage and hours of operation. For VDECS installed: technology type, serial number, make, model, manufacturer, ARB verification number level, and installation date and hour meter reading on installation date.

5. The Plan shall be kept on-site and available for review by any persons requesting it and a legible sign shall be posted at the perimeter of the construction site indicating to the public the basic requirements of the Plan and a way to request a copy of the Plan. The project sponsor shall provide copies of Plan to members of the public as requested.

B. *Reporting.* Quarterly reports shall be submitted to the ERO indicating the construction phase and off-road equipment information used during each phase including the information required in A(4).

Within six months of the completion of construction activities, the project sponsor shall submit to the ERO a final report summarizing construction activities. The final report shall indicate the start and end dates and duration of each construction phase. For each phase, the report shall include detailed information required in A(4).

C. *Certification Statement and On-site Requirements.* Prior to the commencement of construction activities, the project sponsor must certify (1) compliance with the Plan, and (2) all applicable requirements of the Plan have been incorporated into contract specifications.

[51] Equipment with engines meeting Tier 4 Interim or Tier 4 Final emission standards automatically meet this requirement, therefore a VDECS would not be required.

Mitigation Measure 2. Air Quality Impacts of Emergency Generators

In addition to the use of low particulate emission engines, the following operations and equipment are proposed as part of the project and would be implemented to meet as conditions of BAAQMD BACT permit requirements for emergency generators.

- The emergency generator engines will be limited to only operate for reliability testing and for emergency operations. Emergency operation is limited to periods when the primary source of electrical power (the local utility grid) fails. The emergency generators ~~would~~ will not be used for load shedding.
- Reliability testing of the diesel emergency generator engines will be limited to ~~736~~ 650 hours per year for combined engines (~~46~~ 50 hours per year for each of the ~~16~~ 13 engines). The number of hours for reliability testing for each emergency generator engine would be limited to an average of ~~46~~ 50 hours per year or an annual cumulative total of ~~736~~ 650 hours for the ~~16~~13 generators.
- The project sponsor shall ensure that each emergency generator meets or exceeds one of the following emission standards for particulate matter: Tier 4 certified engine (interim or final), or (2) use of a current EPA Tier 2 or Tier 3 certified engine that is equipped with a California Air Resources Board (ARB) Level 3 Verified Diesel Emissions Control Strategy (VDECS). A non-verified diesel emission control strategy may be used if the filter is identical to the ARB verified model and if the Bay Area Air Quality Management District (BAAQMD) approves of its use. The project sponsor shall submit documentation of compliance with the BAAQMD New Source Review permitting process (Regulation 2, Rule 2, and Regulation 2, Rule 5) and the emission standard requirement of this mitigation measure to the San Francisco Planning Department for review and approval prior to issuance of a building permit from any City agency.
- Once operational, all emergency generators and VDECS shall be maintained in good working order in perpetuity and any future replacement of the diesel backup generators and Level 3 VDECS filters shall be required to be consistent with these emissions specifications.
- For each emergency generator permit submitted for the 1828 Egbert Avenue site, engine and filter specifications shall be submitted to the San Francisco Planning Department for review and approval prior to issuance of a permit for the generator from the San Francisco Department of Building Inspection.
- Maintenance testing of the emergency generator engines shall occur under one of two scenarios as follows:
    - Scenario A: each emergency generator engine may be tested no more than one time per year at 100 percent load and no more than 51 times per year at 25 percent load.
    - Scenario B: each emergency generator engine may be tested no more than 52 times per year at 50 percent load.

  Under either Scenario A or Scenario B, testing of each individual emergency generator engine shall involve operating at the designated load for 30 minutes followed by operation of the engine at idle for 15 minutes to allow for cooling before shutting down.

- If Scenario A is employed as the maintenance testing schedule, then no more than eight emergency generator engines may be tested at 25 percent load in one day and no more than one generator may be tested at 100 percent load in one day.
- If Scenario B is employed as the testing and maintenance schedule, then no more than five emergency generator engines may be tested during any one day at no more than 50 percent load.
- Testing of all emergency generator engines shall only be conducted between the hours of 8:00 AM to 5:00 PM, Monday through Friday. No more than one emergency generator engine may be tested at any one time.
- Prior to issuance of a building permit from the Department of Building Inspection, the operator of the facility shall provide notice to the San Francisco Planning Department regarding whether it will conduct annual emergency generator engine testing under either Scenario A or Scenario B over the course of a year. The facility operator shall also notify the San Francisco Planning Department anytime it changes from one annual testing scenario to the other.
- The operator of the facility shall maintain records of the testing schedule for each emergency generator engine for the life of that emergency generator. The records shall specify under which scenario the emergency generator engines are tested and the number of hours of testing under the designated load and at idle. This information shall be provided for review to the San Francisco Planning Department annually for the first three years, starting with the first submittal in 2017. Thereafter, this information may be provided on a less frequent schedule as approved by the San Francisco Planning Department.
- Each emergency generator engine will be EPA-certified to be a low-hydrocarbon emitting engine.
- Each emergency generator engine will be EPA-certified to be a low carbon monoxide emitting engine.
- Each engine will be equipped with a turbocharger, low temperature after-cooling, and variable timing (NOx emission control measures).
- Each engine will be fueled with very-low sulfur (15 ppm) diesel fuel or renewable diesel fuel. ~~This measure would reduce emissions of sulfur dioxide, would improve the performance of the diesel particulate filters, and would result in reduced diesel particulate emissions.~~
- ~~Each engine will be equipped with a Level 3 diesel particulate filter (DPF) equipped with a pre-heater to reduce emissions by 85%.~~
- ~~Emergency use of each generator would be limited to an annual average of 10 hours per year for the 16~~13 ~~generators over the life of the proposed project. This estimate is based on the historical reliability of PG&E. A maximum of 12~~13 ~~engine generators will be utilized during emergency generation. Based on this restriction~~, ~~the extent of average annual use of the generators for both emergencies and testing would be limited to conform with the AWR Engineering Group report, *Cumulative Air Pollution Impact Report for Diesel Engine Generators for 1828 Egbert Avenue*, April 2002, which were prepared in conjunction with this environmental document.~~ Any future modifications affecting the combined average annual levels of use for the generators shall require a modification of any conditional use permit issued to authorize the 1828 Egbert Avenue project and they shall require resubmittal for a modified source permit for the BAAQMD.

Mitigation Measure 3. Contaminated Soil (Removed)

Mitigation Measure 3 has been superseded by the requirements of the Maher Ordinance (Article 22A of the Health Code), to which the Modified Project is subject.

~~Step 1: Determination of Presence of Lead-Contaminated Soils~~

~~Prior to approval of a building permit for the project, the project sponsor shall hire a consultant to collect soil samples (borings) from areas on the site in which soil would be disturbed and test the soil samples for total lead. The consultant shall analyze the soil borings as discrete, not composite samples.~~

~~The consultant shall prepare a report on the soil testing for lead that includes the results of the soil testing and a map that shows the locations of stockpiled soils from which the consultant collected the soil samples.~~

~~The project sponsor shall submit the report on the soil testing for lead and a fee of $425 in the form of a check payable to the San Francisco Department of Public Health (SFDPH), to the Hazardous Waste Program, Department of Public Health, 101 Grove Street, Room 214, San Francisco, California 94102. The fee of $425 shall cover five hours of soil testing report review and administrative handling. If additional review is necessary, DPH shall bill the project sponsor for each additional hour of review over the first five hours, at a rate of $85 per hour. These fees shall be charged pursuant to Section 31.47(c) of the San Francisco Administrative Code. DPH shall review the soil testing report to determine to whether soils on the project site are contaminated with lead at or above potentially hazardous levels.~~

~~If DPH determines that the soils on the project site are not contaminated with lead at or above a potentially hazardous level (i.e., below 50 ppm total lead), no further mitigation measures with regard to lead-contaminated soils on the site would be necessary.~~

~~Step 2: Preparation of Site Mitigation Plan~~

~~If based on the results of the soil tests conducted, DPH determines that the soils on the project site are contaminated with lead at or above potentially hazardous levels, the DPH shall determine if preparation of a Site Mitigation Plan (SMP) is warranted. If such a plan is requested by the DPH, the SMP shall include a discussion of the level of lead contamination of soils on the project site and mitigation measures for managing contaminated soils on the site, including, but not limited to: 1) the alternatives for managing contaminated soils on the site (e.g., encapsulation, partial or complete removal, treatment, recycling for reuse, or a combination); 2) the preferred alternative for managing contaminated soils on the site and a brief justification; and 3) the specific practices to be used to handle, haul, and dispose of contaminated soils on the site. The SNIP shall be submitted to the DPH for review and approval.~~

~~A copy of the SNIP shall be submitted to the Planning Department to become part of the case file.~~

~~Step 3: Handling, Hauling, and Disposal of Lead-Contaminated Soils~~

~~(a) specific work practices: If based on the results of the soil tests conducted, DPH determines that the soils on the project site are contaminated with lead at or above potentially hazardous levels, the construction contractor shall be alert for the presence of such soils during excavation and other construction activities on the site (detected through soil odor, color, and texture and results of on-site soil testing), and shall be prepared to handle, profile (i.e., characterize), and dispose of such soils~~

~~appropriately (i.e., as dictated by local, state, and federal regulations, including OSHA lead safe work practices) when such soils are encountered on the site.~~

~~(b) dust suppression: Soils exposed during excavation for site preparation and project construction activities shall be kept moist throughout the time they are exposed, both during and after work hours.~~

~~(c) surface water runoff control: Where soils are stockpiled, visqueen shall be used to create an impermeable liner, both beneath and on top of the soils, with a berm to contain any potential surface water runoff from the soil stockpiles during inclement weather.~~

~~(d) soils replacement: If necessary, clean fill or other suitable material(s) shall be used to bring portions of the project site, where lead contaminated soils have been excavated and removed, up to construction grade.~~

~~(e) hauling and disposal: Contaminated soils shall be hauled off the project site by waste hauling trucks appropriately certified with the State of California and adequately covered to prevent dispersion of the soils during transit, and shall be disposed of at a permitted hazardous waste disposal facility registered with the State of California.~~

~~Step 4: Preparation of Closure/Certification Report~~

~~After excavation and foundation construction activities are completed, the project sponsor shall prepare and submit a closure/certification report to DPH for review and approval. The closure/certification report shall include the mitigation measures in the SNIP for handling and removing lead contaminated soils from the project site, whether the construction contractor modified any of these mitigation measures, and how and why the construction contractor modified those mitigation measures.~~

Mitigation Measure 4. Archaeology

The following mitigation measure is required to avoid any potential adverse effect from the proposed project on accidentally discovered buried or submerged historical resources as defined in CEQA Guidelines Section 15064.5(a)(c). The project sponsor shall distribute the Planning Department archeological resource "ALERT" sheet to the project prime contractor; to any project subcontractor (including demolition, excavation, grading, foundation, pile driving, etc. firms); or utilities involved in soils disturbing activities within the project site. Prior to any soils disturbing activities being undertaken each contractor is responsible for ensuring that the "ALERT" sheet is circulated to all field personnel including, machine operators, field crew, pile drivers, supervisory personnel, etc. The project sponsor shall provide the Environmental Review Officer (ERO) with a signed affidavit from the responsible parties (prime contractor, subcontractor(s), and utilities firm) to the ERO confirming that all field personnel have received copies of the Alert sheet.

Should any indication of an archeological resource be encountered during any soils disturbing activity of the project, the project Head Foreman and/or project sponsor shall immediately notify the ERO and shall immediately suspend any soils disturbing activities in the vicinity of the discovery until the ERO has determined what additional measures should be undertaken.

If the ERO determines that an archeological resource may be present within the project site, the project sponsor shall retain the services of an archaeological consultant from the pool of qualified archaeological consultants maintained by the Planning Department archaeologist. The archeological consultant shall

advise the ERO as to whether the discovery is an archeological resource, retains sufficient integrity, and is of potential scientific/historical/cultural significance. If an archeological resource is present, the archeological consultant shall identify and evaluate the archeological resource. The archeological consultant shall make a recommendation as to what action, if any, is warranted. Based on this information, the ERO may require, if warranted, specific additional measures to be implemented by the project sponsor.

Measures might include: preservation in situ of the archeological resource; an archaeological monitoring program; or an archeological testing program. If an archeological monitoring program or archeological testing program is required, it shall be consistent with the Environmental Planning (EP) division guidelines for such programs. The ERO may also require that the project sponsor immediately implement a site security program if the archeological resource is at risk from vandalism, looting, or other damaging actions.

The project archeological consultant shall submit a Final Archeological Resources Report (FARR) to the ERO that evaluates the historical significance of any discovered archeological resource and describing the archeological and historical research methods employed in the archeological monitoring/data recovery program(s) undertaken. Information that may put at risk any archeological resource shall be provided in a separate removable insert within the final report.

Copies of the Draft FARR shall be sent to the ERO for review and approval. Once approved by the ERO, copies of the FARR shall be distributed as follows: California Archaeological Site Survey Northwest Information Center (NWIC) shall receive one (1) copy and the ERO shall receive a copy of the transmittal of the FARR to the NWIC. The Environmental Planning Division of the Planning Department shall receive one bound copy, one unbound copy and one unlocked, searchable PDF copy on CD three copies of the FARR along with copies of any formal site recordation forms (CA DPR 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. In instances of high public interest or interpretive value, the ERO may require a different final report content, format, and distribution than that presented above.

CONCLUSION

Based on the foregoing, it is concluded that the analyses conducted and the conclusions reached in the final Mitigated Negative Declaration adopted and issued on April 8, 2003 remain valid subject to the modifications to Mitigation Measures 1, 2 and 3, and that no supplemental environmental review is required. The proposed revisions to the project would not cause new significant impacts not identified in the final mitigated negative declaration, and no new mitigation measures would be necessary to reduce significant impacts. Modifications to Mitigation Measures 1, 2 and 3 reflect regulations that have been adopted since 2003 or would result in equal or higher protection of the environment, as applicable. No changes have occurred with respect to circumstances surrounding the proposed project that would cause significant environmental impacts to which the project would contribute considerably, and no new information has become available that shows that the project would cause significant environmental impacts. Therefore, no supplemental environmental review is required beyond this addendum.

April 26, 2016
Date of Determination

I do hereby certify that the above determination has been made pursuant to State and Local requirements

Sarah B. Jones
Environmental Review Officer

cc: Shane Mason, Project Sponsor
Rich Sucre, Current Planning
Distribution List
Virna Byrd, Master Decision File/Bulletin Board

APPENDIX A

CALIFORNIA EMMISSIONS ESTIMATOR MODEL (CALEEMOD) RESULTS FOR THE PROPOSED

1828 EGBERT AVENUE INTERNET SERVICE EXCHANGE (CASE NO. 2013.1125E)

A.1 Annual Modeling Results

A.2 Summer Modeling Results

A.3 Winter Modeling Results

1828 Egbert Ave

San Francisco County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	125.00	1000sqft	2.87	125,000.00	0
Parking Lot	45.00	Space	0.41	18,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	427	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor for 2013 provided by PG&E here: http://www.pgecurrents.com/2015/01/30/pge-cuts-carbon-emissions-with-clean-energy/

Land Use - Total building area = approximately 125,000 sf.

Vehicle Trips - See Transportation and Circulation section of Addendum for the proposed project for analysis that concludes that there would be approximately 150 vehicle trips per day. Trip rate = trips per 1,000 sq ft/day = 150/125=1.2 trip rate per day. This rate would apply seven days per week as the proposed ISE facility would operate 24/7.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	427
tblProjectCharacteristics	OperationalYear	2014	2017
tblVehicleTrips	ST_TR	1.32	1.20
tblVehicleTrips	SU_TR	0.68	1.20
tblVehicleTrips	WD_TR	6.97	1.20

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	4.9014	51.8404				2.7557	20.9917		2.5352	12.5109						
2018	161.9698	25.3986				1.5252	2.2428		1.4332	1.6266						
Total	**166.8711**	**77.2390**				**4.2808**	**23.2345**		**3.9684**	**14.1375**						

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	4.9014	51.8404				2.7557	20.9917		2.5352	12.5109						
2018	161.9698	25.3986				1.5252	2.2428		1.4332	1.6266						
Total	**166.8711**	**77.2390**				**4.2808**	**23.2345**		**3.9684**	**14.1375**						

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.4206	1.7000e-004				6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005						
Energy	0.0948	0.8622				0.0655	0.0655		0.0655	0.0655						
Mobile	0.5560	1.2876				0.0195	0.9638		0.0179	0.2731						
Total	**4.0714**	**2.1500**				**0.0851**	**1.0294**		**0.0835**	**0.3387**						

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.4206	1.7000e-004				6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005						
Energy	0.0948	0.8622				0.0655	0.0655		0.0655	0.0655						
Mobile	0.5560	1.2876				0.0195	0.9638		0.0179	0.2731						
Total	**4.0714**	**2.1500**				**0.0851**	**1.0294**		**0.0835**	**0.3387**						

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	1/27/2017	5	20	
2	Site Preparation	Site Preparation	1/28/2017	2/3/2017	5	5	
3	Grading	Grading	2/4/2017	2/15/2017	5	8	
4	Building Construction	Building Construction	2/16/2017	1/3/2018	5	230	
5	Paving	Paving	1/4/2018	1/29/2018	5	18	
6	Architectural Coating	Architectural Coating	1/30/2018	2/22/2018	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 188,310; Non-Residential Outdoor: 62,770 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Demolition	Excavators	3	8.00	162	0.38
Grading	Excavators	1	8.00	162	0.38
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	125	0.42
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Graders	1	8.00	174	0.41
Paving	Paving Equipment	2	6.00	130	0.36
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	60.00	23.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	12.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.0482	42.6971				2.1252	2.1252		1.9797	1.9797						
Total	**4.0482**	**42.6971**				**2.1252**	**2.1252**		**1.9797**	**1.9797**						

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	0.0527	0.0724				1.2100e-003	0.1427		1.1100e-003	0.0386						
Total	**0.0527**	**0.0724**				**1.2100e-003**	**0.1427**		**1.1100e-003**	**0.0386**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.0482	42.6971				2.1252	2.1252		1.9797	1.9797						
Total	**4.0482**	**42.6971**				**2.1252**	**2.1252**		**1.9797**	**1.9797**						

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	0.0527	0.0724				1.2100e-003	0.1427		1.1100e-003	0.0386						
Total	**0.0527**	**0.0724**				**1.2100e-003**	**0.1427**		**1.1100e-003**	**0.0386**						

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	18.0663		0.0000	9.9307						
Off-Road	4.8382	51.7535				2.7542	2.7542		2.5339	2.5339						
Total	**4.8382**	**51.7535**				**2.7542**	**20.8205**		**2.5339**	**12.4646**						

3.3 Site Preparation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	0.0632	0.0869				1.4500e-003	0.1712		1.3400e-003	0.0464						
Total	**0.0632**	**0.0869**				**1.4500e-003**	**0.1712**		**1.3400e-003**	**0.0464**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	18.0663		0.0000	9.9307						
Off-Road	4.8382	51.7535				2.7542	2.7542		2.5339	2.5339						
Total	**4.8382**	**51.7535**				**2.7542**	**20.8205**		**2.5339**	**12.4646**						

3.3 Site Preparation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	0.0632	0.0869				1.4500e-003	0.1712		1.3400e-003	0.0464						
Total	**0.0632**	**0.0869**				**1.4500e-003**	**0.1712**		**1.3400e-003**	**0.0464**						

3.4 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	6.5523		0.0000	3.3675						
Off-Road	3.4555	35.9825				2.0388	2.0388		1.8757	1.8757						
Total	**3.4555**	**35.9825**				**2.0388**	**8.5912**		**1.8757**	**5.2432**						

3.4 Grading - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	0.0527	0.0724				1.2100e-003	0.1427		1.1100e-003	0.0386						
Total	**0.0527**	**0.0724**				**1.2100e-003**	**0.1427**		**1.1100e-003**	**0.0386**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	6.5523		0.0000	3.3675						
Off-Road	3.4555	35.9825				2.0388	2.0388		1.8757	1.8757						
Total	**3.4555**	**35.9825**				**2.0388**	**8.5912**		**1.8757**	**5.2432**						

3.4 Grading - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	0.0527	0.0724				1.2100e-003	0.1427		1.1100e-003	0.0386						
Total	**0.0527**	**0.0724**				**1.2100e-003**	**0.1427**		**1.1100e-003**	**0.0386**						

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057				1.7812	1.7812		1.6730	1.6730						
Total	**3.1024**	**26.4057**				**1.7812**	**1.7812**		**1.6730**	**1.6730**						

3.5 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.3335	2.0691				0.0285	0.1805		0.0262	0.0696						
Worker	0.2106	0.2897				4.8300e-003	0.5706		4.4600e-003	0.1545						
Total	**0.5442**	**2.3588**				**0.0334**	**0.7511**		**0.0307**	**0.2241**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057				1.7812	1.7812		1.6730	1.6730						
Total	**3.1024**	**26.4057**				**1.7812**	**1.7812**		**1.6730**	**1.6730**						

3.5 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.3335	2.0691				0.0285	0.1805		0.0262	0.0696						
Worker	0.2106	0.2897				4.8300e-003	0.5706		4.4600e-003	0.1545						
Total	**0.5442**	**2.3588**				**0.0334**	**0.7511**		**0.0307**	**0.2241**						

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608				1.4943	1.4943		1.4048	1.4048						
Total	**2.6687**	**23.2608**				**1.4943**	**1.4943**		**1.4048**	**1.4048**						

3.5 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.2566	1.8736				0.0262	0.1780		0.0241	0.0674						
Worker	0.1919	0.2642				4.7400e-003	0.5706		4.3800e-003	0.1545						
Total	**0.4484**	**2.1378**				**0.0309**	**0.7485**		**0.0284**	**0.2218**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608				1.4943	1.4943		1.4048	1.4048						
Total	**2.6687**	**23.2608**				**1.4943**	**1.4943**		**1.4048**	**1.4048**						

3.5 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.2566	1.8736				0.0262	0.1780		0.0241	0.0674						
Worker	0.1919	0.2642				4.7400e-003	0.5706		4.3800e-003	0.1545						
Total	**0.4484**	**2.1378**				**0.0309**	**0.7485**		**0.0284**	**0.2218**						

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4060	14.3192				0.8272	0.8272		0.7628	0.7628						
Paving	0.0597					0.0000	0.0000		0.0000	0.0000						
Total	**1.4657**	**14.3192**				**0.8272**	**0.8272**		**0.7628**	**0.7628**						

3.6 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	0.0640	0.0881				1.5800e-003	0.1902		1.4600e-003	0.0515						
Total	**0.0640**	**0.0881**				**1.5800e-003**	**0.1902**		**1.4600e-003**	**0.0515**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4060	14.3192				0.8272	0.8272		0.7628	0.7628						
Paving	0.0597					0.0000	0.0000		0.0000	0.0000						
Total	**1.4657**	**14.3192**				**0.8272**	**0.8272**		**0.7628**	**0.7628**						

3.6 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	0.0640	0.0881				1.5800e-003	0.1902		1.4600e-003	0.0515						
Total	**0.0640**	**0.0881**				**1.5800e-003**	**0.1902**		**1.4600e-003**	**0.0515**						

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	161.6328					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2986	2.0058				0.1506	0.1506		0.1506	0.1506						
Total	**161.9314**	**2.0058**				**0.1506**	**0.1506**		**0.1506**	**0.1506**						

3.7 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	0.0384	0.0528				9.5000e-004	0.1141		8.8000e-004	0.0309						
Total	**0.0384**	**0.0528**				**9.5000e-004**	**0.1141**		**8.8000e-004**	**0.0309**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	161.6328					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2986	2.0058				0.1506	0.1506		0.1506	0.1506						
Total	**161.9314**	**2.0058**				**0.1506**	**0.1506**		**0.1506**	**0.1506**						

3.7 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	0.0384	0.0528				9.5000e-004	0.1141		8.8000e-004	0.0309						
Total	**0.0384**	**0.0528**				**9.5000e-004**	**0.1141**		**8.8000e-004**	**0.0309**						

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.5560	1.2876				0.0195	0.9638		0.0179	0.2731						
Unmitigated	0.5560	1.2876				0.0195	0.9638		0.0179	0.2731						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	150.00	150.00	150.00	437,927	437,927
Parking Lot	0.00	0.00	0.00		
Total	150.00	150.00	150.00	437,927	437,927

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.627987	0.058543	0.149166	0.078755	0.026467	0.003331	0.026417	0.003903	0.003129	0.011009	0.010235	0.000550	0.000507

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0948	0.8622				0.0655	0.0655		0.0655	0.0655						
NaturalGas Unmitigated	0.0948	0.8622				0.0655	0.0655		0.0655	0.0655						

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	8794.52	0.0948	0.8622				0.0655	0.0655		0.0655	0.0655						
Parking Lot	0	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Total		**0.0948**	**0.8622**				**0.0655**	**0.0655**		**0.0655**	**0.0655**						

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
General Light Industry	8.79452	0.0948	0.8622				0.0655	0.0655		0.0655	0.0655						
Total		**0.0948**	**0.8622**				**0.0655**	**0.0655**		**0.0655**	**0.0655**						

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.4206	1.7000e-004				6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005						
Unmitigated	3.4206	1.7000e-004				6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3587					0.0000	0.0000		0.0000	0.0000						
Consumer Products	3.0602					0.0000	0.0000		0.0000	0.0000						
Landscaping	1.7100e-003	1.7000e-004				6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005						
Total	**3.4206**	**1.7000e-004**				**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**						

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3587					0.0000	0.0000		0.0000	0.0000						
Consumer Products	3.0602					0.0000	0.0000		0.0000	0.0000						
Landscaping	1.7100e-003	1.7000e-004				6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005						
Total	**3.4206**	**1.7000e-004**				**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**						

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

1828 Egbert Ave

San Francisco County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	125.00	1000sqft	2.87	125,000.00	0
Parking Lot	45.00	Space	0.41	18,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	427	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor for 2013 provided by PG&E here: http://www.pgecurrents.com/2015/01/30/pge-cuts-carbon-emissions-with-clean-energy/

Land Use - Total building area = approximately 125,000 sf.

Vehicle Trips - See Transportation and Circulation section of Addendum for the proposed project for analysis that concludes that there would be approximately 150 vehicle trips per day. Trip rate = trips per 1,000 sq ft/day = 150/125=1.2 trip rate per day. This rate would apply seven days per week as the proposed ISE facility would operate 24/7.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	427
tblProjectCharacteristics	OperationalYear	2014	2017
tblVehicleTrips	ST_TR	1.32	1.20
tblVehicleTrips	SU_TR	0.68	1.20
tblVehicleTrips	WD_TR	6.97	1.20

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	4.8990	51.8236				2.7557	20.9917		2.5352	12.5109						
2018	161.9685	25.2535				1.5249	2.2426		1.4330	1.6263						
Total	**166.8675**	**77.0771**				**4.2806**	**23.2342**		**3.9682**	**14.1373**						

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	4.8990	51.8236				2.7557	20.9917		2.5352	12.5109						
2018	161.9685	25.2535				1.5249	2.2426		1.4330	1.6263						
Total	**166.8675**	**77.0771**				**4.2806**	**23.2342**		**3.9682**	**14.1373**						

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.4206	1.7000e-004				6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005						
Energy	0.0948	0.8622				0.0655	0.0655		0.0655	0.0655						
Mobile	0.5290	1.1553				0.0194	0.9637		0.0179	0.2731						
Total	**4.0444**	**2.0177**				**0.0850**	**1.0293**		**0.0835**	**0.3386**						

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.4206	1.7000e-004				6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005						
Energy	0.0948	0.8622				0.0655	0.0655		0.0655	0.0655						
Mobile	0.5290	1.1553				0.0194	0.9637		0.0179	0.2731						
Total	**4.0444**	**2.0177**				**0.0850**	**1.0293**		**0.0835**	**0.3386**						

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	1/27/2017	5	20	
2	Site Preparation	Site Preparation	1/28/2017	2/3/2017	5	5	
3	Grading	Grading	2/4/2017	2/15/2017	5	8	
4	Building Construction	Building Construction	2/16/2017	1/3/2018	5	230	
5	Paving	Paving	1/4/2018	1/29/2018	5	18	
6	Architectural Coating	Architectural Coating	1/30/2018	2/22/2018	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 188,310; Non-Residential Outdoor: 62,770 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Demolition	Excavators	3	8.00	162	0.38
Grading	Excavators	1	8.00	162	0.38
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	125	0.42
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Graders	1	8.00	174	0.41
Paving	Paving Equipment	2	6.00	130	0.36
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	60.00	23.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	12.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.0482	42.6971				2.1252	2.1252		1.9797	1.9797						
Total	**4.0482**	**42.6971**				**2.1252**	**2.1252**		**1.9797**	**1.9797**						

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	0.0507	0.0585				1.2100e-003	0.1427		1.1100e-003	0.0386						
Total	**0.0507**	**0.0585**				**1.2100e-003**	**0.1427**		**1.1100e-003**	**0.0386**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.0482	42.6971				2.1252	2.1252		1.9797	1.9797						
Total	**4.0482**	**42.6971**				**2.1252**	**2.1252**		**1.9797**	**1.9797**						

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	0.0507	0.0585				1.2100e-003	0.1427		1.1100e-003	0.0386						
Total	**0.0507**	**0.0585**				**1.2100e-003**	**0.1427**		**1.1100e-003**	**0.0386**						

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	18.0663		0.0000	9.9307						
Off-Road	4.8382	51.7535				2.7542	2.7542		2.5339	2.5339						
Total	**4.8382**	**51.7535**				**2.7542**	**20.8205**		**2.5339**	**12.4646**						

3.3 Site Preparation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	0.0608	0.0702				1.4500e-003	0.1712		1.3400e-003	0.0464						
Total	**0.0608**	**0.0702**				**1.4500e-003**	**0.1712**		**1.3400e-003**	**0.0464**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	18.0663		0.0000	9.9307						
Off-Road	4.8382	51.7535				2.7542	2.7542		2.5339	2.5339						
Total	**4.8382**	**51.7535**				**2.7542**	**20.8205**		**2.5339**	**12.4646**						

3.3 Site Preparation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	0.0608	0.0702				1.4500e-003	0.1712		1.3400e-003	0.0464						
Total	**0.0608**	**0.0702**				**1.4500e-003**	**0.1712**		**1.3400e-003**	**0.0464**						

3.4 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	6.5523		0.0000	3.3675						
Off-Road	3.4555	35.9825				2.0388	2.0388		1.8757	1.8757						
Total	**3.4555**	**35.9825**				**2.0388**	**8.5912**		**1.8757**	**5.2432**						

3.4 Grading - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	0.0507	0.0585				1.2100e-003	0.1427		1.1100e-003	0.0386						
Total	**0.0507**	**0.0585**				**1.2100e-003**	**0.1427**		**1.1100e-003**	**0.0386**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust						0.0000	6.5523		0.0000	3.3675						
Off-Road	3.4555	35.9825				2.0388	2.0388		1.8757	1.8757						
Total	**3.4555**	**35.9825**				**2.0388**	**8.5912**		**1.8757**	**5.2432**						

3.4 Grading - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	0.0507	0.0585				1.2100e-003	0.1427		1.1100e-003	0.0386						
Total	**0.0507**	**0.0585**				**1.2100e-003**	**0.1427**		**1.1100e-003**	**0.0386**						

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057				1.7812	1.7812		1.6730	1.6730						
Total	**3.1024**	**26.4057**				**1.7812**	**1.7812**		**1.6730**	**1.6730**						

3.5 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.2641	1.9650				0.0282	0.1802		0.0260	0.0693						
Worker	0.2026	0.2338				4.8300e-003	0.5706		4.4600e-003	0.1545						
Total	**0.4667**	**2.1988**				**0.0331**	**0.7508**		**0.0304**	**0.2238**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057				1.7812	1.7812		1.6730	1.6730						
Total	**3.1024**	**26.4057**				**1.7812**	**1.7812**		**1.6730**	**1.6730**						

3.5 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.2641	1.9650				0.0282	0.1802		0.0260	0.0693						
Worker	0.2026	0.2338				4.8300e-003	0.5706		4.4600e-003	0.1545						
Total	**0.4667**	**2.1988**				**0.0331**	**0.7508**		**0.0304**	**0.2238**						

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608				1.4943	1.4943		1.4048	1.4048						
Total	**2.6687**	**23.2608**				**1.4943**	**1.4943**		**1.4048**	**1.4048**						

3.5 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.2105	1.7795				0.0259	0.1777		0.0238	0.0671						
Worker	0.1854	0.2132				4.7400e-003	0.5706		4.3800e-003	0.1545						
Total	**0.3959**	**1.9927**				**0.0306**	**0.7483**		**0.0282**	**0.2216**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608				1.4943	1.4943		1.4048	1.4048						
Total	**2.6687**	**23.2608**				**1.4943**	**1.4943**		**1.4048**	**1.4048**						

3.5 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.2105	1.7795				0.0259	0.1777		0.0238	0.0671						
Worker	0.1854	0.2132				4.7400e-003	0.5706		4.3800e-003	0.1545						
Total	**0.3959**	**1.9927**				**0.0306**	**0.7483**		**0.0282**	**0.2216**						

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4060	14.3192				0.8272	0.8272		0.7628	0.7628						
Paving	0.0597					0.0000	0.0000		0.0000	0.0000						
Total	**1.4657**	**14.3192**				**0.8272**	**0.8272**		**0.7628**	**0.7628**						

3.6 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	0.0618	0.0711				1.5800e-003	0.1902		1.4600e-003	0.0515						
Total	**0.0618**	**0.0711**				**1.5800e-003**	**0.1902**		**1.4600e-003**	**0.0515**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4060	14.3192				0.8272	0.8272		0.7628	0.7628						
Paving	0.0597					0.0000	0.0000		0.0000	0.0000						
Total	**1.4657**	**14.3192**				**0.8272**	**0.8272**		**0.7628**	**0.7628**						

3.6 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	0.0618	0.0711				1.5800e-003	0.1902		1.4600e-003	0.0515						
Total	**0.0618**	**0.0711**				**1.5800e-003**	**0.1902**		**1.4600e-003**	**0.0515**						

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	161.6328					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2986	2.0058				0.1506	0.1506		0.1506	0.1506						
Total	**161.9314**	**2.0058**				**0.1506**	**0.1506**		**0.1506**	**0.1506**						

3.7 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	0.0371	0.0426				9.5000e-004	0.1141		8.8000e-004	0.0309						
Total	**0.0371**	**0.0426**				**9.5000e-004**	**0.1141**		**8.8000e-004**	**0.0309**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	161.6328					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.2986	2.0058				0.1506	0.1506		0.1506	0.1506						
Total	**161.9314**	**2.0058**				**0.1506**	**0.1506**		**0.1506**	**0.1506**						

3.7 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	0.0371	0.0426				9.5000e-004	0.1141		8.8000e-004	0.0309						
Total	**0.0371**	**0.0426**				**9.5000e-004**	**0.1141**		**8.8000e-004**	**0.0309**						

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.5290	1.1553				0.0194	0.9637		0.0179	0.2731						
Unmitigated	0.5290	1.1553				0.0194	0.9637		0.0179	0.2731						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	150.00	150.00	150.00	437,927	437,927
Parking Lot	0.00	0.00	0.00		
Total	150.00	150.00	150.00	437,927	437,927

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.627987	0.058543	0.149166	0.078755	0.026467	0.003331	0.026417	0.003903	0.003129	0.011009	0.010235	0.000550	0.000507

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0948	0.8622				0.0655	0.0655		0.0655	0.0655						
NaturalGas Unmitigated	0.0948	0.8622				0.0655	0.0655		0.0655	0.0655						

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	8794.52	0.0948	0.8622				0.0655	0.0655		0.0655	0.0655						
Parking Lot	0	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Total		**0.0948**	**0.8622**				**0.0655**	**0.0655**		**0.0655**	**0.0655**						

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
General Light Industry	8.79452	0.0948	0.8622				0.0655	0.0655		0.0655	0.0655						
Total		**0.0948**	**0.8622**				**0.0655**	**0.0655**		**0.0655**	**0.0655**						

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.4206	1.7000e-004				6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005						
Unmitigated	3.4206	1.7000e-004				6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3587					0.0000	0.0000		0.0000	0.0000						
Consumer Products	3.0602					0.0000	0.0000		0.0000	0.0000						
Landscaping	1.7100e-003	1.7000e-004				6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005						
Total	**3.4206**	**1.7000e-004**				**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**						

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3587					0.0000	0.0000		0.0000	0.0000						
Consumer Products	3.0602					0.0000	0.0000		0.0000	0.0000						
Landscaping	1.7100e-003	1.7000e-004				6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005						
Total	**3.4206**	**1.7000e-004**				**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**						

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

1828 Egbert Ave

San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	125.00	1000sqft	2.87	125,000.00	0
Parking Lot	45.00	Space	0.41	18,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	4.6	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	427	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor for 2013 provided by PG&E here: http://www.pgecurrents.com/2015/01/30/pge-cuts-carbon-emissions-with-clean-energy/

Land Use - Total building area = approximately 125,000 sf.

Vehicle Trips - See Transportation and Circulation section of Addendum for the proposed project for analysis that concludes that there would be approximately 150 vehicle trips per day. Trip rate = trips per 1,000 sq ft/day = 150/125=1.2 trip rate per day. This rate would apply seven days per week as the proposed ISE facility would operate 24/7.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	427
tblProjectCharacteristics	OperationalYear	2014	2017
tblVehicleTrips	ST_TR	1.32	1.20
tblVehicleTrips	SU_TR	0.68	1.20
tblVehicleTrips	WD_TR	6.97	1.20

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.4757	3.9611				0.2423	0.3944		0.2270	0.2871						
2018	1.4761	0.1861				0.0111	0.0148		0.0104	0.0114						
Total	**1.9517**	**4.1472**				**0.2534**	**0.4092**		**0.2374**	**0.2985**						

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.4757	3.9611				0.2423	0.3944		0.2270	0.2871						
2018	1.4761	0.1861				0.0111	0.0148		0.0104	0.0114						
Total	**1.9517**	**4.1472**				**0.2534**	**0.4092**		**0.2374**	**0.2985**						

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.6241	2.0000e-005				1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005						
Energy	0.0173	0.1574				0.0120	0.0120		0.0120	0.0120						
Mobile	0.0952	0.2262				3.5300e-003	0.1691		3.2500e-003	0.0481						
Waste						0.0000	0.0000		0.0000	0.0000						
Water						0.0000	0.0000		0.0000	0.0000						
Total	**0.7366**	**0.3836**				**0.0155**	**0.1810**		**0.0152**	**0.0601**						

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.6241	2.0000e-005				1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005						
Energy	0.0173	0.1574				0.0120	0.0120		0.0120	0.0120						
Mobile	0.0952	0.2262				3.5300e-003	0.1691		3.2500e-003	0.0481						
Waste						0.0000	0.0000		0.0000	0.0000						
Water						0.0000	0.0000		0.0000	0.0000						
Total	**0.7366**	**0.3836**				**0.0155**	**0.1810**		**0.0152**	**0.0601**						

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	1/27/2017	5	20	
2	Site Preparation	Site Preparation	1/28/2017	2/3/2017	5	5	
3	Grading	Grading	2/4/2017	2/15/2017	5	8	
4	Building Construction	Building Construction	2/16/2017	1/3/2018	5	230	
5	Paving	Paving	1/4/2018	1/29/2018	5	18	
6	Architectural Coating	Architectural Coating	1/30/2018	2/22/2018	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 188,310; Non-Residential Outdoor: 62,770 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Demolition	Excavators	3	8.00	162	0.38
Grading	Excavators	1	8.00	162	0.38
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	125	0.42
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Graders	1	8.00	174	0.41
Paving	Paving Equipment	2	6.00	130	0.36
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	60.00	23.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	12.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0405	0.4270				0.0213	0.0213		0.0198	0.0198						
Total	**0.0405**	**0.4270**				**0.0213**	**0.0213**		**0.0198**	**0.0198**						

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	4.9000e-004	6.7000e-004				1.0000e-005	1.3700e-003		1.0000e-005	3.7000e-004						
Total	**4.9000e-004**	**6.7000e-004**				**1.0000e-005**	**1.3700e-003**		**1.0000e-005**	**3.7000e-004**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0405	0.4270				0.0213	0.0213		0.0198	0.0198						
Total	**0.0405**	**0.4270**				**0.0213**	**0.0213**		**0.0198**	**0.0198**						

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	4.9000e-004	6.7000e-004				1.0000e-005	1.3700e-003		1.0000e-005	3.7000e-004						
Total	**4.9000e-004**	**6.7000e-004**				**1.0000e-005**	**1.3700e-003**		**1.0000e-005**	**3.7000e-004**						

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	0.0452		0.0000	0.0248						
Off-Road	0.0121	0.1294				6.8900e-003	6.8900e-003		6.3300e-003	6.3300e-003						
Total	**0.0121**	**0.1294**				**6.8900e-003**	**0.0521**		**6.3300e-003**	**0.0312**						

3.3 Site Preparation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	1.5000e-004	2.0000e-004				0.0000	4.1000e-004		0.0000	1.1000e-004						
Total	**1.5000e-004**	**2.0000e-004**				**0.0000**	**4.1000e-004**		**0.0000**	**1.1000e-004**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	0.0452		0.0000	0.0248						
Off-Road	0.0121	0.1294				6.8900e-003	6.8900e-003		6.3300e-003	6.3300e-003						
Total	**0.0121**	**0.1294**				**6.8900e-003**	**0.0521**		**6.3300e-003**	**0.0312**						

3.3 Site Preparation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	1.5000e-004	2.0000e-004				0.0000	4.1000e-004		0.0000	1.1000e-004						
Total	**1.5000e-004**	**2.0000e-004**				**0.0000**	**4.1000e-004**		**0.0000**	**1.1000e-004**						

3.4 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	0.0262		0.0000	0.0135						
Off-Road	0.0138	0.1439				8.1600e-003	8.1600e-003		7.5000e-003	7.5000e-003						
Total	**0.0138**	**0.1439**				**8.1600e-003**	**0.0344**		**7.5000e-003**	**0.0210**						

3.4 Grading - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	2.0000e-004	2.7000e-004				0.0000	5.5000e-004		0.0000	1.5000e-004						
Total	**2.0000e-004**	**2.7000e-004**				**0.0000**	**5.5000e-004**		**0.0000**	**1.5000e-004**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	0.0262		0.0000	0.0135						
Off-Road	0.0138	0.1439				8.1600e-003	8.1600e-003		7.5000e-003	7.5000e-003						
Total	**0.0138**	**0.1439**				**8.1600e-003**	**0.0344**		**7.5000e-003**	**0.0210**						

3.4 Grading - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	2.0000e-004	2.7000e-004				0.0000	5.5000e-004		0.0000	1.5000e-004						
Total	**2.0000e-004**	**2.7000e-004**				**0.0000**	**5.5000e-004**		**0.0000**	**1.5000e-004**						

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3521	2.9970				0.2022	0.2022		0.1899	0.1899						
Total	**0.3521**	**2.9970**				**0.2022**	**0.2022**		**0.1899**	**0.1899**						

3.5 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0341	0.2321				3.2200e-003	0.0199		2.9600e-003	7.7400e-003						
Worker	0.0222	0.0305				5.5000e-004	0.0623		5.1000e-004	0.0169						
Total	**0.0563**	**0.2626**				**3.7700e-003**	**0.0822**		**3.4700e-003**	**0.0247**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3521	2.9970				0.2022	0.2022		0.1899	0.1899						
Total	**0.3521**	**2.9970**				**0.2022**	**0.2022**		**0.1899**	**0.1899**						

3.5 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0341	0.2321				3.2200e-003	0.0199		2.9600e-003	7.7400e-003						
Worker	0.0222	0.0305				5.5000e-004	0.0623		5.1000e-004	0.0169						
Total	**0.0563**	**0.2626**				**3.7700e-003**	**0.0822**		**3.4700e-003**	**0.0247**						

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.0000e-003	0.0349				2.2400e-003	2.2400e-003		2.1100e-003	2.1100e-003						
Total	**4.0000e-003**	**0.0349**				**2.2400e-003**	**2.2400e-003**		**2.1100e-003**	**2.1100e-003**						

3.5 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	3.5000e-004	2.7800e-003				4.0000e-005	2.6000e-004		4.0000e-005	1.0000e-004						
Worker	2.7000e-004	3.7000e-004				1.0000e-005	8.2000e-004		1.0000e-005	2.2000e-004						
Total	**6.2000e-004**	**3.1500e-003**				**5.0000e-005**	**1.0800e-003**		**5.0000e-005**	**3.2000e-004**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.0000e-003	0.0349				2.2400e-003	2.2400e-003		2.1100e-003	2.1100e-003						
Total	**4.0000e-003**	**0.0349**				**2.2400e-003**	**2.2400e-003**		**2.1100e-003**	**2.1100e-003**						

3.5 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	3.5000e-004	2.7800e-003				4.0000e-005	2.6000e-004		4.0000e-005	1.0000e-004						
Worker	2.7000e-004	3.7000e-004				1.0000e-005	8.2000e-004		1.0000e-005	2.2000e-004						
Total	**6.2000e-004**	**3.1500e-003**				**5.0000e-005**	**1.0800e-003**		**5.0000e-005**	**3.2000e-004**						

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0127	0.1289				7.4500e-003	7.4500e-003		6.8700e-003	6.8700e-003						
Paving	5.4000e-004					0.0000	0.0000		0.0000	0.0000						
Total	**0.0132**	**0.1289**				**7.4500e-003**	**7.4500e-003**		**6.8700e-003**	**6.8700e-003**						

3.6 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	5.3000e-004	7.3000e-004				1.0000e-005	1.6500e-003		1.0000e-005	4.5000e-004						
Total	**5.3000e-004**	**7.3000e-004**				**1.0000e-005**	**1.6500e-003**		**1.0000e-005**	**4.5000e-004**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0127	0.1289				7.4500e-003	7.4500e-003		6.8700e-003	6.8700e-003						
Paving	5.4000e-004					0.0000	0.0000		0.0000	0.0000						
Total	**0.0132**	**0.1289**				**7.4500e-003**	**7.4500e-003**		**6.8700e-003**	**6.8700e-003**						

3.6 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	5.3000e-004	7.3000e-004				1.0000e-005	1.6500e-003		1.0000e-005	4.5000e-004						
Total	**5.3000e-004**	**7.3000e-004**				**1.0000e-005**	**1.6500e-003**		**1.0000e-005**	**4.5000e-004**						

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.4547					0.0000	0.0000		0.0000	0.0000						
Off-Road	2.6900e-003	0.0181				1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003						
Total	**1.4574**	**0.0181**				**1.3500e-003**	**1.3500e-003**		**1.3500e-003**	**1.3500e-003**						

3.7 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	3.2000e-004	4.4000e-004				1.0000e-005	9.9000e-004		1.0000e-005	2.7000e-004						
Total	**3.2000e-004**	**4.4000e-004**				**1.0000e-005**	**9.9000e-004**		**1.0000e-005**	**2.7000e-004**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.4547					0.0000	0.0000		0.0000	0.0000						
Off-Road	2.6900e-003	0.0181				1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003						
Total	**1.4574**	**0.0181**				**1.3500e-003**	**1.3500e-003**		**1.3500e-003**	**1.3500e-003**						

3.7 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Vendor	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Worker	3.2000e-004	4.4000e-004				1.0000e-005	9.9000e-004		1.0000e-005	2.7000e-004						
Total	**3.2000e-004**	**4.4000e-004**				**1.0000e-005**	**9.9000e-004**		**1.0000e-005**	**2.7000e-004**						

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0952	0.2262				3.5300e-003	0.1691		3.2500e-003	0.0481						
Unmitigated	0.0952	0.2262				3.5300e-003	0.1691		3.2500e-003	0.0481						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	150.00	150.00	150.00	437,927	437,927
Parking Lot	0.00	0.00	0.00		
Total	150.00	150.00	150.00	437,927	437,927

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.627987	0.058543	0.149166	0.078755	0.026467	0.003331	0.026417	0.003903	0.003129	0.011009	0.010235	0.000550	0.000507

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000						
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000						
NaturalGas Mitigated	0.0173	0.1574				0.0120	0.0120		0.0120	0.0120						
NaturalGas Unmitigated	0.0173	0.1574				0.0120	0.0120		0.0120	0.0120						

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	3.21e+006	0.0173	0.1574				0.0120	0.0120		0.0120	0.0120						
Parking Lot	0	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
Total		**0.0173**	**0.1574**				**0.0120**	**0.0120**		**0.0120**	**0.0120**						

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000						
General Light Industry	3.21e+006	0.0173	0.1574				0.0120	0.0120		0.0120	0.0120						
Total		**0.0173**	**0.1574**				**0.0120**	**0.0120**		**0.0120**	**0.0120**						

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	1.03375e+006				
Parking Lot	15840				
Total					

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	1.03375e+006				
Parking Lot	15840				
Total					

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.6241	2.0000e-005				1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005						
Unmitigated	0.6241	2.0000e-005				1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0655					0.0000	0.0000		0.0000	0.0000						
Consumer Products	0.5585					0.0000	0.0000		0.0000	0.0000						
Landscaping	1.5000e-004	2.0000e-005				1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005						
Total	**0.6241**	**2.0000e-005**				**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**						

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0655					0.0000	0.0000		0.0000	0.0000						
Consumer Products	0.5585					0.0000	0.0000		0.0000	0.0000						
Landscaping	1.5000e-004	2.0000e-005				1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005						
Total	**0.6241**	**2.0000e-005**				**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**						

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated				
Unmitigated				

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	28.9063 / 0				
Parking Lot	0 / 0				
Total					

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	28.9063 / 0				
Parking Lot	0 / 0				
Total					

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated				
Unmitigated				

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	155				
Parking Lot	0				
Total					

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	155				
Parking Lot	0				
Total					

9.0 Operational Offroad

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

10.0 Vegetation