

**INITIAL STUDY /
MITIGATED NEGATIVE DECLARATION

PINE VALLEY FIRE STATION PROJECT**

Prepared for:

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1.0 INTRODUCTION

1.1 Statutory Authority and Requirements

In accordance with CEQA (Public Resources Code Sections 21000–21177) and pursuant to Section 15063 (Initial Study) of Title 14 of the California Code of Regulations (CCR), the County of San Diego Department of General Services is the lead agency for the proposed project and is responsible for analyzing and approving the CEQA document.

If the lead agency determines that any aspect of the proposed project, either individually or cumulatively, may cause a significant environmental impact, an Environmental Impact Report (EIR) must be prepared. If the lead agency finds no evidence that any aspect of the project would cause a significant environmental effect, either as proposed or modified to include mitigation measures identified in the Initial Study, the lead agency shall instead prepare a Negative Declaration or Mitigated Negative Declaration, as appropriate.

As the lead agency, the County of San Diego Department of General Services will approve and/or certify the document, which is intended to be informational in regard to the environmental effects of subsequent discretionary actions. Neither approval nor certification presupposes or mandates any actions on the part of the agencies from which permits and approvals would be required.

As required under CEQA, the environmental document and any supporting analyses are subject to a public review period. During this period, comments regarding environmental issues discussed in the document can be provided to the County of San Diego Department of General Services. The Department of General Services will consider and respond to these comments as part of the environmental review process, and all comments and responses will be documented in an appendix.

1.2 Purpose of Initial Study

Per Section 15063 of the CEQA Guidelines (Sections 15000–15387 of the CCR), the purpose and required content of an Initial Study are to:

- (1) Provide the Lead Agency with information to use as the basis for deciding whether to prepare an EIR or a Negative Declaration;
- (2) Enable an applicant or Lead Agency to modify a project, mitigating adverse impacts before an EIR is prepared, thereby enabling the project to qualify for a Negative Declaration.
- (3) Assist in the preparation of an EIR, if one is required, by:
 - (A) Focusing the EIR on the effects determined to be significant,
 - (B) Identifying the effects determined not to be significant,
 - (C) Explaining the reasons for determining that potentially significant effects would not be significant, and

-
- (D) Identifying whether a program EIR, tiering, or another appropriate process can be used for analysis of the project's environmental effects;
- (4) Facilitate environmental assessment early in the design of a project;
 - (5) Provide documentation of the factual basis for the finding in a Negative Declaration that a project will not have a significant effect on the environment;
 - (6) Eliminate unnecessary EIRs;
 - (7) Determine whether a previously prepared EIR could be used with the project.

Similarly, the required contents of an Initial Study include:

- (1) A description of the project including the location of the project;
- (2) An identification of the environmental setting;
- (3) An identification of environmental effects by use of a checklist, matrix, or other method, provided that entries on a checklist or other form are briefly explained to indicate that there is some evidence to support the entries. The brief explanation may be either through a narrative or a reference to another information source such as an attached map, photographs, or an earlier EIR or negative declaration. A reference to another document should include, where appropriate, a citation to the page or pages where the information is found.
- (4) A discussion of the ways to mitigate the significant effects identified, if any;
- (5) An examination of whether the project would be consistent with existing zoning, plans, and other applicable land use controls;
- (6) The name of the person or persons who prepared or participated in the Initial Study.

1.3 Incorporation by Reference

A list of references is included in Chapter 8.0, References, of this Initial Study. The Initial Study has been prepared based on technical studies prepared for the project. The Initial Study reflects the findings of those technical reports and provides mitigation measures as needed to reduce potential impacts of the proposed project to less than significant.

2.0 ENVIRONMENTAL SUMMARY

2.1 Background

1. Project: Pine Valley Fire Station Project
2. Lead Agency: County of San Diego
Department of General Services
5560 Overland Avenue, Suite 410
San Diego, California 92123
4. Contact Person and Phone: Marc Cass
(858) 694-2047

5. Project Location:

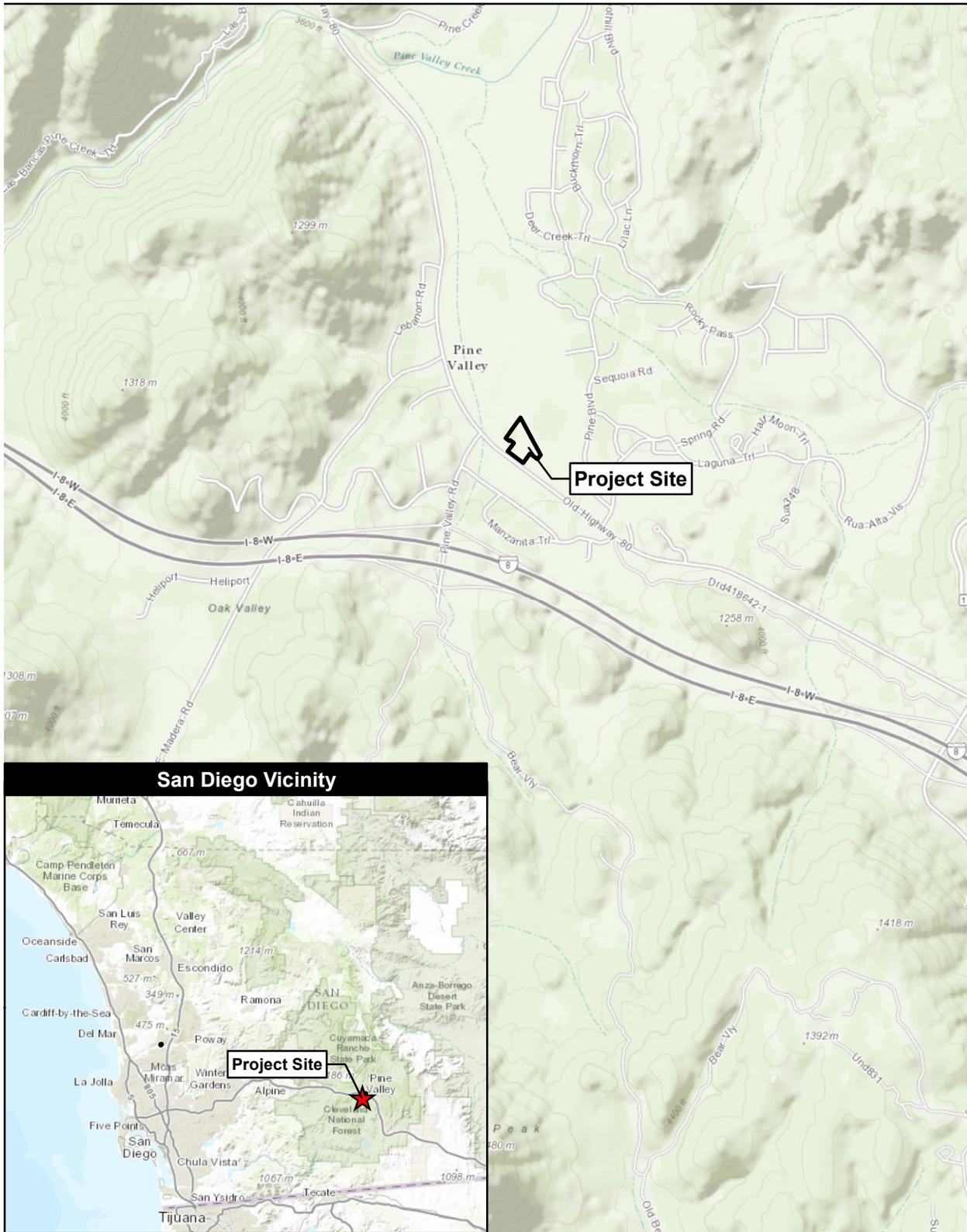
The project is located in the community of Pine Valley in southeastern San Diego County, north of Interstate 8 and east of State Route 79, as shown in Figure 1, Regional/Vicinity Map. The fire station to be renovated is located at 28850 Old Highway 80 (APN 410-120-37), and an existing Fire Department property (APN 410-120-35) would also be renovated as a training facility.

6. Applicant: County of San Diego
Department of General Services
5560 Overland Avenue, Suite 410
San Diego, California 92123
7. General Plan Designation: C-36: General Commercial
8. Zoning: Public Semi Public Facilities; Rural Commercial
9. Project Description:

The project proposes replacement of an existing County Fire Authority (CFA) fire station in the community of Pine Valley, California. Refer to Figure 1, Regional/Vicinity Map, for detailed location information. In addition to the replacement of the existing facility, the proposed project also includes acquisition of several adjacent properties and easements, as well as the replacement of an existing CFA-owned property, the “Training Facility,” located northeast of the existing station behind the post office. A map of all project components is included in this document as Figure 2, Site Plan. Construction is anticipated to start in the summer of 2017, with demolition completed early 2017 and additional construction activities ending in the summer of 2018. The project is anticipated to be operational by the end of 2018. The project is under jurisdiction of the County of San Diego Department of General Services; the County of San Diego will act as the lead agency under CEQA.

Property and Easement Acquisitions

The project would include property acquisitions and easement acquisitions as part of the proposed project, as shown in Figure 3.



Source: ESRI.



2,000 1,000 0 2,000 Feet



Scale: 1:24,000; 1 inch = 2000 feet

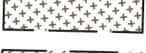
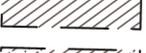
Figure 1
Regional/Vicinity Map
Pine Valley Fire Station

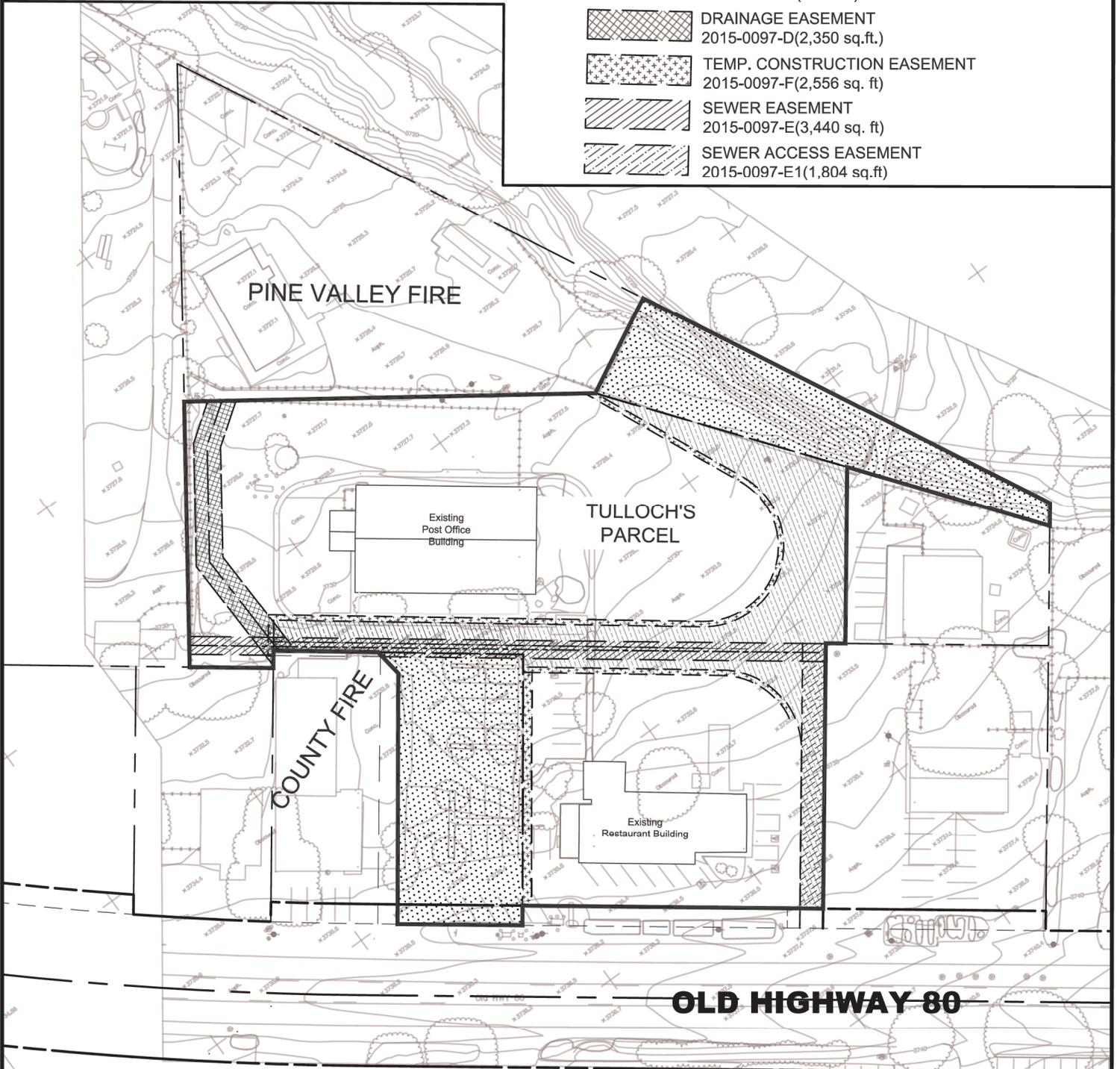
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SCALE: 1"=80'

LEGEND:

-  EXISTING RIGHT-OF-WAY
-  PROPERTY BOUNDARY
-  TULLOCH'S PARCEL
-  FEE PARCEL
2015-0097-A,B(0.46 ac)
-  ACCESS/UTIL EASEMENT
2015-0097-C(0.33 ac)
-  DRAINAGE EASEMENT
2015-0097-D(2,350 sq.ft.)
-  TEMP. CONSTRUCTION EASEMENT
2015-0097-F(2,556 sq. ft)
-  SEWER EASEMENT
2015-0097-E(3,440 sq. ft)
-  SEWER ACCESS EASEMENT
2015-0097-E1(1,804 sq.ft)



Pine Valley Fire Station
28850 Old Highway 80
In The Vicinity of Pine Valley

Figure 3
Property and Easement
Acquisition - Pine Valley
Fire Station

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A total of 0.46-acres between two parcels would be acquired to accommodate facility expansion, and a 0.33-acre easement to the north of the fire station would be acquired by the CFA for ease of access to the site and for utilities. In addition, two sewer easements (1,800 square-feet and 3,440 square-feet) would be acquired along with a 2,350 square-foot drainage easement and a 2,556 square-foot temporary construction easement.

Replacement of Existing Facility

The existing fire station is an approximately 6,900-square-foot facility with three apparatus bays, which are located immediately adjacent to Old Highway 80. Access to the rear of the facility currently occurs via an easement located between the facility and the adjacent post office.

The proposed project would increase the size of the existing facility to approximately 13,000 square feet. The new facility would have four apparatus bays, 12 parking spaces, and 10 bedrooms, as well as a dining area, recreation space, and office space for CFA personnel. During construction of the fire station, fire services will be temporarily based out of the Training Facility site. Construction activities will not result in a disruption to emergency services in the area.

Replacement of Training Site

The CFA-owned Training Facility site, located to the north of the fire station, behind the existing post office building, would be renovated as part of the proposed project. The Training Facility encompasses approximately 0.5 acre and houses a barn and a modular structure surrounded by a concrete walkway. A generator is located adjacent to the modular structure and a fuel tank next to the existing barn, as well as a propane tank in the rear of the site and a fire hydrant located along the property line with the post office.

As part of the proposed project, the barn would be demolished and the space would be enhanced to serve as a classroom and training area. A new concrete drive aisle would be installed to the east of the post office parking lot in order to access the new training facility. Existing ramps providing access to the modular structure on the Training Facility site would also be relocated. Two new 400-amp panels, as well as related underground electrical services feeds, would also be installed. A sewer lift station, which would pump sewage to a nearby treatment facility, would also be installed.

Other Activities

As part of construction of the proposed project, parking areas of the properties immediately adjacent to or located between the two CFA properties would receive slurry seal and restriping of existing parking spaces.

Bioretention basins are proposed on the site to provide pollution and flow control. As described in the SWQMP (Appendix D), 5,650 square feet of bioretention basin

would be required under applicable regulation. Due to the small size of landscaped areas on the site, there would need to be several basins located throughout the site rather than one large one. Locations chosen for the bioretention basins are located outside of the 100-year floodplain and floodway.

Operational Characteristics

The Pine Valley Fire Department was founded in 1962 and provides structural fire protection and emergency medical services within the communities of Pine Valley and Guatay in east San Diego County. The Pine Valley Fire Department serves an area of approximately 75 square miles; however, a significant amount of that acreage is a portion of the Cleveland National Forest, in which the US Forest Service is responsible for wildland fires. The Pine Valley Fire Department provides structural fire protection and prevention, as well as emergency medical services at the Basic Life Support (BLS) level and Advanced Life Support (ALS) levels

In 2008, the County of San Diego Fire Enhancement Program began to subsidize a California Department of Forestry and Fire Protection (CAL FIRE) presence within the Pine Valley Fire Protection Department. The Pine Valley Fire Station is staffed daily by two CAL FIRE firefighters, as well as supplemental volunteers. In the same year, the County Board of Supervisors approved a plan to improve emergency services by administering services through the Fire Enhancement Program and San Diego County Fire Authority rather than through individual entities throughout the unincorporated county. Funding for the station's career staffing stems from the County's contract with CAL FIRE and would remain in place after the reorganization.

County Service Area No. 135 will provide governance for services provided in the project area once the reorganization is complete. Based on the agreed-upon Plan for Service related to the reorganizing, staffing of the facility will continue at a level identical to that described above or an improved level. The County's contract with CAL FIRE mandates that the existing staffing goal, two reserve volunteers and one community volunteer per engine, remains in place. The consolidation of volunteer fire companies and fire protection districts throughout the county began in 2011, and formal dissolution of the Pine Valley Fire Protection District is expected in 2016.

10. Surrounding Land Use(s) and Project Setting:

The project would take place on the two parcels of land being renovated, as well as on the roads and easements that connect them. The parcel that separates the two facilities is occupied by the Pine Valley Post Office, and a coffee shop/restaurant is located on the plot immediately adjacent to the fire station. Other existing uses near the site include a number of churches and miscellaneous commercial uses. The project site is located within a relatively flat valley within the mountains of the Peninsular Range in southeastern San Diego County. The site itself is relatively flat but slopes gradually from the portion adjacent to Old Highway 80 to the north at the training site. Vegetation in the project area is predominantly a mix of native and non-

native species that are characteristic of disturbed soils. Refer to Figure 4, Vegetation Survey Results, for a detailed description of observed vegetation on-site.

11. Other Required Agency Approvals:

The County of San Diego would serve as lead agency for the proposed project and would be responsible for approving the environmental document. The project would result in minimal impact to sensitive habitats; however, approval from the California Department of Fish and Wildlife may be required, depending on the mitigation measures proposed. The County would also be required to approve grading plans and issue building permits for the project before construction begins.

12. Previous Environmental Documentation:N/A

13. Consultation:

Federal, State, and Other Local Agencies:

U.S. Fish and Wildlife Service

California Department of Fish and Wildlife

San Diego Regional Water Quality Control Board

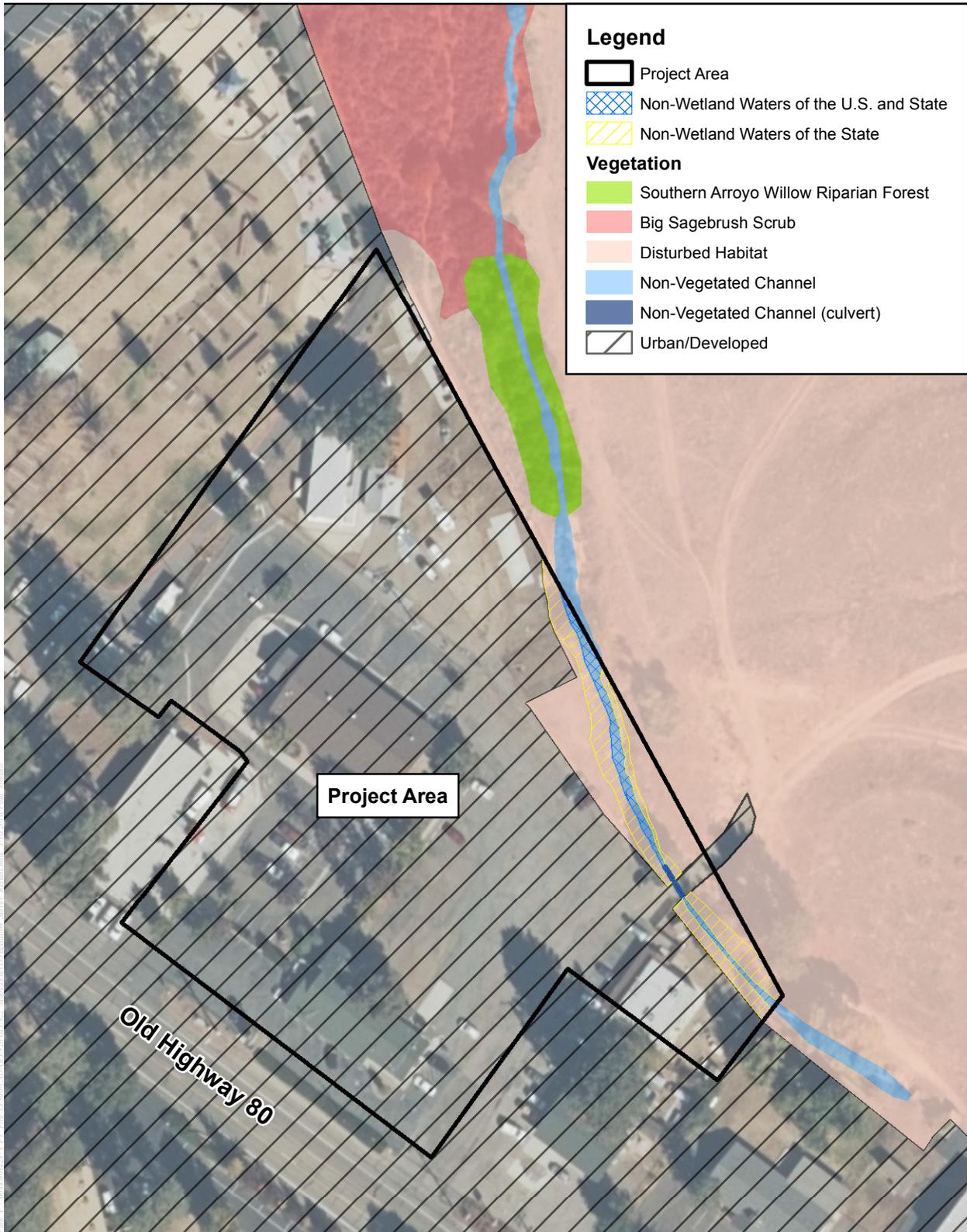
County of San Diego:

- Department of General Services
- Department of Environmental Health
- Sheriff’s Department

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages.

<input type="checkbox"/>	Aesthetics	<input type="checkbox"/>	Agriculture and Forestry	<input type="checkbox"/>	Air Quality
<input checked="" type="checkbox"/>	Biological Resources	<input checked="" type="checkbox"/>	Cultural Resources	<input type="checkbox"/>	Geology/Soils
<input type="checkbox"/>	Greenhouse Gas Emissions	<input type="checkbox"/>	Hazards and Hazardous Materials	<input type="checkbox"/>	Hydrology/Water Quality
<input type="checkbox"/>	Land Use/Planning	<input type="checkbox"/>	Mineral Resources	<input type="checkbox"/>	Noise
<input type="checkbox"/>	Population/Housing	<input type="checkbox"/>	Public Services	<input type="checkbox"/>	Recreation
<input type="checkbox"/>	Transportation/Traffic	<input type="checkbox"/>	Utilities/Service Systems	<input checked="" type="checkbox"/>	Mandatory Findings of Significance



Source: SanGIS.



100 50 0 100 Feet



Scale: 1 = 1,200 ; 1 inch = 100 feet

Figure 4
Vegetation Survey Results
Pine Valley Fire Station

2.2 Evaluation of Environmental Impacts

This section analyzes the potential environmental impacts that could result from the proposed project. Impacts are evaluated by statement of the questions relevant to each section from the Initial Study Checklist, followed by answers determined through the analysis undertaken as part of the Initial Study. Impacts considered in the analysis include potential short-term (construction-related) impacts as well as long-term, operational or day-to-day impacts. For each question, there are four possible conclusions as described below.

1. *No Impact.* Future development arising from the project's implementation will not have any measurable environmental impact on the environment and no additional analysis is required.
2. *Less than Significant Impact.* The development associated with project implementation will have the potential to impact the environment; these impacts, however, will be less than the levels or thresholds that are considered significant, and no additional analysis is required.
3. *Potentially Significant Unless Mitigated.* The development will have the potential to generate impacts that may be considered as a significant effect on the environment, although mitigation measures or changes to the project's physical or operational characteristics can reduce these impacts to levels that are less than significant.
4. *Potentially Significant Impact.* Future implementation will have impacts that are considered significant, and additional analysis is required to identify mitigation measures that could reduce these impacts to less than significant levels.

DETERMINATION:

On the basis of this initial evaluation:

- The Department of General Services finds that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION would be prepared.
- The Department of General Services finds that although the proposed project could have a significant effect on the environment, there would not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION would be prepared.
- The Department of General Services finds that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

For  April F. Heinz Director

Date

7.20.16

3.0 ENVIRONMENTAL CHECKLIST

3.1 AESTHETICS

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) *Have a substantial adverse effect on a scenic vista?*

Less than Significant Impact. The project is located approximately 0.25 mile from Interstate 8 (I-8), which is designated as a County a Scenic Highway from the City of El Cajon to the Imperial County line (County 2011). Due to the project’s distance from I-8 and its small scale, as well as vegetation, buildings, and other visual features between the highway and the project site (including the nearby temporary facilities), the project would not have a substantial adverse effect on views from this roadway. Additionally, the high rate of speed along I-8 would minimize the amount of time the proposed project would be visible to travelers.

Old Highway 80 is designated as a County Scenic Highway from State Route 79 to Interstate 8 (County 2011). Because the front of the fire station directly abuts this portion of Old Highway 80, the proposed development would be visible to those traveling in either direction along the Scenic Highway. The scale and height of the proposed development, however, would not be significantly greater than that of the existing structure. Therefore, the project would not significantly impact existing views at any point along the roadway. Landscaping would be provided in keeping with County guidelines in order to reduce views of the project by travelers on the road. Materials would be similar to those used in adjacent buildings and would reflect the rural character of the community through the use of neutral earth tones and natural buildings materials such as wood or stone. Additionally, project design would conform to design requirements included in the County of San Diego General Plan and/or Central Mountain Subregional Plan. As such, project impacts would be less than significant and no mitigation is required.

b) *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?*

Less than Significant Impact. As described in Response 3.1(a), the project is not located along a state scenic highway. Because the project would renovate an existing (non-historic) structure rather than develop previously undeveloped land, impacts to natural features such as trees and rock outcroppings would be minimal. Any scenic resources impacted by project construction

(including that of the temporary facilities) would not be substantially damaged or permanently altered. Project impacts would be less than significant and no mitigation is required.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less than Significant Impact. As described in Response 3.1(a), the proposed project would be designed to blend in to the existing visual character of the Pine Valley community. The structure would have a maximum height of two stories but would utilize the existing grade on the site to minimize perceived height as seen from the road. Materials would reflect the rural character of the area, and the project would be designed in conformance with all applicable design requirements. Public views of the site would generally occur from vehicles traveling on Old Highway 80 or from adjacent uses to the west, south, and east, all of which are on a relatively level viewing plane. While construction activities could affect views temporarily, these effects would be limited in duration and primarily restricted to the temporary facilities site located to the north of the existing structure and away from the highway and most adjacent uses. Project impacts would be less than significant and no mitigation is required.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

No Impact. The project would result in the renovation of an existing facility and would not add any substantial sources of light or glare beyond those already present at the facility. Exterior lighting included in project design would be the minimum amount required for vehicular and operational safety. The project site is located approximately 41 miles southeast of Palomar Observatory and approximately 7.5 miles to the southwest of Mount Laguna Observatory. Two zones have been defined to categorize distance from these observatories. Zone A for each observatory includes a 15-mile radius from the observatory's location; Zone B is all land outside that radius. As such, the project site is located in Zone A for Mount Laguna Observatory and Zone B for Palomar Observatory. The San Diego Light Pollution Code (Ordinance No. 6900; amended by Ordinance No. 7155) includes design restrictions for exterior lighting in Zones A and B. All exterior lighting installed as part of the project would be installed and operated in compliance with these regulations. Additionally, all outdoor lighting would be shielded and directed downward to minimize spillover onto adjacent properties. Therefore, project impacts would be less than significant and no mitigation is required.

3.2 AGRICULTURE AND FOREST RESOURCES

Would the project:

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The proposed project site has already been developed and does not include any land identified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Department of Conservation. The project would not result in the conversion of any of these land types to non-agricultural use; therefore, no impacts would occur and no mitigation is required.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The proposed project would not affect any properties that are zoned for agricultural use or currently under a Williamson Act contract. No impacts would occur and no mitigation is required.

c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact. The proposed project involves renovation of existing facilities and would not contribute to increases in conversion of farmland to non-agricultural use or forest land to non-forest use. The project site is surrounded by a mixture of uses, including commercial and rural residential, and is not adjacent to any land zoned for agricultural use or under a Williamson Act contract. The renovation would maintain the same land use on the property as under existing conditions and would not promote the conversion of any nearby lands from agricultural to non-agricultural uses. No impacts would occur and no mitigation is required.

3.3 AIR QUALITY

Would the project:

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) *Conflict with or obstruct implementation of the applicable air quality plan?*

Less than Significant Impact. The regional air quality plan for San Diego County is the San Diego Air Pollution Control District (SDAPCD)'s Regional Air Quality Strategy (RAQS), which is also the applicable portion of the State Implementation Plan. The RAQS was developed pursuant to California Clean Air Act requirements, and identifies feasible emissions control measures to provide expeditious progress toward attaining the state ozone standard in San Diego County.

Projects that are consistent with the assumptions used in development of the applicable air quality plan are considered to not conflict with or obstruct the attainment of the air quality levels identified in the plan. Assumptions for land use development used in the RAQS are taken from local and regional planning documents. Emission forecasts rely on projections of vehicle miles traveled (VMT) by the Metropolitan Planning Organizations, such as the San Diego Association of Governments, and population, employment, and land use projections made by local jurisdictions during development of the area and general plans.

The use of construction equipment in the RAQS is estimated for the region on an annual basis, and construction-related emissions are estimated as an aggregate in the RAQS. Therefore, the project would not increase the assumptions for off-road equipment use in the RAQS.

While the RAQS acknowledges mobile and area sources, minor changes in the assumptions relative to these sources would not obstruct successful implementation of the strategies for improvement of the San Diego Air Basin's (SDAB) air quality. Since the project is a renovation of an existing facility and structure, traffic and VMT are anticipated to remain the same as current operation. Thus, the project would not conflict with the RAQS.

Because the proposed project would not generate a substantial amount of additional vehicle trips, the proposed project would not result in additional emissions over the current assumptions used to develop the General Plan and Air Quality Management Plan. Since the proposed project

would not result in a substantial increase in criteria pollutant emissions compared to the current assumptions in the RAQS, the project would not conflict with or obstruct implementation of the applicable air quality plan. This impact would be less than significant and no mitigation is required.

b) *Violate any air quality standard or contribute substantially to an existing or projected air quality violation?*

Less than Significant Impact. Construction emissions are described as “short-term” or temporary in duration; however, they have the potential to represent a significant impact with respect to air quality. Construction of the proposed project would result in the temporary generation of ROG, NO_x, CO, SO₂, PM₁₀, and PM_{2.5} emissions, as defined in Footnote 1 of Table 1. ROG, NO_x, CO, and SO₂ emissions are primarily associated with mobile equipment exhaust, including off-road construction equipment and on-road motor vehicles. Fugitive PM dust emissions are primarily associated with site preparation and vary as a function of such parameters as soil silt content, soil moisture, wind speed, acreage of disturbance area, and VMT by construction vehicles on- and off-site.

Construction of the proposed project would be concentrated in two areas: the existing fire station and the training facility. This additional square footage would accommodate four apparatus bays, firefighter sleeping quarters, dining area, recreation space, training facilities, and office space for the County Fire Authority personnel. Construction is anticipated to start in mid-March 2017, with demolition completed by May 2017 and additional construction activities ending in July 2018. The project would be operational by the end of 2018.

The total emissions of criteria pollutants over the entire construction period for the project are presented in Table 1. Emissions for the proposed project would result in maximum daily emissions of approximately 11 pounds of ROG, 20 pounds of NO_x, 16 pounds of CO, <1 pound of SO_x, 2 pounds of PM₁₀, and 1 pound of PM_{2.5}. Additional modeling assumptions and details are provided in Appendix A, Air Quality Technical Study.

**Table 1
Estimated Daily and Annual Construction Emissions**

	ROG	NO _x	CO	SO ₂	PM ₁₀ ¹	PM _{2.5} ¹
Maximum Daily Construction Emissions (lbs/day)	10.66	19.90	16.07	0.03	1.88	1.18
Threshold of Significance (lbs/day)	137	250	550	250	100	55
<i>Significant Impact?</i>	No	No	No	No	No	No

¹ PM_{2.5} and PM₁₀ emissions shown include the sum of particulate matter with aerodynamic diameter 0 to 2.5 microns and particulate matter with aerodynamic diameter 2.5 to 10 microns, respectively.

ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = carbon monoxide; SO₂ = sulfur dioxide; PM₁₀ = suspended particulate matter; PM_{2.5} = fine particulate matter

Source: Estimated by AECOM in 2016

As shown in Table 1, construction-generated emissions of ROG, NO_x, CO, SO₂, PM₁₀, and PM_{2.5} would not exceed applicable daily thresholds established by the County of San Diego. Emissions would also be controlled with standard construction practices enforceable pursuant to San Diego County Code of Regulatory Ordinances Title 9 Construction Codes and Fire Code.

Therefore, construction emissions would not violate an ambient air quality standard or contribute substantially to an existing violation. This impact would be less than significant.

After construction, day-to-day activities associated with the operation of the proposed project would generate emissions from mobile and area sources. Operational emissions may be both direct and indirect emissions, and would be generated by area and mobile sources associated with the project. Area-source emissions would be associated with activities such as maintenance of landscaping and grounds. Natural gas combustion for space and water heating is also a direct area source of emissions. Mobile-source emissions would include vehicle trips by County Fire Authority Personnel and members of the public.

The operational emissions associated with the activities for existing land uses and the proposed project were quantified using CalEEMod. Additional details are available in Appendix A.

Pursuant to the state CEQA Guidelines (Section 15125[e]) this analysis is only required to evaluate the net change in operational emissions from the existing station at the time environmental analysis for the project is commenced. Therefore, as discussed earlier, the analysis does not assume an increase in vehicle trips associated with the proposed project. This approach is consistent with the definition of baseline conditions pursuant to CEQA. Table 2 shows the maximum daily emissions that could occur based on the increased square footage for the proposed project.

Table 2
Summary of Modeled Long-Term Operational Emissions

Emissions Source	ROG (lbs/day)	NO_x (lbs/day)	CO (lbs/day)	SO₂ (lbs/day)	PM₁₀ (lbs/day)	PM_{2.5} (lbs/day)
2018 Annual Emissions	0.56	0.10	0.08	0.0006	0.007	0.007
Threshold of Significance	137	250	550	250	100	55
<i>Significant Impact?</i>	No	No	No	No	No	No

ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = carbon monoxide; SO₂ = sulfur dioxide;

PM₁₀ = suspended particulate matter; PM_{2.5} = fine particulate matter.

Source: Estimated by AECOM in 2016

As shown in Table 2, the total operational emissions from the project would not exceed any of the significance thresholds. Therefore, construction and operation of the project would not violate an ambient air quality standard or contribute substantially to an existing violation. This impact would be less than significant and no mitigation is required.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Less than Significant Impact. A significant impact related to air quality would occur if implementation of the project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.

The cumulative analysis of construction and operational emissions focuses on whether a specific project would result in a cumulatively considerable increase in emissions. By its very nature, air

pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development within the SDAB, and this regional impact is cumulative rather than attributable to any one source. A project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development projects. The thresholds of significance are relevant to whether a project's individual emissions would result in a cumulatively considerable incremental contribution to the existing cumulative air quality conditions. If a project's emissions would be less than those threshold levels, the project would not be expected to result in a considerable incremental contribution to the significant cumulative impact.

Because the proposed project would not exceed any project-level air quality significance thresholds, the proposed project's construction and operational emissions would not be cumulatively considerable. Therefore, impacts related to a cumulatively considerable net increase of criteria pollutants would be less than significant and no mitigation is required.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact. The nearest off-site sensitive receptors are single-family residences located approximately 250 feet to the southwest of the project site. The residential units represent the nearest sensitive receptors with the potential to be impacted by construction and operation of the proposed project.

Carbon Monoxide

The primary mobile-source pollutant of localized concern is CO. Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed, and delay. Transport of CO is limited since it disperses rapidly with distance from the source under normal meteorological conditions. However, under specific meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels related to local sensitive land uses such as residential units, hospitals, schools, and childcare facilities.

CO concentration is a direct function of motor vehicle activity, particularly during peak commute hours, and meteorological conditions. Under specific meteorological conditions, CO concentrations may reach unhealthy levels with respect to local sensitive land uses, such as residential areas, schools, preschools, playgrounds, and hospitals. As a result, air districts typically recommend analysis of CO emissions at a local rather than a regional level.

The proposed project would not cause an increase in traffic volumes and would not result in CO concentrations exceeding the emission limit. Therefore, the CO concentrations resulting from the project would not violate the California Ambient Air Quality Standard for either the 1-hour period (20 parts per million [ppm]) or the 8-hour period (9.0 ppm). This impact would be less than significant.

Construction-Related Health Risks

The greatest potential for toxic air contaminant (TAC) emissions resulting from construction of the proposed project would originate from diesel PM emissions associated with heavy equipment operations. Construction of the proposed project would result in the generation of diesel PM from the use of off-road diesel construction equipment required for demolition, site preparation, and building construction. Most diesel PM emissions associated with material delivery trucks

and construction worker vehicles would occur off-site and would not substantially contribute to TAC emissions in the project area.

The generation of diesel PM emissions from construction projects typically occurs in a single area for a short period of time. The dose of TACs to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure a person has with the substance. Dose is positively correlated with time, meaning that a longer exposure period to a fixed amount of emissions results in a higher exposure level and higher health risks for the maximally exposed individual.

According to the Office of Environmental Health Hazard Assessment (OEHHA), the health risks associated with exposure of residential receptors to TAC emissions should be based on a 30-year exposure period (OEHHA 2015). However, health risk assessments should be limited to the period/duration of activities associated with the emissions activity. As discussed above, project construction activities would occur for a total of 1 year. Therefore, the total exposure time would be approximately 3 percent of the total exposure time for a typical health risk assessment.

Furthermore, the dose (i.e., concentration levels) to which nearby receptors would be exposed would be limited because of the distance from the project site (approximately 250 to 1,700 feet from the nearest sensitive receptor to the site). The California Air Resources Board (ARB) has published studies that show a 70 percent decrease in PM emissions at 500 feet from freeways and high-traffic roads, which are continuous emission sources (ARB 2005). Emissions would be dispersed around the project site; thus, TAC emissions from project construction would be less concentrated than those from a typical roadway and would be less likely to substantially expose receptors. SDAPCD rules and regulations would also reduce PM₁₀ emissions generated by construction of the proposed project. Therefore, it is anticipated that PM concentrations would decrease substantially before affecting the nearest sensitive receptor.

Thus, considering the distance to the nearest sensitive receptor, intermittent emission source, and relatively low overall exposure period, construction emissions would not generate pollutant concentrations that expose sensitive receptors to substantial pollutant concentrations. This impact would be less than significant. This impact would be less than significant and no mitigation is required.

e) Create objectionable odors affecting a substantial number of people?

Less than Significant Impact. The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies.

Potential sources that may emit odors during construction of the proposed project would include exhaust from diesel construction equipment. The project would utilize typical construction techniques, and the odors from off-road equipment and on-road vehicles would be typical of most construction sites and temporary in nature.

Operation of the project would not add any new odor sources, and any odors generated would be similar to existing odors associated with land uses in the area. The land uses associated with the

project would be commercial; this type of land use is not a typically a large generator of odor emissions. As a result, the project’s construction and operational activities would not create objectionable odors affecting a substantial number of people. The impact would be less than significant and no mitigation is required.

3.4 BIOLOGICAL RESOURCES

Would the project:

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?</i>				

Potentially Significant Unless Mitigated. A Biological Survey and Informal Jurisdictional Delineation Survey report was prepared by AECOM in November 2015; refer to Appendix B. The results of the report are summarized below.

Special-Status Plant Species

The biological survey did not detect any special-status plant species. Vegetation in the project area is predominantly a mix of native and nonnative species that are characteristic of disturbed soils, as described in Table 3 below and in Figure 4, Vegetation Survey Results. The majority of the site is categorized as urban/developed, which includes paved parking areas, ornamental plantings, and buildings. Other habitat types within the project area include disturbed habitat composed predominantly of weedy non-native species, as well as a small sliver of non-vegetated channel, where erosion and deposition within the active channel are inhibiting the establishment of vegetation.

Table 3
Vegetation Communities and Cover Types
within the Pine Valley Fire Station Survey Area

Community	Acreage in Project Area	Acreage in 500-Foot Buffer
Disturbed Habitat	0.22	11.27
Urban/Developed	3.02	23.29
Big Sagebrush Scrub	-	2.28
Southern Arroyo Willow Riparian Forest	-	0.14
Non-Vegetated Channel	0.03	0.13
Total	3.27	37.11

Source: AECOM 2015; Appendix B

Special-Status Animal Species

The biological survey did not identify any special-status wildlife; however, it did identify potential habitat for the arroyo toad (*Anaxyrus californicus*), a federally endangered species, within the boundaries of the project site. The arroyo toad has a moderate potential to occur on-site due to the designated critical habitat overlapping the eastern edge of the project site, as well as known occurrences of arroyo toads at Pine Valley Creek, approximately 1 mile north of the site. The on-site drainage could be used by arroyo toads during dispersal and surrounding upland habitat could be used for aestivation. Breeding habitat is not present on the project site. The drainage overall has a low suitability for arroyo toad due to its smaller size as a first order drainage (arroyo toads prefer third to sixth order drainages) and steeply cut banks.

In addition to the biological survey, a desktop review of literature and biological resource databases was conducted. This review of special-status species records revealed no records of special-status plant or animal species within the project site boundary. A full description of previously recorded special-status species within 1 mile of the project site is included in the Biological Survey Letter Report (Appendix B).

Direct/Indirect Impacts to Nesting Birds

The project area contains mature trees, which may be used for nesting by birds protected under the Migratory Bird Treaty Act (MBTA). A number of bird species were observed on-site, including the Northern Harrier (*Circus cyaneus*), which is listed as a Species of Special Concern by the CDFW, but nests were not observed during the biological surveys. In general, on-site nesting, perching, roosting, and foraging opportunities for these species are limited due to the highly developed nature of the site and existing anthropogenic disturbances associated with

surrounding land uses. Nevertheless, removal of the on-site trees during the nesting and roosting season (February 1 through August 31), or noise resulting from construction activities, may result in significant direct and/or indirect impacts to any of these species observed nesting or roosting within these trees. Therefore, Mitigation Measure BIO-1 is proposed to reduce such potential impacts to less than significant.

Noise-Related Impacts

Project grading and construction activities may result in significant indirect noise impacts to any special-status avian species, or common birds protected by the MBTA and California Fish and Game Code, observed nesting within the on-site trees and any off-site trees within 300 to 500 feet of the project construction limits (depending on the species). Implementation of Mitigation Measure (MM) BIO-1 would reduce such impacts to less than significant.

MM BIO-1 Within 3 days prior to tree removal during the breeding season (February 1 through September 15), a focused pre-construction survey for raptor and passerine nests shall be conducted by a qualified biologist to identify active nests within the trees to be removed or those within 300 to 500 feet (depending on the bird species) of the project construction limits. If nesting raptors or passerines are found during the focused survey, no tree removal or grading shall occur within an appropriate distance (i.e., a minimum 300-foot non-disturbance buffer) from an active passerine nest, increasing to 500 feet from an active raptor nest (as determined by the biologist) unless CDFW approves an appropriate buffer reduction request by a qualified avian expert or until the young have fledged and are no longer returning to the nest area (also to be determined by the biologist). The biologist shall supervise the placement of a temporary fence to delineate the limits of the non-disturbance buffer. If impacts to nest trees are unavoidable, the trees shall be removed outside the breeding timeframe unless the biologist determines that the young have fledged and are no longer returning to the nest area.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?

Potentially Significant Unless Mitigated. Refer also to Response 3.4(a), above. Three vegetation communities occur within the project site: Disturbed Habitat, Urban/Developed, and Non-Vegetated Channel, none of which are considered sensitive habitat by the County of San Diego. No riparian habitat or other sensitive natural communities identified in local or regional plans, policies, regulations, or by CDFW occur on-site. Therefore, the proposed project would not impact such habitat, and no mitigation is required.

The drainage along the eastern boundary of the site is an unnamed tributary to Pine Valley Creek and contains non-wetland waters. The drainage is potentially under the jurisdiction of the U.S. Army Corps of Engineers (USACE), San Diego Regional Water Quality Control Board (RWQCB), and CDFW; however, no adjacent wetlands or riparian habitats are present along the stream channel where it crosses the project site. This drainage does not contain a predominance of wetland vegetation, or indicators of wetlands hydrology or hydric soils, and is characterized as a non-wetland waters of the U.S. and waters of the State; however, the project is not subject to the County's Resource Protection Ordinance (RPO) (County of San Diego 2007) because the

project does not require a discretionary permit as outlined in RPO Section 86.603, and because the project is considered an essential public facility.

The proposed project is not subject to County RPO wetland buffer requirements, nor is it subject to the permitting requirements of USACE and CDFW (since the drainage feature would be avoided). Nevertheless, a minimum 5-foot-wide buffer would be maintained between the easterly limits of project work and the top of the bank along the adjacent drainage during project construction, to prevent any inadvertent construction-related impacts to the integrity of the drainage feature (such as caving in of the earthen channel walls from heavy equipment operating too close to the top of bank); refer to Mitigation Measure BIO-2, which would reduce potential impacts to less than significant.

MM BIO-2 The construction contractor shall install stakes/flagging at a distance of 5 feet from the top of the west bank of the drainage adjacent to the project's easterly limits of work. This 5-foot-wide buffer shall be maintained during all construction activity and no permanent improvements (including gutters, berms, storm drains, or other surface improvements) shall be constructed within the buffer to ensure that all flows drain away from the top of bank. Activity within the 5-foot buffer shall be limited to the use of lighter mechanized construction equipment (H-20 loading or less), and hand-operated tools and equipment, to prevent potential damage such as caving in of the sides of the earthen channel.

c) *Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

No Impact. As stated in Response 3.4(b) above, the drainage along the eastern boundary of the site is an unnamed tributary to Pine Valley Creek and contains non-wetland waters. The drainage is potentially under the jurisdiction of USACE, RWQCB, and CDFW; however, there are no adjacent wetlands or riparian habitats present along the stream channel where it crosses the project site. Project construction would avoid all direct and indirect impacts to the drainage. Therefore, the project would not result in impacts to wetland habitat through direct removal, filling, hydrological interruption, or other means. No significant impacts on federally protected wetlands would occur, and no mitigation is required.

d) *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

Potentially Significant Unless Mitigated. A wildlife corridor is a specific route that is used for migrations of species. A corridor is different from a linkage because it represents a smaller or narrower avenue for movement, whereas a linkage is an area of land which supports or contributes to the long-term movement of wildlife and genetic exchange by providing live-in habitat that connects to other habitat areas. The County of San Diego South County Subarea Plan of the Multiple Species Conservation Program (MSCP) defines regional linkages/corridors as land that "contains topography which serves to allow for the movement of all sizes of wildlife and is used by wildlife, including large animals on a regional scale; contains adequate vegetation cover providing visual continuity so as to encourage the use of the corridor by wildlife; or, has been identified as the primary linkage/corridor between the northern and southern regional

populations of the California gnatcatcher in the population viability analysis for the California gnatcatcher.”

Although the adjacent drainage could promote the movement of wildlife, including large mammals, the relatively developed setting of the project site and adjacent areas preclude the draining from serving the functions described above. Therefore, the site likely does not function as a wildlife corridor or linkage, and the proposed project would not interfere substantially with the movement of native wildlife species or with established native resident or migratory corridors, or impede the use of native wildlife nursery sites. Although construction activities such as noise and/or movement may influence wildlife populations to temporarily avoid the project area, such impacts would be temporary and would cease upon completion of construction. Therefore, project impacts on movement of native resident or migratory wildlife species would be less than significant.

Project-related construction could result in disruption of resident or migratory avian species that forage and rest in the area; however, this disruption would be temporary and would cease upon completion. The project could result in significant direct and/or indirect (construction-related noise) impacts to special-status avian species and/or common birds protected by the MBTA and California Fish and Game Code that may be nesting within trees within or adjacent to the construction area. As described above, these construction-related impacts would be reduced to less than significant through implementation of Mitigation Measure BIO-2.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The project would not conflict with any local policies or ordinances protecting biological resources. There is no sensitive habitat present within the project site, and mitigation measures are included in the project to reduce potential impacts to biological resources to below a level of significance.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. The proposed project is not located within any Habitat Conservation Plan area or in a Natural Community Conservation Plan area identified in the County General Plan Update. The project site is within the planning boundaries for the draft South County Subarea Plan of the MSCP, which is still in the planning phase. The project is located within the “RMS 3” Category of the draft Focused Conservation Area, which identifies “Land Managed as Open Space.” The application of this category is reflective of the current status of the property rather than planned conservation of the site. The drainage area is identified as having potentially high biological value and would not be impacted by the project. In addition, construction on the site would not interrupt an existing or planned wildlife corridor.

The proposed renovation is not subject to any of the permit types identified in the Interim Review Process described in the East County MSCP Planning Agreement (County of San Diego 2008a). Additionally, the environmental document will be distributed to the wildlife agencies for review and comment during the public review period. Therefore, no conflicts with any such plans would occur with the project, and the project would not conflict with the provisions of a

local, regional, or state habitat conservation plan. A significant impact would not result, and mitigation is not required.

3.5 CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

a) *Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?*

Potentially Significant Unless Mitigated. The project site is located on previously developed land and is surrounded by developed land uses on three sides. Project construction would not affect the undeveloped land to the northeast of the project. No known historical resources have been identified on-site, and project construction would require only surficial groundwork. However, any construction-related ground disturbance presents a risk of impacts to buried historic resources. Implementation of Mitigation Measure CR-1, below, would reduce potential impacts to historical resources to a less than significant level.

MM CR-1 To avoid potential impacts to known or unknown (i.e., buried) historic or cultural resources, mitigation in the form of monitoring during construction shall be required. Monitoring shall be performed by a qualified archaeologist and/or Native American monitor. In the event that previously unidentified potentially significant cultural resources are discovered, the monitor(s) shall have the authority to divert or temporarily halt ground disturbance operation in the area of discovery until such time that the sensitivity of the resource can be determined. Monitoring shall also be utilized to address impacts on paleontological resources, as identified in MM CR-2, below.

The County shall provide evidence that a County-certified archaeologist and/or Native American monitor has been contracted to implement a Grading Monitoring Program. The consulting archaeologist shall contract with a Native American monitor to be involved with the Grading Monitoring Program. A letter of proof indicating that a Native American Monitor has been contracted shall be prepared by the consulting archaeologist and submitted to the Director of the Department of General Services. The County shall complete and submit a final report that documents the results, analysis, and conclusions of all phases of the Grading

Monitoring Program, to the satisfaction of the Director of Department of General Services.

A Monitoring Discovery and Historic Properties Treatment Plan shall be prepared and implemented to the satisfaction of the County of San Diego Director of Department of General Services. The Monitoring Discovery and Historic Properties Treatment Plan shall apply to the treatment of cultural or historic resources once they are discovered. For cultural resources determined to be of significance, a Data Recovery Program to mitigate project impacts shall be prepared by the consulting archaeologist and approved by the County, then carried out using professional archaeological methods.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Potentially Significant Unless Mitigated. As described in Response 3.5(a) above, the project site is located on previously developed land and is surrounded by developed land uses on three sides. No known archaeological resources have been identified on-site, although archaeological resources have been identified within the Pine Valley area. The project proposes only limited, surficial grading on the project site; however, any grading could result in the exposure of previously undiscovered archaeological resources. Implementation of MM CR-1 would reduce project impacts to archaeological resources to less than significant.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Potentially Significant Unless Mitigated. No unique geological features or paleontological resources have been identified on or adjacent to the project site. Although construction-related ground disturbance would be limited to surficial grading, there is a possibility that undiscovered paleontological resources could be uncovered in the underlying geologic formations. Implementation of MM CR-2 would reduce impacts to paleontological resources to less than significant.

MM CR-2 MM CR-1 shall be implemented by utilizing a qualified paleontologist to reduce potential impacts on paleontological resources to less than significant.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Potentially Significant Unless Mitigated. As described in Responses 3.5(a) through 3.5(c), ground disturbance associated with project implementation would be minimal; however, to ensure that human remains, if encountered, are properly handled, mitigation is proposed to require that qualified monitors (qualified archaeologist, Native American, and paleontological monitors) be present on-site during all ground-disturbing activities. Implementation of MM CR-3 would reduce potential impacts to human remains to less than significant.

MM CR-3 Monitoring shall be performed by a qualified archaeologist and Native American monitors during all project-related ground-disturbing activities. If human remains are discovered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition, pursuant to Public Resources Code Section 5097.98. The

County Coroner must be notified immediately if any human remains are found. If such remains are determined to be prehistoric, the Coroner would be required to notify the Native American Heritage Commission (NAHC), which would then determine significance and notify a Most Likely Descendant (MLD). With permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery and shall complete the inspection within 24 hours of notification by the NAHC. The MLD would have the opportunity to make recommendations to the NAHC on the disposition of the remains.

3.6 GEOLOGY AND SOILS

Would the project:

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:*

i) *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on*

other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less than Significant Impact. The proposed project site is located within a seismically active area, as is the majority of land in California. Although there are a number of Alquist-Priolo Earthquake Fault Zones within southeastern San Diego County, none pass within 1/8 of a mile of the project site. Project activities would comply with all seismic requirements of the California Building Code (CBC) and would incorporate recommended design measures, as applicable, to reduce potential damage from a seismic event. Compliance with these standards will reduce hazards associated with fault-related ground shaking, and impacts related to rupture of an Alquist-Priolo Earthquake Fault Zone are considered less than significant. No mitigation is required.

ii) Strong seismic ground shaking?

Less than Significant Impact. As described in Response 3.6(a), the project is not located within an Alquist-Priolo Earthquake Fault Zone. The region has experienced seismic activity in the past, and potential hazards associated with a seismic event include ground rupture, liquefaction, seismic compaction/settlement, and/or ground shaking. A major earthquake at any nearby faults could result in moderate to severe ground shaking at the site. Damage to the renovated facility could be expected as a result of this ground shaking, but hazards would be limited by compliance with seismic requirements of the CBC and recommended engineering design measures. Impacts would be less than significant and no mitigation is required.

iii) Seismic-related ground failure, including liquefaction?

Less than Significant Impact. Liquefaction, which occurs when unconsolidated, water-laden soils are shaken and lose cohesion, is most prevalent in areas of recently deposited silts or sands and in areas with high groundwater levels. The project site is relatively flat and poses low risk of liquefaction. Additionally, the proposed project will comply with all applicable CBC requirements and recommended engineering design. Therefore, the renovations included in the proposed project would not result in an increased risk of seismic-related ground failure or liquefaction. Impacts would be less than significant and no mitigation is required.

iv) Landslides?

No Impact. The proposed project area is generally flat, as are the areas adjacent to the project site are similarly flat, and the area has little to no potential for landslides to occur. No significant impacts have been identified and no mitigation is required.

b) Result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact. Activities associated with project construction could temporarily disturb soils, either on the site of the restoration itself or in the nearby temporary facility area. However, any soil disturbed would be saturated with water and would therefore not pose a significant erosion concern. Additionally, standard erosion control measures would be implemented during construction. Implementation of these measures would reduce any potential impacts to less than significant, and no mitigation measures are required.

c) *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

Less than Significant Impact. The proposed project site is underlain by Quaternary Alluvium. The proposed project would comply with CBC requirements and applicable engineering design recommendations, and this compliance would ensure on-site soils can support the proposed renovations. Therefore, the development would not be subject to potential for on-site or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse. Therefore, impacts related to unstable soils are less than significant, and no mitigation is required.

d) *Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?*

Less than Significant Impact. Soils on the site of the proposed project are generally composed of Mottsville loamy coarse sand. All project-related construction would comply with CBC seismic requirements and applicable engineering design recommendations. Compliance with these standards would limit hazards related to expansive soils to a less than significant level, and no mitigation is required.

e) *Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?*

No Impact. The existing facility and several nearby businesses have a preexisting sewer system that removes and treats wastewater off-site. Septic tanks or alternative wastewater disposal systems are not present on the site. No impact would occur and no mitigation is required.

3.7 GREENHOUSE GAS EMISSIONS

Would the project:

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

Less than Significant Impact. Construction-related greenhouse gas (GHG) exhaust emissions would be generated by sources such as heavy-duty off-road equipment, trucks hauling materials to and from the site, and construction worker commutes. Given that exhaust emissions from the construction equipment fleet are expected to decrease over time as stricter standards take effect, construction emissions were estimated using the earliest calendar year when construction would begin to generate conservative estimates. If construction occurs in later years, advancements in engine technology, retrofits, and turnover in the equipment fleet are anticipated to result in lower levels of emissions.

California Emissions Estimator Model (CalEEMod) was used to model construction emissions associated with the following construction phases: demolition, site preparation, asphalt paving, building construction, and architectural coatings. The CalEEMod input data, included in this report as Appendix A to the Greenhouse Gas Analysis for the project (Appendix C), list the assumed equipment to be used for project construction, the duration of each phase, and changes to default settings that were made for project-specific conditions.

Construction of the proposed project would be concentrated in two areas: the existing fire station and the Training Facility. Construction is anticipated to start in mid-March 2017, with demolition completed by May 2017 and additional construction activities ending in July 2018. The project is anticipated to be operational by the end of 2018.

The total emissions over the entire construction period for the project were estimated at approximately 227 metric tons (MT) CO₂e. When this total is amortized over the 20-year life of the project, annual construction emissions would be approximately 11 MT CO₂e per year. Operational GHG emissions were estimated for the proposed project in 2018. As shown in Table 4, the annual emissions generated by the proposed project, including amortized construction emissions, were estimated at 148 MT CO₂e per year.

Table 4
Estimated Annual GHG Emissions

Emissions Source	Proposed Project (MT CO ₂ e)
Area	4
Energy	104
Mobile	N/A
Waste	7
Water	26
Operational Emissions	137
Amortized Construction Emissions	11
Total	148
Significance Threshold	900
Exceeds Threshold	NO

GHG = greenhouse gases; MT CO₂e = metric tons of carbon dioxide equivalent; N/A = not applicable
 Note: Totals may not add due to rounding.
 Additional details available in Appendix C.
 Source: Modeled by AECOM in 2016

As shown in Table 4, the operational emissions for the project were estimated at 148 MT CO₂e per year. This analysis conservatively assumes that all energy consumption, water use, and waste generation would increase as a result of the increase in project square footage. This is considered conservative, since the project site includes an existing land use that would also generate emissions from these sources. Since the total GHG emissions for the project would not exceed 900 MT CO₂e per year, no additional analysis is required. Therefore, the project would not generate GHG emissions that may have a significant impact on the environment. This impact would be less than significant and no mitigation is required.

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

Less than Significant Impact. ARB’s First Update to the Climate Change Scoping Plan: Building on the Framework (Scoping Plan Update) includes updates to measures and strategies established to meet California’s goal of reducing emissions to 1990 levels by 2020 and also reiterates the state’s role in the long-term goal established in Executive Order S-3-05, which is to reduce GHG emissions to 80 percent below 1990 levels by 2050 (ARB 2014a). The Scoping Plan Update confirms that the state is on track to meet the 2020 emissions reduction target, but will need to maintain and build upon its existing programs, scale up deployment of clean technologies, and provide more low-carbon options to accelerate GHG emission reductions, especially after 2020, in order to meet the 2050 target. However, the plan does not recommend additional measures for meeting specific GHG emissions limits beyond 2020. In general, the measures described in the plan are designed to meet emissions goals in 2020 and have not yet been adjusted to meet emission reduction targets after 2020.

The Scoping Plan did not directly create any regulatory requirements for construction of the proposed project. However, measures included in the Scoping Plan would indirectly address GHG emissions levels associated with construction activities, including the phasing-in of cleaner technology for diesel engine fleets (including construction equipment) and the development of a low-carbon fuel standard. The Scoping Plan also includes measures to address light-duty vehicle GHG standards, energy efficiency, green building strategy, recycling and waste, and water efficiency. The proposed project would comply with any mandate or standards set forth by the Scoping Plan update.

SANDAG plans are developed based on land use, population, and commercial/industrial growth projections from local jurisdictions in the region, including the County of San Diego. The County of San Diego General Plan was approved in 2011 and includes strategies that focus growth into mixed-use activity centers that are pedestrian friendly and linked to an improved regional transit system. Projects consistent with the County of San Diego’s General Plan would be considered to comply with the planning efforts in the SANDAG Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), which was designed to achieve the region’s fair-share GHG emission reductions pursuant to Assembly Bill (AB) 32. Therefore, projects consistent with the County of San Diego’s General Plan would also be consistent with the GHG emission reduction goals of the AB 32 Scoping Plan update. Since the proposed project is a redevelopment of existing land uses, vehicle trips and other project activities would be included in the assumptions for the General Plan, RTP/SCS, and Scoping Plan update.

Neither the County nor any other agency with jurisdiction over this project has adopted climate change or GHG reduction measures with which the project would conflict. Therefore, the proposed project would not conflict with any applicable plan, policy, or regulation for the purpose of reducing GHG emissions. This impact would be less than significant and no mitigation is required.

3.8 HAZARDS AND HAZARDOUS MATERIALS

Would the project:

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

Less than Significant Impact. Implementation and operation of the proposed project would not include the use of substantial quantities of any hazardous materials such as chemical agents, solvents, or paints. While an incremental amount of some of these materials could be used during the course of project construction, any hazardous waste generated by the proposed project would be disposed of in accordance with applicable federal, state, and local regulations. Impacts would be less than significant and no mitigation is required.

As part of the project, an aboveground storage tank (AST) with a capacity of 1,000 gallons would be installed in the northern portion of the property, near the new storage facility. Diesel fuel would be stored in the AST, which would be used to refuel the diesel fire trucks at the facility. As long as installation, operation, and future maintenance of this AST are done in accordance with applicable federal, state, and local regulations, impacts resulting from the presence and future use of this AST would be less than significant and no mitigation is required.

b) *Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

Less than Significant Impact. As described above, neither the construction phase nor the operation of the proposed project would involve the routine use of substantial amounts of hazardous materials. Up to 1,000 gallons of diesel fuel would be stored in an AST on the northern portion of the site, and refueling operations are planned in this area. The AST would be installed in accordance with applicable federal, state, and local regulations that would include secondary containment around the structure. Failure of these mechanisms to control any future accidental release is highly unlikely. However, an uncontrolled release not contained by the secondary containment unit would require remediation and additional environmental analysis.

The project would not involve the on-site storage of substantial amounts of other hazardous materials, and the risk associated with an accidental release is low due to the small volume and low concentration of any materials that could be present. Additionally, during construction of the proposed project, standard construction controls and safety procedures would be implemented in order to minimize the risk of accidental release. Therefore, impacts would be less than significant and no mitigation is required.

c) *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*

Less than Significant Impact. Pine Valley Academy is the nearest school to the project site, located approximately 0.05 mile to the southeast. As described under Response 3.8(a), construction of the proposed project would not involve the handling of any substantial amount of hazardous materials or waste. Typical operations of a fire station do not include the use of a substantial amount of these materials or the generation of hazardous emissions. Therefore, impacts would be less than significant and no mitigation is required.

d) *Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

Less than Significant Impact. AECOM conducted a records search of the site in the California Environmental Protection Agency's State Water Resources Control Board online GeoTracker® database, as well as the California Department of Toxic Substance Control (DTSC) online EnviroStor database for California Cleanup Sites involving the DTSC. The GeoTracker® database consists of records related to contaminated property investigations involving leaking underground storage tanks (LUSTs); spills, leaks, investigations, and cleanups (SLIC); land disposal; Department of Defense (non-UST), wells; and registered underground storage tank (UST) sites throughout California. The EnviroStor database consists of federal National Priority

List sites, state response sites, voluntary cleanup sites, and school cleanup sites. The site was not listed in either the GeoTracker or EnviroStor databases.

A LUST site was reported in the GeoTracker database at 28880 Old Highway 80 (APN 410-120-24-00), adjacent to the eastern boundary of the project area. The LUST is associated with a former Texaco retail gasoline station located at this address (Old Highway 80 Garage). Five USTs (four gasoline and one waste oil) were removed from this location in 1999, at which time a release of gasoline was identified in the subsurface. It was determined that the extent of gasoline impacts was limited to the former UST grave, and contaminated soil was excavated and disposed of off-site. Shallow and deep groundwater monitoring wells were installed, and one municipal groundwater production well was taken out of service as a precautionary measure, even though no impacts were detected in this production well. Groundwater monitoring was conducted periodically until December 2010, when it was determined that residual groundwater impacts were minimal and the remaining contaminants would degrade by natural attenuation. The case was closed with concurrence from the San Diego Department of Environmental Health on July 23, 2013. The groundwater monitoring wells have since been abandoned, and none are currently present on this site.

Ground disturbance in the vicinity of the former LUST and groundwater monitoring well network is planned as part of the proposed project; however, work associated with these activities is likely to be shallow (less than approximately 3 feet below ground surface [bgs]). Contamination associated with the USTs was found in soils greater than 10 feet bgs. Further, the source area (impacted soil) has been removed. Therefore, the likelihood of exposure to impacted soils in this area is minimal. During construction of the proposed project, however, standard construction controls and safety procedures should be implemented to minimize exposure to impacted materials, should they be encountered. Impacts would be less than significant and no mitigation is required.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No impact. The nearest airport to the proposed project site is Gillespie Field, which is located approximately 26 miles to the west in the City of El Cajon. The site is outside the area covered by the airport land use plan. Construction activities would not result in the installation of any project feature that would have the potential to result in a safety hazard to those residing or working in the project area. Operations of the renovated fire station would provide additional fire response and would not interfere with airport operations. No impact would occur and no mitigation is required.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No impact. The nearest private air strip to the project is On the Rocks Airport, located approximately 12 miles southwest of the proposed project. As described in Response 3.8(e) above, no hazards would occur for those living and working in the area. No impact would occur and no mitigation is required.

g) *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

No impact. Implementation of the proposed project would result in the enhancement of an existing fire station and training facility, and neither the construction nor the operation of the renovated facility would interfere with emergency response. During construction, fire response would be operational from the temporary facilities located on the training site, and the station’s ability to respond to emergencies would not be reduced. Once construction is complete and the renovated facility is operational, the facility would enhance emergency response in the area; therefore, no impacts would occur and no mitigation is required.

h) *Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?*

Less than Significant Impact. As described under Response 3.8(g), the proposed project would enhance the ability of the Pine Valley Fire District to respond to emergencies, including wildland fires. The project site is located within a portion of the county with high risk of wildland fires; however, renovation of the existing fire station would not increase that risk. Furthermore, the project would not involve the addition of a substantial number of new employees or residents to the area, and so would not result in increased potential for exposure of people to wildland fires. Renovations under the project would be implemented, and the facility maintained, in compliance with County requirements intended to reduce the risk of wildfire damage, such as brush clearing and the use of fire-resistant building materials. Impacts would be less than significant and no mitigation is required.

3.9 HYDROLOGY AND WATER QUALITY

Would the project:

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) *Violate any water quality standards or waste discharge requirements?*

Less than Significant Impact. As described in the Draft Stormwater Quality Management Plan prepared for this project (Appendix D), the proposed project would comply with the State General Construction Storm Water Permit, implemented by the RWQCB under Order No. 99-08, and would incorporate best management practices (BMPs) both during and after construction.

While activities such as soil disturbance, paving, and on-site stockpiling of materials and construction equipment could occur during project construction, typical BMPs relevant to project construction, such as silt fencing and protection of storm drain inlets, would be implemented as needed. After project construction is completed, bioretention basins would be implemented to filter ongoing runoff. The incorporation of these BMPs would result in a less than significant impact, and no mitigation is required.

b) *Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?*

Less than Significant Impact. The proposed project site would continue to receive its water from the Pine Valley Water Company, which draws its water supply from groundwater via a series of wells. Because the operational capacity of the fire station would increase slightly following implementation of the proposed project, there could be an incremental increase in demand on groundwater supplies following construction. However, due to the limited number of employees and the operational characteristics of the fire station, the project would not result in a depletion of groundwater supplies or a reduction in recharge to an extent that would prevent it from meeting the water demand of existing and proposed land uses.

The proposed project would not result in the construction of large impervious surface areas that would reduce groundwater infiltration; rather, implementation of the proposed bioretention basins would provide for groundwater recharge during small storm events. Impacts would be less than significant and no mitigation is required.

c) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?*

Less than Significant Impact. As described in the Appendix D, the Stormwater Quality Management Plan (SWQMP), the proposed project would include minimal grading and would not substantially alter the existing drainage pattern on-site. Post-construction, runoff from the project site would continue to sheet flow toward an existing drainage along the site's northeast boundary. The creation of on-site bioretention basins would reduce siltation and provide flow control to minimize erosion, both on- and off-site. Impacts would be less than significant and no mitigation is required.

d) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?*

Less than Significant Impact. See Response 3.9(c). The proposed project would include minimal grading and would not substantially alter the existing drainage pattern on-site, or the amount of impervious and pervious cover. The site is currently developed and the proposed project would replace existing facilities. These limited changes would not have an effect on the amount of runoff from the project site.

Runoff would surface flow to the bioretention basins dispersed across the site, which provide both attenuation and water quality benefits. The bioretention basins would be designed to accommodate flows from storms below the 10-year storm level. The larger storms would bypass the bioretention basins and be conveyed directly to the drainage via an overflow structure. The overflow structure may consist of a weir, allowing the overflow to surface flow to the drainage, or an underground storm drain system that would outlet directly to the existing drainage. Regardless of the storm intensity, however, implementation of these BMPs would prevent the project from substantially increasing the rate or amount of surface runoff in a manner that would result in flooding on- or off-site. Impacts would be less than significant and no mitigation is required.

e) *Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?*

Less than Significant Impact. See Responses 3.9(c) and 3.9(d). BMPs would be implemented during and after project construction to ensure that runoff from the site does not substantially increase compared to existing conditions and that stormwater is properly treated on-site. Operation of the expanded fire station would not result in an increase in runoff water that would exceed the capacity of existing or planned stormwater systems or provide substantial additional sources of polluted runoff. Impacts would be less than significant and no mitigation is required.

f) *Otherwise substantially degrade water quality?*

Less than Significant Impact. Refer to Responses 3.9(a) through 3.9(e) above. Construction and operation of the proposed project have the potential to impact water quality. However, BMPs implemented both during and after construction would ensure that impacts to water quality are less than significant. The project would not influence groundwater in any substantial way, and project design would include measures to control erosion and sedimentation. Impacts would be less than significant and no mitigation is required.

g) *Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?*

No Impact. Although the proposed project includes bedrooms for temporary use by employees, it does not include the construction of permanent housing. No impacts related to this issue would occur and no mitigation is required.

h) *Place within a 100-year flood hazard area structures which would impede or redirect flood flows?*

Less than Significant Impact. The project could place two structures within the 100-year floodplain: a freestanding hose drying tower and a fuel tank. These small freestanding structures would not impede or redirect flood flows in the event of a 100-year storm event. Impacts would be less than significant and no mitigation is required.

i) *Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?*

Less than Significant Impact. The northeast corner of the project site is within a floodway; however, no structures would be located in this area. Additionally, floodplains and floodways in the project vicinity do not involve levees or dams. Implementation of the proposed project would not result in changes to the existing use of the site in ways that would expose additional people or structures to a significant risk of loss, injury, or death from flooding. Impacts would be less than significant and no mitigation is required.

j) *Inundation by seiche, tsunami, or mudflow.*

No Impact. The project site is not located in the vicinity of a water body large enough to present a risk of inundation by seiche or tsunami. The project vicinity is generally flat and does not include slopes that would be subject to mudflow under rain event or seismic shaking conditions. No impacts would occur and no mitigation is required.

3.10 LAND USE AND PLANNING

Would the project:

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) Physically divide an established community?

No Impact. The proposed project consists of the renovation of an existing structure and the installation of temporary fire response facilities on a nearby developed parcel. No change in land use on adjoining properties would result from implementation of the proposed project, and no new permanent structures are proposed. Additionally, the proposed project would not disrupt the community by displacing or affecting any existing housing in the area. Therefore, implementation of the proposed project would not result in the division of an established community. No impacts would occur and no mitigation is required.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. The project is not under the purview of a Specific Plan or Local Coastal Program. The existing General Plan land use designations and zoning for the site would not be modified as a result of the renovations included in the proposed project, nor would land use or operation on the site change from existing conditions. There would be no impact related to land use plans, policies, or regulations, and no mitigation is required.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. The proposed project site is not located within a Habitat Conservation Plan area, or in a Natural Community Conservation Plan area identified in the County General Plan Update. The project site is within the planning boundaries for the draft East County Subarea Plan of the San Diego County MSCP, which is still under development.

3.11 MINERAL RESOURCES

Would the project:

- a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?
- b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

No Impact. The proposed project site is not currently being utilized for any type of mineral extraction and does not contain any known mineral resources that would be of value to the region or the state. The project area has not been delineated as a locally important mineral resource recovery site on a local general plan, specific plan, or other land use plan. No impacts were identified, and no mitigation is required.

3.12 NOISE

Would the project result in:

- a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?
- c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?
- d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?
- e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?
- f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less than Significant Impact. Project construction activities and equipment would generate noise from site demolition; site grading, excavating, and trenching; building construction; and site repaving. The operation of heavy construction equipment would include, but not be limited to, heavy-duty trucks, backhoes, front-end loaders, excavators, and paving equipment, which generate maximum noise levels of 80 to 85 dBA L_{max} (FTA 2006). Impact equipment such as pavement breakers and industrial/concrete saws, if required, generates 85 to 95 dBA L_{max} (FTA 2006). However, project construction noise levels averaged over time (e.g., typically 1 hour) would be lower than louder short-term, instantaneous, peak noise events due to construction equipment repositioning, or stationary and idling during workers' breaks and other delays, which reduce the equipment's maximum load and duration of operation. In addition, construction activity would be phased. Project construction noise levels are conservatively estimated at approximately 75 dBA L_{eq} at 50 feet from several pieces of equipment operating simultaneously.

Section 36.409 of the County noise ordinance limits the sound level of construction equipment, not to exceed an average sound level of 75 dB for an 8-hour period, between 7 a.m. and 7 p.m., when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is being received (County of San Diego 2008b). There are no noise-sensitive receptors (e.g., residences, educational facilities, or hospitals) located on or adjacent to the project site. There are commercial properties located adjacent to the project site (Mountain Empire Veterinary Clinic approximately 10 feet to the west; Major's Diner approximately 40 feet to the southeast; Pine Valley Post Office approximately 45 feet to the north), and other commercial properties located approximately 130 feet to the southwest across Old Highway 80. The closest noise-sensitive land uses in proximity to the project site are single-family residences approximately 200 feet to the southwest across Old Highway 80, as well as Pine Valley Academy located approximately 300 feet to the southeast. One-hour average project construction noise levels are estimated at approximately 75 dBA L_{eq} at 50 feet from construction activity on-site, due to construction equipment repositioning and idling, workers' breaks, and other delays such as construction phasing. In addition, project construction noise would attenuate with distance at a rate of 6 dBA per doubling of distance (assuming no additional attenuation from intervening vegetation, topography, or structures) to approximately 63 dBA L_{eq} at 200 feet at the nearest residence.

In addition to construction noise, the County Noise Ordinance, Section 36.404, sets limits on the operational (i.e., non-construction) noise levels generated from one property to another (County 2008b). Operational noise cannot exceed the 1-hour average sound level limits in Section 36.404, measured at the property line of the property on which the noise is produced or at any location on a property that is receiving the noise. Once constructed, the operation of the proposed facility would be similar to that of the existing facility. The type of noise sources are assumed to remain unchanged, however, noise levels would increase somewhat with the expansion in size (e.g., the fire season increase in employees [i.e., vehicle trips] with the minor increase in parking spaces).

In addition to project construction noise, the project would also generate minor construction traffic from worker commute, and truck transport of hauling site demolition materials and the import of construction equipment and materials. Cut and fill during site grading is estimated to be balanced on-site and therefore not requiring the import or export of fill by truck. The proposed project would not facilitate a substantial increase in traffic volumes (i.e., less than doubling) on area roadways, which would not perceptibly increase existing or future traffic noise levels.

The implementation of standard noise reduction design measures, as described above, would reduce direct and indirect noise impacts to below the standards specified in the County’s General Plan and Municipal Code. Impacts would be less than significant and no mitigation is required.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less than Significant Impact. In addition to noise, the proposed project would generate vibration from project construction activities and equipment during site demolition, site excavation, trenching, and surface grading. Typically, groundborne vibration generated by man-made activities attenuates rapidly with distance from the source of vibration, and therefore vibration issues are usually confined to short distances from the source. Potential building damage from vibration is assessed in terms of peak particle velocity (ppv), typically in units of inches per second (in/sec). Groundborne vibration generated by construction projects is usually highest during pile driving, soil compacting, jackhammering, and demolition-related activities. Table 5 shows typical vibration levels for various pieces of construction equipment that generate high vibration levels (FTA 2006).

**Table 5
Construction Equipment Vibration Levels**

FTA threshold of human annoyance and risk of structural damage		0.2 in/sec ppv
Equipment		ppv at 25 feet (in/sec)
Pile Driver (impact)	Upper range	1.518
	Typical	0.644
Pile Driver (sonic)	Upper range	0.734
	Typical	0.170
Hydromill (slurry wall)	Soil	0.008
	Rock	0.017
Vibratory Roller		0.210
Hoe Ram		0.089
Large Bulldozer		0.089
Caisson Drilling		0.089
Loaded Trucks		0.076
Jackhammer		0.035
Small Bulldozer		0.003

Source: FTA 2006

The proposed demolition and construction of facilities would be located in proximity to existing and proposed structures and humans (e.g., Mountain Empire Veterinary Clinic approximately 10 feet to the west; Major’s Diner approximately 40 feet to the southeast; Pine Valley Post Office approximately 45 feet to the north). As shown above, vibration levels would be below the thresholds of human annoyance and risk of structural damage (0.2 in/sec ppv) for structures 25 feet or further from construction equipment.

At a distance of less than 25 feet, construction vibration must be estimated by a separate formula. This formula indicates that, when project construction occurs 10 feet from structures (e.g., Mountain Empire Veterinary Clinic during the proposed demolition of the existing fire station building), the vibration levels of the project construction equipment would be approximately

0.24 ppv in/sec. Caltrans has created criteria for damaging vibration levels based on the types of structure in the project vicinity, as shown in Table 6 below. This table shows that structures like those in the project area would have a vibration damage threshold of at least 0.3 in/sec ppv. Therefore, the project does not present a vibration risk to any structures in the vicinity. Vibration levels at the Mountain Empire Veterinary Clinic could occasionally exceed the FTA threshold of human annoyance (0.2 in/sec ppv) if all construction equipment were operating simultaneously on the side of the project site adjacent to the clinic. However, the temporally and spatially varied nature of construction indicates this concentration of equipment is highly unlikely to occur.

Table 6
Guideline Vibration Damage Potential Threshold Criteria

Structure and Condition	Peak Vibration Threshold (ppv) (in/sec)
Extremely fragile historic buildings, ruins, ancient monuments	0.08
Fragile buildings	0.1
Historic and some old buildings	0.25
Older residential structures	0.3
New residential structures	0.5
Modern industrial/commercial buildings	0.5

Note: Vibration criteria are based on continuous/frequent intermittent sources including impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.
Source: Caltrans 2013

In addition to construction equipment, heavy trucks transporting materials to and from the site have the potential to generate groundborne vibration. However, heavy trucks generally operate at very low speeds on-site and groundborne vibration induced by heavy truck traffic is not anticipated to be perceptible at distances greater than 25 feet. Therefore, vibration-related impacts would be less than significant and no mitigation is required.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than Significant Impact. As discussed in Response 3.12(a), the operation of the proposed project would replace the existing facility on-site (i.e., not introduce a new land use to the project area) and, therefore, would generate similar noise levels to the existing facility. Ambient noise levels in the project vicinity are dominated by vehicle traffic noise on adjacent Old Highway 80 and nearby I-8, rather than from the existing fire station. Operational noise levels would not result in an increase greater than the County significance guidelines limit of 10 dB CNEL or more (County 2009).

Additionally, the proposed project would not facilitate a substantial increase in traffic volumes on area roadways and, therefore, would not perceptibly increase existing or future traffic noise levels. Project-related increases in ambient noise levels along affected roadways would be less than the County’s significance threshold of 10 dBA. Impacts would be less than significant and no mitigation is required.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than Significant Impact. As discussed in Response 3.12(a), construction-related noise would result in an increase in ambient noise levels in the project area. However, ambient noise levels in the project area are dominated by existing and future vehicle traffic noise on adjacent Old Highway 80 and nearby I-8, and construction noise would result in a relatively small increase over this baseline. Implementation of standard noise reduction measures would reduce the project’s contribution to increased ambient noise levels to below the County’s significance threshold of 10 dBA. Impacts would be less than significant and no mitigation is required.

e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*

No Impact. The proposed project is not located within an airport land use plan or within 2 miles of a public airport. The proposed project site is located approximately 25.6 miles east of Gillespie Field and 26.5 miles southeast of Ramona Airport, which are the nearest public airports. Therefore, airport-related noise impacts would not occur and no mitigation is required.

f) *For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?*

No Impact. The proposed project is not located within the vicinity of a private airstrip. The closest private airport (On the Rocks Airport) is located approximately 11.8 miles to the southeast in the community of Alpine. Therefore, airstrip-related noise impacts would not occur and no mitigation is required.

3.13 POPULATION AND HOUSING

Would the project:

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) *Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*

No Impact. The proposed project would encompass the renovation of the existing fire station facility and the temporary installation of interim facilities during construction. The project does not propose the construction of new homes, businesses, or infrastructure, nor would it require the extension of water or sewer lines. The proposed project would not induce substantial population growth either directly or indirectly, nor would it remove any preexisting barriers to growth.

Furthermore, workers involved in the construction phase of the project would be temporary and would likely be drawn from the existing labor pool in the region. Therefore, their presence would not result in an increase for housing, goods, or services over existing conditions. Minimal short-term construction traffic could occur, but no long-term traffic increase is anticipated. No significant impacts would occur and no mitigation is required.

b) *Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?*

No Impact. Construction related to the proposed project would not directly affect or displace any existing residential units. Therefore, it would not displace any people or homes, and would not necessitate the construction of any replacement housing. No significant impacts would occur and no mitigation is required.

c) *Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?*

No Impact. See Response 3.12(b) above.

3.14 PUBLIC SERVICES

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Fire protection?

No Impact. The proposed project would result in a renovated fire station facility and would improve fire protection services in the area. Neither the renovations nor the temporary facilities that would be utilized during construction would result in an increase in demand for fire protection services. The changes proposed as part of the project would not change the operational characteristics of the existing facility or significantly increase the size of the facility, and no significant impacts would occur. No mitigation is required.

Police protection?

No Impact. Neither the fire station nor the temporary facilities proposed as part of the project, located on a nearby but not adjacent lot, would increase the need for police protection. Furthermore, the proposed project would not result in the construction of new housing or permanent buildings that would lead to an increase in demand for police protection. Therefore, no significant impacts would occur and no mitigation is required.

Schools?

No Impact. The proposed project does not include the construction of new housing, and would not substantially increase the number of employees at the fire station. Therefore, it would not increase the need for public education services in the area, and no significant impacts would occur. No mitigation is required.

Parks?

No Impact. The proposed project would result in enhanced fire station facilities and would not increase the use of existing neighborhood or regional parks, or other off-site recreational facilities. No significant impacts would occur and no mitigation is required.

Other public facilities?

No Impact. The proposed project would result in the renovation of an existing facility. It would not include the construction of any new housing or buildings that would result in increased demand for public facilities, nor would it increase the intensity of use of the site compared to existing uses. Therefore, the proposed project would not result in an increased demand for public services, and no significant impacts would occur. No mitigation is required.

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
3.15 RECREATION				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?</i>				
<i>b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?</i>				

No Impact. The proposed project involves renovation of an existing fire station and would not increase use of or demand for neighborhood parks, regional parks, or other recreation facilities. The proposed project would take place on developed land, and neither construction nor operation of the renovated fire station would result in a significant population increase or ensuing increased demand for recreational facilities. The proposed project would not have an impact related to use of recreational facilities, and no mitigation is required.

3.16 TRANSPORTATION/TRAFFIC

Would the project:

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

-
- b) *Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?*

This response applies to Questions 3.16(a) and (b) above.

Less than Significant Impact. As stated in previous responses, the proposed project would renovate the existing fire station and install temporary facilities nearby. There would be no substantial increase in the number of employees at the station or the intensity of operations as compared with existing conditions. Due to the relatively small scale of the renovation activities associated with the proposed project, traffic generated by the construction and use of the renovated fire station would be minimal. Overall, the renovation would not increase the total overall number staff utilizing the facility or introduce any new uses to the facility. Therefore, the number of vehicle trips generated by operation of the renovated facility would not generally increase over existing conditions.

The project would not generate a substantial amount of traffic; however, the project applicant would be subject to the County's Transportation Impact Fee (TIF) to ensure that the project does not contribute to a cumulative effect on the County's local and/or regional transportation system. Prior to the issuance of a building permit, the County of San Diego Department of General Services would be required to provide evidence of transfer of the specified fee to the County of San Diego Department of Public Works, based on current rates during the calendar year in which construction of the project is initiated and prior to the issuance of a building permit. Other than a potential temporary minor increase in traffic resulting with construction activities, the proposed project would not result in significant short-term or long-term impacts from an increase in traffic volumes generated by visitors to the site. Impacts would be less than significant.

- c) *Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?*

No Impact. As described above under Response 3.16(a) and (b), construction and operation of the renovated fire station would not increase the number of employees at the existing facility. The proposed project would not affect nearby air traffic patterns or create substantial safety risks. Therefore, no significant impacts related to air traffic patterns would occur and no mitigation is required.

- d) *Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*

No Impact. The proposed project would enhance the existing fire station but would not substantially increase the footprint of the facility in a way that would substantially alter circulation patterns on nearby streets. The renovations would not introduce any new uses to the project area. The design of the renovated facility would not introduce any design features that would increase hazards to motorists or others traveling on the street. Adequate sight distance would be maintained along Old Highway 80 and side streets adjacent to the site. There would be no significant impacts related to hazards from design features or incompatible uses. No mitigation is required.

e) *Result in inadequate emergency access?*

No Impact. The proposed renovations to the Pine Valley Fire Station would enhance its ability to provide emergency services in the area. Although these services would be based out of temporary facilities on a nearby property during construction, the two locations are nearly adjacent. As such, dispatches of emergency services from the temporary facility would not experience any delay compared to existing conditions. No decrease in emergency access would result from implementation of the proposed project, and no mitigation is required.

f) *Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?*

No Impact. Renovations associated with the proposed project would not affect alternative transportation opportunities in the vicinity of the project. Neither construction nor use of the renovated facility would affect or diminish the performance of adopted policies, plans, or programs related to these modes of transit. No significant impacts to alternative transportation would occur and no mitigation is required.

3.17 UTILITIES AND SERVICE SYSTEMS

Would the project:

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) *Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?*

Less than Significant Impact. The renovated fire station would continue to utilize the facility's existing wastewater treatment system. The current system routes wastewater from the fire station, as well as several adjacent businesses in the area, into an evaporation pond approximately 0.25 mile away. A sewer pump would be installed at the Training Facility site to facilitate transport of material to the evaporation pond. Although the number of employees at the fire station could increase slightly, depending on seasonal fire risk, the increased amount of wastewater generated would still be treatable by the existing system. Therefore, the proposed project would not exceed wastewater treatment requirements of the RWQCB. Impacts related to RWQCB requirements would be less than significant and no mitigation is required.

b) *Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

Less than Significant Impact. Water service to the fire station would continue to be provided via connection to a Pine Valley Mutual Water Company line located under Old Highway 80. The increased number of employees present at the station would result in a minimal increase in water demand and consumption, but the increase would not result in substantial impacts to the water system or its ability to provide water to other consumers. As described under response 3.17(a) above, wastewater generated on-site would be treated via the existing evaporation pond system and would not require an expansion of existing wastewater facilities. Impacts would be less than significant and no mitigation is required.

c) *Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

Less than Significant Impact. As described in Section 3.9, above, project construction would incorporate bioretention basins that would provide flow control, attenuation, and water quality benefits. In the event of larger storms, runoff would bypass the bioretention basins and instead be conveyed directly to the drainage via an overflow structure, which may consist of a weir or an underground storm drain system. This system would be designed in compliance with all applicable regulations, and would not cause significant environmental effects. Impacts would be less than significant, and mitigation is not required.

d) *Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?*

Less than significant. As described in Response 3.17(b) above, the existing fire station already receives water from the Pine Valley Mutual Water Company line under Old Highway 80. Although staffing of the renovated fire station may increase during peak fire season, the overall demand of the facility would not exceed the water supply available to the facility. No new or expanded water entitlements or resources would be required, and impacts would be less than significant. No mitigation is required.

e) *Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

No Impact. Wastewater generated by the proposed project would be treated via the existing private sewer system and evaporation ponds. As no connection to a public wastewater treatment system is proposed, the project would not interfere with any wastewater treatment provider's service capacity. No significant impacts would occur and no mitigation is required.

f) *Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?*

Less than Significant Impact. Solid waste disposal services in the Pine Valley community are provided by Waste Management. Construction activities, including demolition, associated with the proposed project would generate a limited amount of construction waste, and ongoing use of the facility by the slightly increased number of employees would generate a minimal increase in day-to-day waste. All solid waste from construction or use of the renovated facility would be trucked to Miramar Landfill at 5180 Convoy Street in San Diego, which has adequate capacity to accept the waste generated by the project. Impacts would be less than significant and no mitigation is required.

g) *Comply with federal, state, and local statutes and regulations related to solid waste?*

No Impact. The proposed projects would comply with all federal, state, and local statutes and regulations related to solid waste. Construction and use of the proposed project would not generate a substantial increased amount of solid waste, or require the transport of substantial amounts of solid or hazardous waste. Impacts related to solid waste regulations would be less than significant and no mitigation is required.

3.18 MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

a) *Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?*

Potentially Significant Unless Mitigated. As documented in this Initial Study, the proposed project could degrade the quality of the environment as a result of impacts to biological resources including, but not limited to, critical habitat for the federally listed arroyo toad. Mitigation measures have been proposed to reduce these impacts to less than significant.

b) *Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?*

Potentially Significant Unless Mitigated. As documented in this Initial Study, the proposed project could have impacts to biological resources including to critical habitat for an endangered species. This impact could be cumulatively considerable without mitigation; however, the proposed mitigation measures reduce this impact to less than significant.

c) *Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*

Less than Significant Impact. It is anticipated that compliance with applicable federal, state, and local regulations would result in the proposed project having no substantial adverse effects on human beings. Project design features would reduce potential impacts to human beings (e.g., visual, noise, and air quality impacts) to less than significant.

4.0 PREPARATION

The Initial Study for the subject project was prepared by:

Name, Certifications
Title

5.0 DETERMINATION

(To be completed by lead agency) Based on this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described herein have been included in this project. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

6.0 DE MINIMIS FEE DETERMINATION

(Chapter 1706, Statutes of 1990-AB 3158)

- It is hereby found that this project involves no potential for any adverse effect, either individually or cumulatively, on wildlife resources and that a "Certificate of Fee Exemption" shall be prepared for this project.
- It is hereby found that this project could potentially impact wildlife, individually or cumulatively, and therefore fees shall be paid to the State of California Governor's Office of Planning and Research (OPR) in accordance with Section 711.4(d) of the Fish and Game Code.

7.0 ENVIRONMENTAL DETERMINATION

The Initial Study for the proposed project has been reviewed and the environmental determination, contained in Section 5.0 preceding, is hereby approved:

Name
Title

8.0 REFERENCES

California Air Resources Board (ARB)

- 2005 *Air Quality and Land Use Handbook: A Community Health Perspective*. Available at <http://www.arb.ca.gov/ch/landuse.htm>. Accessed January 2014.

California Department of Transportation (Caltrans)

- 2013 Transportation and Construction Vibration Guidance Manual. September. Available at http://www.dot.ca.gov/hq/env/noise/pub/TCVGM_Sep13_FINAL.pdf.

County of San Diego (County)

- 2007 Resource Protection Ordinance. February.
- 2008a East County MSCP Planning Agreement (October 29, 2008, Exhibit B).
- 2008b Noise Ordinance, Sections 36.404, 36.408, and 36.409. Available at <http://www.sandiegocounty.gov/cob/ordinances>.
- 2009 Guidelines for Determining Significance and Report Format and Content Requirements, Noise. January 27. Available at <http://www.sandiegocounty.gov/content/dam/sdc/dplu/docs/Noise-Guidelines.pdf>.
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Federal Transit Administration (FTA)

- 2006 *Transit Noise and Vibration Impact Assessment*. Washington, D.C. May.

OEHHA

- 2015 Air Toxics Hot Spot Program Risk Assessment Guidelines. February. Available at http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf.

APPENDIX A

AIR QUALITY TECHNICAL STUDY

**AIR QUALITY TECHNICAL STUDY
FOR THE
PINE VALLEY FIRE STATION PROJECT
SAN DIEGO, CALIFORNIA**

Prepared for:

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March 2016

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A CalEEMod Data

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LIST OF ACRONYMS AND ABBREVIATIONS

$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
$^{\circ}\text{F}$	degrees Fahrenheit
ARB	Air Resources Board
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CO	carbon monoxide
CSV	comma-separated value
DPM	diesel particulate matter
EPA	U.S. Environmental Protection Agency
HI	hazard index
HRA	health risk assessment
lbs	pounds
mg/m^3	milligrams per cubic meter
NAAQS	National Ambient Air Quality Standards
NO	nitric oxide
NO ₂	nitrogen dioxide
NO _x	oxides of nitrogen
PM	particulate matter
PM ₁₀	particulate matter with size equal to or less than 10 micrometers in diameter
PM _{2.5}	particulate matter with size equal to or less than 2.5 micrometers in diameter
ppb	parts per billion
ppm	parts per million
RAQS	Regional Air Quality Strategy
ROG	reactive organic gases
SANDAG	San Diego Association of Governments
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SIP	State Implementation Plan
SO ₂	sulfur dioxide
TAC	toxic air contaminant
VMT	vehicle miles traveled
VOC	volatile organic compounds
WRCC	Western Regional Climate Center

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SECTION 1 INTRODUCTION

The Pine Valley Fire Station project site is located in the unincorporated community of Pine Valley in southeastern San Diego County, north of Interstate 8, and east of State Route 79. The project includes the renovation of the existing volunteer Pine Valley Fire Station from an existing 3-bay volunteer fire station to a new facility with 4 apparatus bays, firefighter sleeping quarters, dining area, recreation space, training facilities, and office space for the County Fire Authority personnel. The project also includes the acquisition of two adjacent properties and two easements. The fire station to be renovated is located at 28850 Old Highway 80 (APN 410-120-37), and an existing Fire Department property (APN 410-120-35) would also be renovated as a training facility.

The air quality technical study examines the degree to which the proposed project may result in significant adverse changes in air quality. This study includes a description of existing air quality conditions, a summary of applicable regulations, and an analysis of construction and operational air quality impacts of the proposed project.

1.1 PROJECT DESCRIPTION

The project site is located in the Cleveland National Forest at the foothills of the Laguna Mountains at the existing CAL-FIRE Pine Valley Fire Station 44 off Old Highway 80 on unincorporated land within the County of San Diego. The existing facility is 6,870 square feet. The Pine Valley Fire Station is currently an operational 3-bay volunteer fire station. This project proposes renovation of the existing fire station building and training facility. The new fire station would have 4 apparatus bays, firefighter sleeping quarters, dining area, recreation space, training facilities and office space for the County Fire Authority personnel. This would improve the working environment for the County Fire Authority personnel, allowing them to have a renovated space for training activities and improving their capacity to serve the public. The project would require two property acquisitions and two easements to accommodate facility expansion.

The surrounding land uses include Old Highway 80 to the south, Interstate 8 to the south, and acres of open space in the Cleveland National Forest. Adjacent to the project site include low-density residential and commercial developments. CAL-FIRE Descanso Fire Station 45 is located approximately 6.7 miles to the northwest of the Pine Valley Fire Station. Regional access is from Interstate 8, approximately 0.7 miles to the south and State Route 79 approximately 5 miles to the northwest.

The construction process would begin in March 2017 and be completed by July 2018. Two property acquisitions and two easement acquisitions would occur as part of the proposed project. Renovations included in the proposed project would increase the size of the existing facility. A new paved “apron” would be installed in front of the apparatus bay in order to facilitate access to and from Old Highway 80. The CFA-owned “Training Facility” site, which would also be renovated as part of the proposed project, is located to the east of the fire station, behind the existing post office building. The site encompasses approximately 0.5 acres and houses a barn and a modular structure that is surrounded by a concrete walkway.

SECTION 2 EXISTING CONDITIONS

2.1 CLIMATE, TOPOGRAPHY, AND METEOROLOGY

Air quality is defined by the concentration of pollutants in relation to their impact on human health. Concentrations of air pollutants are determined by the rate and location of pollutant emissions released by pollution sources, and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, and sunlight. Therefore, ambient air quality conditions within the local air basin are influenced by such natural factors as topography, meteorology, and climate, in addition to the amount of air pollutant emissions released by existing air pollutant sources.

Climate, topography, and meteorology influence regional and local ambient air quality. Southern California is characterized as a semiarid climate, although it contains three distinct zones of rainfall that coincide with the coast, mountain, and desert. The project is located in Pine Valley, an unincorporated area in southeast San Diego County, and within the San Diego Air Basin (SDAB). The SDAB is a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean to the west and high mountain ranges to the east. The topography in the SDAB region varies greatly, from beaches on the west, to mountains and then desert to the east.

The climate of the SDAB is characterized by warm, dry summers and mild winters. One of the main determinants of its climatology is a semipermanent high pressure area in the eastern Pacific Ocean. This high-pressure cell maintains clear skies for much of the year. When the Pacific High moves southward during the winter, this pattern changes, and low-pressure storms are brought into the region, causing widespread precipitation. During fall, the region often experiences dry, warm easterly winds, locally referred to as Santa Ana winds, which raise temperatures and lower humidity, often to less than 20 percent.

The local meteorology of the area is represented by measurements recorded at the Alpine station. The normal annual precipitation, which occurs primarily from October through April, is approximately 16 inches. Normal January temperatures range from an average minimum of 42 degrees Fahrenheit (°F) to an average maximum of 65°F, and August temperatures range from an average minimum of 61°F to an average maximum of 91°F (WRCC 2016).

A dominant characteristic of spring and summer is night and early morning cloudiness, locally known as the marine layer. Low clouds form regularly, frequently extending inland over the

coastal foothills and valleys. These clouds usually dissipate during the morning, and afternoons are generally clear.

A common atmospheric condition known as a temperature inversion affects air quality in the SDAB. During an inversion, air temperatures get warmer rather than cooler with increasing height. Inversion layers are important for local air quality, because they inhibit the dispersion of pollutants and result in a temporary degradation of air quality. The pollution potential of an area is largely dependent on a combination of winds, atmospheric stability, solar radiation, and terrain. The combination of low wind speeds and low-level inversions produces the greatest concentration of air pollutants. On days without inversions, or on days of winds averaging over 15 miles per hour, the atmospheric pollution potential is greatly reduced.

2.2 CRITERIA POLLUTANTS

Individual air pollutants at certain concentrations may adversely affect human or animal health, reduce visibility, damage property, and reduce the productivity or vigor of crops and natural vegetation. Six air pollutants have been identified by the United States Environmental Protection Agency (EPA) and the California Air Resources Board (ARB) as being of concern both on a nationwide and statewide level: ozone; carbon monoxide (CO); nitrogen dioxide (NO₂); sulfur dioxide (SO₂); lead; and particulate matter, which is subdivided into two classes based on particle size: PM equal to or less than 10 micrometers in diameter (PM₁₀) and PM equal to or less than 2.5 micrometers in diameter (PM_{2.5}). Because the air quality standards for these air pollutants are regulated using human health and environmentally based criteria, they are commonly referred to as “criteria air pollutants.”

Ozone. Ozone is the principal component of smog and is formed in the atmosphere through a series of reactions involving reactive organic gases (ROG) and nitrogen oxides (NO_x) in the presence of sunlight. ROG and NO_x are called precursors of ozone. NO_x includes various combinations of nitrogen and oxygen, including nitric oxide (NO), NO₂, and others. Ozone is a principal cause of lung and eye irritation in the urban environment. Significant ozone concentrations are usually produced only in the summer, when atmospheric inversions are greatest and temperatures are high. ROG and NO_x emissions are both considered critical in ozone formation.

Carbon Monoxide. CO is a colorless and odorless gas that, in the urban environment, is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. Relatively high concentrations are typically found near crowded intersections and along heavily used roadways carrying slow-moving traffic. Even under most severe meteorological and traffic

conditions, high concentrations of CO are limited to locations within a relatively short distance (300 to 600 feet) of heavily traveled roadways. Vehicle traffic emissions can cause localized CO impacts, and severe vehicle congestion at major signalized intersections can generate elevated CO levels, called “hot spots,” which can be hazardous to human receptors adjacent to the intersections.

Nitrogen Dioxide. NO₂ is a product of combustion and is generated in vehicles and in stationary sources, such as power plants and boilers. It is also formed when ozone reacts with NO in the atmosphere. As noted above, NO₂ is part of the NO_x family and is a principal contributor to ozone and smog generation.

Sulfur Dioxide. SO₂ is a combustion product, with the primary source being power plants and heavy industries that use coal or oil as fuel. SO₂ is also a product of diesel engine combustion. SO₂ in the atmosphere contributes to the formation of acid rain.

Lead. Lead is a highly toxic metal that may cause a range of human health effects. Previously, the lead used in gasoline anti-knock additives represented a major source of lead emissions to the atmosphere. EPA began working to reduce lead emissions soon after its inception, issuing the first reduction standards in 1973. Lead emissions have significantly decreased due to the near elimination of leaded gasoline use.

PM. Particulate matter is a complex mixture of extremely small particles and liquid droplets. Particulate matter is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. Natural sources of particulate matter include windblown dust and ocean spray. The size of particulate matter is directly linked to the potential for causing health problems. EPA is concerned about particles that are 10 micrometers in diameter or smaller, because these particles generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Health studies have shown a significant association between exposure to particulate matter and premature death. Other important effects include aggravation of respiratory and cardiovascular disease, lung disease, decreased lung function, asthma attacks, and certain cardiovascular problems, such as heart attacks and irregular heartbeat (EPA 2007). Individuals particularly sensitive to fine particle exposure include older adults, people with heart and lung disease, and children. As previously discussed, EPA groups particulate matter into two categories, which are described below.

PM_{2.5}. Fine particles, such as those found in smoke and haze, are PM_{2.5}. Sources of fine particles include all types of combustion activities (motor vehicles, power plants, wood burning, etc.) and

certain industrial processes. PM_{2.5} is also formed through reactions of gases, such as SO₂ and nitrogen oxides, in the atmosphere. PM_{2.5} is the major cause of reduced visibility (haze) in California.

PM₁₀. PM₁₀ includes both fine and coarse dust particles; the fine particles are PM_{2.5}. Coarse particles, such as those found near roadways and dusty industries, are larger than 2.5 micrometers and smaller than 10 micrometers in diameter. Sources of coarse particles include crushing or grinding operations and dust from paved or unpaved roads. Control of PM₁₀ is primarily achieved through the control of dust at construction and industrial sites, the cleaning of paved roads, and the wetting or paving of frequently used unpaved roads.

2.3 HEALTH EFFECTS OF CRITERIA AIR POLLUTANTS

Ozone. Individuals exercising outdoors, children, and people with preexisting lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the most susceptible subgroups for ozone effects. Short-term exposure (lasting for a few hours) to ozone can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. In recent years, a correlation between elevated ambient ozone levels and increases in daily hospital admission rates, as well as mortality, has also been reported. An increased risk for asthma has been found in children who participate in multiple sports and live in communities with high ozone levels.

Particulate Matter (PM). A consistent correlation between elevated PM₁₀ and PM_{2.5} levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. In recent years, some studies have reported an association between long term exposure to air pollution dominated by fine particles and increased mortality, reduction in life-span, and an increased mortality from lung cancer.

Daily fluctuations in PM_{2.5} concentration levels have also been related to hospital admissions for acute respiratory conditions in children, to school and kindergarten absences, to a decrease in respiratory lung volumes in normal children, and to increased medication use in children and adults with asthma. Recent studies show lung function growth in children is reduced with long-term exposure to particulate matter. The elderly, people with pre-existing respiratory or cardiovascular disease, and children appear to be more susceptible to the effects of high levels of PM₁₀ and PM_{2.5}.

Carbon Monoxide (CO). Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include earlier onset of chest pain with exercise, and electrocardiograph changes indicative of decreased oxygen supply to the heart. Inhaled CO has no direct toxic effect on the lungs, but exerts its effect on tissues by interfering with oxygen transport. Hence, conditions with an increased demand for oxygen supply can be adversely affected by exposure to CO. Individuals most at risk include fetuses, patients with diseases involving heart and blood vessels, and patients with chronic hypoxemia (oxygen deficiency) as seen at high altitudes.

Nitrogen Dioxide (NO₂). Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children, is associated with long-term exposure to NO₂ at levels found in homes with gas stoves, which are higher than ambient levels found in southern California. Increase in resistance to air flow and airway contraction is observed after short-term exposure to NO₂ in healthy subjects. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups.

Sulfur Dioxide (SO₂). In asthmatics, increase in resistance to air flow, as well as reduction in breathing capacity leading to severe breathing difficulties, are observed after acute exposure to SO₂. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO₂. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO₂ levels. In these studies, efforts to separate the effects of SO₂ from those of fine particles have not been successful. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.

Lead. Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure. Lead poisoning can cause anemia, lethargy, seizures, and death, although it appears that there are no direct effects of lead on the respiratory system.

2.4 AIR QUALITY STANDARDS

Health-based air quality standards have been established for these criteria pollutants by EPA at the national level and by ARB at the state level. These standards were established to protect the

public with a margin of safety from adverse health impacts due to exposure to air pollution. California has also established standards for sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. A brief description of each criteria air pollutant is provided below along with the most current monitoring station data and attainment designations for the project study areas. Table 1 presents the National Ambient Air Quality Standards and the California Ambient Air Quality Standards.

2.5 SAN DIEGO AIR BASIN EXISTING AIR QUALITY

Ambient air pollutant concentrations in the SDAB are measured at air quality monitoring stations operated by ARB and the San Diego Air Pollution Control District (SDAPCD). The closest and most representative SDAPCD air quality monitoring station to the project site is the Alpine-Victoria Drive monitoring station, located at 2505 W. Victoria Drive, Alpine, California, 91901. Table 2 presents the most recent data over the past 3 years from the Alpine-Victoria monitoring station as summaries of the exceedances of standards and the highest pollutant levels recorded for years 2012 through 2014. These concentrations represent the existing, or baseline conditions, for the project, based on the most recent information available.

As shown in Table 2, ambient air concentrations of NO₂ and PM_{2.5} at the Alpine-Victoria monitoring station have not exceeded the NAAQS or CAAQS in the past 3 years. The 8-hour ozone concentration was exceeded each year in 2012, 2013, and 2014. Since CO and PM₁₀ concentrations are not recorded at the Alpine-Victoria monitoring station, concentrations were collected from the El Cajon-Redwood Avenue monitoring station, which is the next closest station to the project site. The CO and PM₁₀ concentrations did not exceed the CAAQS or NAAQS in any of the past 3 years.

2.6 SDAB ATTAINMENT STATUS

Both EPA and ARB use ambient air quality monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of these designations is to identify the areas with air quality problems and initiate planning efforts for improvement. The three basic designation categories are nonattainment, attainment, and unclassified. An “attainment” designation for an area signifies that pollutant concentrations did not exceed the established standard. In most cases, areas designated or redesignated as attainment must develop and implement maintenance plans, which are designed to ensure continued compliance with the standard.

**Table 1
National and California Ambient Air Quality Standards**

Pollutant	Averaging Time	California Standards ^a	National Standards ^b	
		Concentration ^c	Primary ^{c,d}	Secondary ^{c,e}
Ozone	1 hour	0.09 ppm (180 µg/m ³)	–	Same as primary standard
	8 hours	0.070 ppm (137 µg/m ³)	0.070 ppm (147 µg/m ³)	
Respirable particulate matter (PM ₁₀) ^f	24 hours	50 µg/m ³	150 µg/m ³	Same as primary standard
	Annual arithmetic mean	20 µg/m ³	–	
Fine particulate matter (PM _{2.5}) ^f	24 hours	–	35 µg/m ³	Same as primary standard
	Annual arithmetic mean	12 µg/m ³	12 µg/m ³	
Carbon monoxide (CO)	8 hours	9.0 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	None
	1 hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	
	8 hours (Lake Tahoe)	6 ppm (7 mg/m ³)	–	
Nitrogen dioxide (NO ₂) ^g	Annual arithmetic mean	0.030 ppm (57 µg/m ³)	0.053 ppm (100 µg/m ³)	Same as primary standard
	1 hour	0.18 ppm (339 µg/m ³)	100 ppb (188 µg/m ³)	None
Sulfur dioxide (SO ₂) ^h	Annual Arithmetic Mean	–	0.030 ppm (for certain areas) ^h	–
	24 hours	0.04 ppm (105 µg/m ³)	0.14 ppm (for certain areas) ^h	–
	3 hours	–	–	0.5 ppm (1,300 µg/m ³)
	1 hour	0.25 ppm (655 µg/m ³)	75 ppb (196 µg/m ³)	–
Lead ^{i,j}	30-day average	1.5 µg/m ³	–	Same as primary standard
	Calendar quarter	–	1.5 µg/m ³ (for certain areas) ^j	
	Rolling 3-month average	–	0.15 µg/m ³	
Visibility-reducing particles ^k	8 hours	See footnote j	No national standards	
Sulfates	24 hours	25 µg/m ³		
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m ³)		
Vinyl chloride ^l	24 hours	0.01 ppm (26 µg/m ³)		

Notes: mg/m³ = milligrams per cubic meter; ppb = parts per billion; ppm = parts per million; µg/m³ = micrograms per cubic meter

^a California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM₁₀, PM_{2.5}, and visibility-reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

^b National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM₁₀, the 24-hour is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than 1. For PM_{2.5}, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standards.

^c Concentration expressed first in the units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Celsius and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and reference pressure of 760 torr; (ppm) in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

^d National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

^e National Secondary Standards: The levels of air quality necessary to protect public welfare from any known or anticipated adverse effects of a pollutant.

^f On December 14, 2012, the national annual PM_{2.5} primary standard was lowered from 15 µg/m³ to 12.0 µg/m³. The existing national 24-hour PM_{2.5} standards (primary and secondary) were retained at 35 µg/m³, as was the annual secondary standard of 15 µg/m³. The existing 24-hour PM₁₀ standards (primary and secondary) of 150 µg/m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

^g To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. California standards are in units of ppm. To directly

compare the national 1-hour standard to the California standards the units can be converted from 100 ppb to 0.100 ppm.

^h On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO₂ national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical of 0.075 ppm.

ⁱ ARB has identified lead and vinyl chloride as toxic air contaminants with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

^j The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standards are approved.

^k In 1989, ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and the "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Source: ARB 2015a

Table 2
Ambient Air Quality Summary – Alpine Monitoring Station

Pollutant Standards	2012	2013	2014
Carbon Monoxide (CO) ^a			
National maximum 8-hour concentration (ppm)	1.86	*	*
State maximum 8-hour concentration (ppm)	1.85	*	*
State maximum 1-hour concentration (ppm)	2.2	*	*
<u>Number of Days Standard Exceeded</u>			
NAAQS 8-hour (>9.0 ppm)	0	*	*
CAAQS 8-hour (>9.0 ppm)	0	*	*
CAAQS 1-hour (>20.0 ppm)	0	*	*
Nitrogen Dioxide (NO₂)			
State maximum 1-hour concentration (ppb)	47	40	30
Annual Average (ppb)	6	6	5
<u>Number of Days Standard Exceeded</u>			
CAAQS 1-hour	0	0	0
Ozone			
State max 1-hour concentration (ppm)	0.101	0.095	0.092
National maximum 8-hour concentration (ppm)	0.083	0.082	0.081
<u>Number of Days Standard Exceeded</u>			
CAAQS 1-hour (>0.09 ppm)	1	2	0
CAAQS 8-hour (>0.070 ppm)/NAAQS 8-hour (>0.075 ppm)	22/7	27/6	30/10
Particulate Matter (PM₁₀) ^a			
National maximum 24-hour concentration (µg/m ³)	48.0	41.0	48.0
State maximum 24-hour concentration (µg/m ³)	47.2	41.1	47.0
State annual average concentration (µg/m ³)	23.4	24.1	26.6
<u>Measured Number of Days Standard Exceeded</u>			
NAAQS 24-hour (>150 µg/m ³)	0	0	0
CAAQS 24-hour (>50 µg/m ³)	0	0	0
Particulate Matter (PM_{2.5})			
National maximum 24-hour concentration (µg/m ³)	19.3	20.1	17.4
State maximum 24-hour concentration (µg/m ³)	25.5	20.1	17.4
National annual average concentration (µg/m ³)	*	7.9	8.1
State annual average concentration (µg/m ³)	*	*	*
<u>Measured Number of Days Standard Exceeded</u>			
NAAQS 24-hour (>35 µg/m ³)	0	0	0

Source: ARB 2015b.

*Insufficient data to determine the value.

^a Data from next closest monitoring station: El Cajon-Redwood Avenue

In contrast to attainment, a “nonattainment” designation indicates that a pollutant concentration has exceeded the established standard. Nonattainment may differ in severity. To identify the severity of the problem and the extent of planning and actions required to meet the standard, nonattainment areas are assigned a classification that is commensurate with the severity of their air quality problem (e.g., moderate, serious, severe, extreme).

Finally, an unclassified designation indicates that insufficient data exist to determine attainment or nonattainment. In addition, the California designations include a subcategory of nonattainment-transitional, which is given to nonattainment areas that are progressing and nearing attainment.

As shown in Table 3, the SDAB currently meets NAAQS for all criteria air pollutants except ozone, and meets the CAAQS for all criteria air pollutants except ozone, PM₁₀, and PM_{2.5}. The SDAB currently falls under a federal maintenance plan for 8-hour ozone. The SDAB is currently classified as a state nonattainment area for ozone, PM₁₀, and PM_{2.5}.

**Table 3
San Diego Air Basin Attainment Designations**

Pollutant	State	Federal
Ozone (1-hour)	Nonattainment	Attainment
Ozone (8-hour)	Nonattainment	Nonattainment
Carbon Monoxide	Attainment	Unclassified/Attainment
Nitrogen Dioxide	Unclassified/Attainment	Unclassified/Attainment
Sulfur Dioxide	Unclassified/Attainment	Unclassified/Attainment
PM ₁₀	Nonattainment	Unclassified
PM _{2.5}	Nonattainment	Unclassified
Sulfates	Attainment	N/A
Hydrogen Sulfide	Unclassified	N/A
Visibility Reducing Particles	Unclassified/Attainment	N/A
Lead	Unclassified/Attainment	Unclassified/Attainment

Source: ARB 2015c.

N/A = not applicable; no standard.

2.7 TOXIC AIR CONTAMINANTS

In addition to criteria pollutants, both federal and state air quality regulations also focus on toxic air contaminants (TACs). TACs can be separated into carcinogens and noncarcinogens based on the nature of the effects associated with exposure to the pollutant. For regulatory purposes, carcinogens are assumed to have no safe threshold below which health impacts would not occur. Any exposure to a carcinogen poses some risk of contracting cancer. Noncarcinogens differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

TACs may be emitted by stationary, area, or mobile sources. Common stationary sources of TAC emissions include gasoline stations, dry cleaners, and diesel backup generators, which are subject to local air district permit requirements. The other, often more significant, sources of TAC emissions are motor vehicles on freeways, high-volume roadways, or other areas with high numbers of diesel vehicles, such as distribution centers. Off-road mobile sources are also major contributors of TAC emissions and include construction equipment, ships, and trains.

Particulate exhaust emissions from diesel-fueled engines (diesel PM) were identified as a TAC by ARB in 1998. Federal and state efforts to reduce diesel PM emissions have focused on the use of improved fuels, adding particulate filters to engines, and requiring the production of new-technology engines that emit fewer exhaust particulates.

Diesel engines tend to produce a much higher ratio of fine particulates than other types of internal combustion engines. The fine particles that make up diesel PM tend to penetrate deep into the lungs and the rough surfaces of these particles makes it easy for them to bind with other toxins within the exhaust, thus increasing the hazards of particle inhalation. Long-term exposure to diesel PM is known to lead to chronic, serious health problems including cardiovascular disease, cardiopulmonary disease, and lung cancer.

2.8 ODOR

Odors are considered an air quality issue both at the local level (e.g., odor from wastewater treatment) and at the regional level (e.g., smoke from wildfires). Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

The ability to detect odors varies considerably among the population and is subjective. Some individuals have the ability to smell minute quantities of specific substances while others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; an odor that is offensive to one person (e.g., from a fast-food restaurant or bakery) may be perfectly acceptable to another. Unfamiliar odors may be more easily detected and likely to cause complaints than familiar ones.

Several examples of common land use types that generate substantial odors include wastewater treatment plants, landfills, composting/green waste facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting/coating operations, rendering plants, and food packaging plants.

Offensive odors can potentially affect human health in several ways. First, odorant compounds can irritate the eye, nose, and throat, which can reduce respiratory volume. Second, the ROGs that cause odors can stimulate sensory nerves to cause neurochemical changes that might influence health, for instance, by compromising the immune system. Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects such as stress.

2.9 SENSITIVE RECEPTORS

Some members of the population are especially sensitive to air pollutant emissions and should be given special consideration when evaluating air quality impacts from projects. These include children, the elderly, people with preexisting respiratory or cardiovascular illness, and athletes and others who engage in frequent exercise. Air quality regulators typically define sensitive receptors as schools, hospitals, resident care facilities, day-care centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality.

Residential areas are also considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to pollutants present. Recreational land uses are considered moderately sensitive to air pollution. Exercise places a high demand on respiratory functions, which can be impaired by air pollution even though exposure periods during exercise are generally short. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent as the majority of the workers tend to stay indoors most of the time.

The nearest off-site sensitive receptors are single-family residences located approximately 250 feet to the southwest of the project site. Residential homes are also located to the west and east at greater distances from the project site. The Pine Valley Elementary School located approximately 1,677 feet east of the project site off Old Highway 80.

SECTION 3

REGULATORY FRAMEWORK

3.1 FEDERAL STANDARDS

EPA, under the provisions of the Clean Air Act (CAA), requires each state with regions that have not attained the National Ambient Air Quality Standards to prepare a State Implementation Plan, detailing how these standards are to be met in each local area. The State Implementation Plan is a legal agreement between each state and the federal government to commit resources to improving air quality. It serves as the template for conducting regional and project-level air quality analysis. The State Implementation Plan is not a single document, but a compilation of new and previously submitted attainment plans, emissions reduction programs, district rules, state regulations, and federal controls.

3.2 STATE STANDARDS

ARB is the lead agency for developing the State Implementation Plan in California. Local air districts and other agencies prepare Air Quality Attainment Plans or Air Quality Management Plans (AQMPs), and submit them to ARB for review, approval, and incorporation into the applicable State Implementation Plan. ARB also maintains air quality monitoring stations throughout the state in conjunction with local air districts. Data collected at these stations are used by the ARB to classify air basins as being in attainment or nonattainment with respect to each pollutant and to monitor progress in attaining air quality standards.

The California Clean Air Act requires that each area exceeding the California Ambient Air Quality Standards for ozone, CO, SO₂, and NO₂ must develop a plan aimed at achieving those standards. The California Health and Safety Code Section 40914, requires air districts to design a plan that achieves an annual reduction in district-wide emissions of 5 percent or more, averaged every consecutive three-year period. To satisfy this requirement, the local air districts have to develop and implement air pollution reduction measures, which are described in their AQMPs, and outline strategies for achieving the California Ambient Air Quality Standards for any criteria pollutants for which the region is classified as nonattainment.

ARB has established emission standards for vehicles sold in California and for various types of equipment. California gasoline specifications are governed by both state and federal agencies. During the past decade, federal and state agencies have imposed numerous requirements on the production and sale of gasoline in California. ARB has also adopted control measures for diesel

PM and more stringent emissions standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators).

TACs in California are regulated primarily through the Tanner Air Toxics Act (Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act (Chapter 1252, Statutes of 1987). Assembly Bill 1807 sets forth a formal procedure for ARB to designate substances as TACs. Research, public participation, and scientific peer review must occur before ARB can designate a substance as a TAC. The Air Toxics Hot Spots Information and Assessment Act requires that TAC emissions from stationary sources be quantified and compiled into an inventory according to criteria and guidelines developed by ARB, and if directed to do so by the local air district, a health risk assessment (HRA) must be prepared to determine the potential health impacts of such emissions.

3.3 LOCAL STANDARDS

In San Diego County, the SDAPCD is the agency responsible for the administration of federal and state air quality laws, regulations, and policies. Included in the SDAPCD's tasks are monitoring of air pollution, preparation of the SIP for the SDAB, and promulgation of rules and regulations. The SIP includes strategies and tactics to be used to attain the federal ozone standard in the county. The SIP elements are taken from the Regional Air Quality Strategy (RAQS), the SDAPCD plan for attaining the state ozone standard, which is more stringent than the federal ozone standard. The rules and regulations include procedures and requirements to control the emission of pollutants and to prevent adverse impacts.

SDAPCD rules relevant to the proposed project include:

- Regulation IV: Prohibitions; Rule 50: Visible Emissions. Prohibits the generation of particulate matter emissions that exceed the visible emissions threshold.
- Regulation IV: Prohibitions; Rule 51: Nuisance. Prohibits the discharge, from any source, of such quantities of air contaminants or other materials that cause or have a tendency to cause injury, detriment, nuisance, annoyance to people and/or the public, or damage to any business or property.
- Regulation IV: Prohibitions; Rule 55: Fugitive Dust. Regulates fugitive dust emissions from any commercial construction or demolition activity capable of generating fugitive dust emissions, including active operations, open storage piles, and inactive disturbed areas, as well as track-out and carry-out onto paved roads beyond a project site.

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- Regulation IV: Prohibitions; Rule 67.0: Architectural Coatings. Requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce volatile organic compound (VOC) emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.

The proposed project is required to comply with these rules, and conformance will be incorporated into project specifications and procedures.

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SECTION 4 ANALYSIS OF IMPACTS

4.1 THRESHOLDS OF SIGNIFICANCE

According to the County of San Diego Guidelines for Determining Significance, a significant impact related to air quality would occur if implementation of the project would:

- conflict with or obstruct implementation of the San Diego Regional Air Quality Strategy (RAQS) or applicable portions of the SIP,
- result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation,
- result in cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable Federal or State ambient air quality standard (PM₁₀, PM_{2.5} or exceed quantitative thresholds for ozone precursors, oxides of nitrogen [NO_x] and Volatile Organic Compounds [VOCs]),
- expose sensitive receptors (including, but not limited to, schools, hospitals, resident care facilities, or day-care centers) to substantial pollutant concentrations, or
- create objectionable odors affecting a substantial number of people.

As stated in Appendix G of the CEQA Guidelines, the significance criteria established by the applicable air quality management board or air pollution control district may be relied on to make the impact determinations for specific program elements. SDAPCD has not developed quantitative significance thresholds for CEQA projects.

Since SDAPCD does not have quantitative significance thresholds, the San Diego County screening thresholds of significance for regional pollutant emissions were used to analyze the impacts of the project. A project with emissions rates below these thresholds is considered to have a less than significant impact on regional and local air quality throughout the SDAB. The County of San Diego *Guidelines for Determining Significance and Report Format and Content Requirements, Air Quality* (2007), which outline these screening level thresholds, state that a project that results in an emissions increase less than these levels would not lead to a violation of a NAAQS or CAAQS. The screening level thresholds are shown in Table 4.

Table 4
Regional Pollutant Emission Screening Level Thresholds of Significance

	ROG	NO_x	CO	SO_x	PM₁₀	PM_{2.5}	Lead
Pounds per hour	–	25	100	25	–	–	–
Pounds per day	75	250	550	250	100	55	3.2
Tons per year	13.7	40	100	40	15	10	0.6

ROG = reactive organic gases; NO_x = oxides of nitrogen; SO_x = sulfur oxides; CO = carbon monoxide; PM₁₀ = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less, PM_{2.5} = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less

– = No threshold proposed

Source: County of San Diego 2007

This analysis does not directly evaluate lead because little to no quantifiable and foreseeable emissions would be generated by the project. Lead emissions have significantly decreased due to the near elimination of leaded fuel use.

4.2 METHODOLOGY

Construction-related emissions associated with typical construction activities, such as site grading and construction of the buildings, were modeled using the California Emissions Estimator Model (CalEEMod), Version 2013.2.2. CalEEMod allows the user to enter project-specific construction information, such as types, number, and horsepower of construction equipment, and number and length of off-site motor vehicle trips. Construction-related exhaust emissions for the proposed project were estimated for construction worker commutes, haul trucks, and the use of off-road equipment.

After construction, day-to-day activities associated with operation of the project would generate emissions from a variety of sources. Mobile-source emissions would include vehicle trips made by County Fire Authority Personnel. However, the existing land uses include operation of vehicles and equipment for training and emergency response, as well as trips by workers and volunteers. The amount of activity for mobile sources is anticipated to remain similar to baseline emissions. Therefore, operational mobile source emissions were not estimated for the proposed project.

Area-source emissions would be associated with activities such as maintenance of landscaping and grounds. Natural gas combustion for space and water heating is also a direct area source of emissions. Vehicle fleet characteristics, energy consumption, waste generation, and water use and wastewater generation was calculated using CalEEMod defaults.

4.3 PROJECT IMPACTS

This section determines whether the potential impacts from project construction and operation would result in a significant impact. Significant impacts are defined below in relation to the thresholds of significance outlined in Section 4.1. If the project would exceed the applicable threshold and potentially result in a significant impact, mitigation measures are required to reduce the potential impact to below a level of significance. If the project would not exceed the applicable threshold, mitigation measures are not required.

Would the project conflict with or obstruct implementation of the applicable air quality plan?

Air quality plans describe air pollution control strategies to be implemented by a city, county, or regional air district. The primary purpose of an air quality plan is to bring an area that does not attain federal and state air quality standards into compliance with those standards pursuant to the requirements of the CAA and California CAA.

Air quality planning efforts are based on analysis and forecasts of air pollutant emissions throughout the entire region. The regional air quality plan for San Diego County is SDAPCD's RAQS, which is also the applicable portion of the SIP. The RAQS was developed pursuant to California CAA requirements, and identifies feasible emissions control measures to provide expeditious progress toward attaining the state ozone standard in San Diego County.

Projects that are consistent with the assumptions used in development of the applicable air quality plan are considered to not conflict with or obstruct the attainment of the air quality levels identified in the plan. Assumptions for land use development used in the RAQS are taken from local and regional planning documents. Emission forecasts rely on projections of vehicle miles traveled (VMT) by the Metropolitan Planning Organizations, such as the San Diego Association of Governments, and population, employment, and land use projections made by local jurisdictions during development of the area and general plans.

The use of construction equipment in the RAQS is estimated for the region on an annual basis, and construction-related emissions are estimated as an aggregate in the RAQS. Therefore, the project would not increase the assumptions for off-road equipment use in the RAQS.

While the RAQS acknowledges mobile and area sources, minor changes in the assumptions relative to these sources would not obstruct successful implementation of the strategies for improvement of SDAB's air quality. Since the project is a renovation of an existing facility and

structure, traffic and VMT are anticipated to remain the same as current operation. Thus, the project would not conflict with the RAQS.

Because the proposed project would not generate a substantial amount of additional vehicle trips, the proposed project would not result in additional emissions over the current assumptions used to develop the General Plan and AQMP. Since the proposed project would not result in a substantial increase in criteria pollutant emissions compared to the current assumptions in the RAQS, the project would not conflict with or obstruct implementation of the applicable air quality plan. This impact would be less than significant.

Would the project cause a violation of any air quality standard or contribute substantially to an existing or projected air quality violation?

Construction

Construction emissions are described as “short-term” or temporary in duration; however, they have the potential to represent a significant impact with respect to air quality. Construction of the proposed project would result in the temporary generation of ROG, NO_x, CO, SO₂, PM₁₀, and PM_{2.5} emissions. ROG, NO_x, CO, and SO₂ emissions are primarily associated with mobile equipment exhaust, including off-road construction equipment and on-road motor vehicles. Fugitive PM dust emissions are primarily associated with site preparation and vary as a function of such parameters as soil silt content, soil moisture, wind speed, acreage of disturbance area, and VMT by construction vehicles on- and off-site.

Construction of the proposed project would be concentrated in two areas: the existing Fire Station and the Training Facility. This additional square footage would accommodate 4 apparatus bays, firefighter sleeping quarters, dining area, recreation space, training facilities and office space for the County Fire Authority personnel. Construction is anticipated to start in mid-March 2017, with demolition completed by May 2017 and additional construction activities ending in July 2018. The project would be operational by the end of 2018.

The total emissions of criteria pollutants over the entire construction period for the project are presented in Table 5. Emissions for the proposed project would result in maximum daily emissions of approximately 11 pounds of ROG, 20 pounds of NO_x, 16 pounds of CO, <1 pound of SO_x, 2 pounds of PM₁₀, and 1 pound of PM_{2.5}. Additional modeling assumptions and details are provided in Appendix A.

Table 5
Estimated Daily and Annual Construction Emissions

	ROG	NO _x	CO	SO ₂	PM ₁₀ ¹	PM _{2.5} ¹
Maximum Daily Construction Emissions (lbs/day)	10.66	19.90	16.07	0.03	1.88	1.18
Threshold of Significance (lbs/day)	137	250	550	250	100	55
<i>Significant Impact?</i>	No	No	No	No	No	No

¹PM₁₀ emissions shown include the sum of particulate matter with aerodynamic diameter 0 to 2.5 microns and particulate matter with aerodynamic diameter 2.5 to 10 microns.

ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = carbon monoxide; SO₂ = sulfur dioxide; PM₁₀ = suspended particulate matter; PM_{2.5} = fine particulate matter

Source: Estimated by AECOM in 2016

As shown in Table 5, construction-generated emissions of ROG, NO_x, CO, SO₂, PM₁₀, and PM_{2.5} would not exceed applicable daily thresholds established by the County of San Diego. Emissions would also be controlled with standard construction practices enforceable pursuant to San Diego County Code of Regulatory Ordinances Title 9 Construction Codes and Fire Code. Therefore, construction emissions would not violate an ambient air quality standard or contribute substantially to an existing violation. This impact would be less than significant.

Operation

After construction, day-to-day activities associated with the operation of the proposed project would generate emissions from mobile and area sources. Operational emissions may be both direct and indirect emissions, and would be generated by area and mobile sources associated with the project. Area-source emissions would be associated with activities such as maintenance of landscaping and grounds. Natural gas combustion for space and water heating is also a direct area source of emissions. Mobile-source emissions would include vehicle trips by County Fire Authority Personnel and members of the public.

The operational emissions associated with the activities for existing land uses and the proposed project were quantified using CalEEMod. Additional details are available in Appendix A.

Pursuant to the state CEQA Guidelines (Section 15125[e]) this analysis is only required to evaluate the net change in operational emissions from the existing station at the time environmental analysis for the project is commenced. Therefore, as discussed earlier, the analysis does not assume a substantial increase in vehicle trips associated with the proposed project. This approach is consistent with the definition of baseline conditions pursuant to CEQA. Table 6 shows the maximum daily emissions that could occur based on the increased square footage for the proposed project.

Table 6
Summary of Modeled Long-Term Operational Emissions

Emissions Source	ROG (lbs/day)	NO_x (lbs/day)	CO (lbs/day)	SO₂ (lbs/day)	PM₁₀ (lbs/day)	PM_{2.5} (lbs/day)
2018 Annual Emissions	0.56	0.10	0.08	0.0006	0.007	0.007
Threshold of Significance	137	250	550	250	100	55
Significant Impact?	No	No	No	No	No	No

ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = carbon monoxide; SO₂ = sulfur dioxide;
PM₁₀ = suspended particulate matter; PM_{2.5} = fine particulate matter.
Source: Estimated by AECOM in 2016

As shown in Table 6, the total operational emissions from the project would not exceed any of the significance thresholds. Therefore, construction and operation of the project would not violate an ambient air quality standard or contribute substantially to an existing violation. This impact would be less than significant.

Would the project result in cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

A significant impact related to air quality would occur if implementation of the project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.

The cumulative analysis of construction and operational emissions focuses on whether a specific project would result in a cumulatively considerable increase in emissions. By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development within the SDAB, and this regional impact is cumulative rather than attributable to any one source. A project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development projects. The thresholds of significance are relevant to whether a project's individual emissions would result in a cumulatively considerable incremental contribution to the existing cumulative air quality conditions. If a project's emissions would be less than those threshold levels, the project would not be expected to result in a considerable incremental contribution to the significant cumulative impact.

Because the proposed project would not exceed any project-level air quality significance thresholds, the proposed project's construction and operational emissions would not be cumulatively considerable. Therefore, impacts related to a cumulatively considerable net increase of criteria pollutants would be less than significant.

Would the project expose sensitive receptors to substantial pollutant concentrations?

As discussed earlier, the nearest off-site sensitive receptors are single-family residences located approximately 250 feet to the southwest of the project site. The residential units represent the nearest sensitive receptors with the potential to be impacted by construction and operation of the proposed project.

Carbon Monoxide

The primary mobile-source pollutant of localized concern is CO. Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed, and delay. Transport of CO is limited since it disperses rapidly with distance from the source under normal meteorological conditions. However, under specific meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels related to local sensitive land uses such as residential units, hospitals, schools, and childcare facilities.

CO concentration is a direct function of motor vehicle activity, particularly during peak commute hours, and meteorological conditions. Under specific meteorological conditions, CO concentrations may reach unhealthy levels with respect to local sensitive land uses, such as residential areas, schools, preschools, playgrounds, and hospitals. As a result, air districts typically recommend analysis of CO emissions at a local rather than a regional level.

The proposed project would not cause a substantial increase in traffic volumes, and therefore, would not result in CO concentrations exceeding the emission limit. Therefore, the CO concentrations resulting from the project would not violate the California Ambient Air Quality Standard for either the 1-hour period (20 ppm) or the eight-hour period (9.0 ppm). This impact would be less than significant.

Construction-Related Health Risks

The greatest potential for TAC emissions resulting from construction of the proposed project would originate from diesel PM emissions associated with heavy equipment operations. Construction of the proposed project would result in the generation of diesel PM from the use of off-road diesel construction equipment required for demolition, site preparation, and building construction. Most diesel PM emissions associated with material delivery trucks and construction worker vehicles would occur off-site and would not have a substantial contribution to TAC emissions in the project area.

The generation of diesel PM emissions from construction projects typically occurs in a single area for a short period of time. The dose of TACs to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure a person has with the substance. Dose is positively correlated with time, meaning that a longer exposure period to a fixed amount of emissions results in a higher exposure level and higher health risks for the maximally exposed individual.

According to the Office of Environmental Health Hazard Assessment (OEHHA), the health risks associated with exposure of residential receptors to TAC emissions should be based on a 30-year exposure period (OEHHA 2015). However, health risk assessments should be limited to the period/duration of activities associated with the emissions activity. As discussed above, project construction activities would occur for a total of one year. Therefore, the total exposure time would be approximately one percent of the total exposure time for a typical health risk assessment.

Furthermore, the dose (i.e., concentration levels) to which nearby receptors would be exposed would be limited because of the distance from the project site (approximately 250 to 1,700 feet from the nearest sensitive receptor to the site). ARB has published studies that show a 70 percent decrease in PM emissions at 500 feet from freeways and high-traffic roads, which are continuous emission sources (ARB 2005). Emissions would be dispersed around the project site; thus, TAC emissions from project construction would be less concentrated than those from a typical roadway and would be less likely to substantially expose receptors. SDAPCD rules and regulations would also reduce PM₁₀ emissions generated by construction of the proposed project. Therefore, it is anticipated that PM concentrations would decrease substantially before affecting the nearest sensitive receptor.

Thus, considering the distance to the nearest sensitive receptor, intermittent emission source, and relatively low overall exposure period, construction emissions would not generate pollutant concentrations that expose sensitive receptors to substantial pollutant concentrations. This impact would be less than significant.

Would the project create objectionable odors affecting a substantial number of people?

The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies.

Potential sources that may emit odors during construction of the proposed project would include exhaust from diesel construction equipment. The project would utilize typical construction techniques, and the odors from off-road equipment and on-road vehicles would be typical of most construction sites and temporary in nature.

Operation of the project would not add any new odor sources, and any odors generated would be similar to existing odors associated with land uses in the area. The land uses associated with the project would be commercial, which is not a typically large generators of odor emissions. As a result, the project's construction and operational activities would not create objectionable odors affecting a substantial number of people. The impact would be less than significant.

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SECTION 5

CONCLUSIONS AND MITIGATION MEASURES

5.1 CONCLUSIONS

Since the project would not result in a substantial increase in criteria pollutant emissions compared to the current assumptions in the RAQS, the project would not conflict with or obstruct implementation of the applicable air quality plan. This impact would be less than significant.

Construction and operation of the project would not violate an ambient air quality standard or contribute substantially to an existing violation. This impact would be less than significant. Because the project would not exceed any project-level air quality significance thresholds, the project's construction and operational emissions would not be cumulatively considerable. Therefore, impacts related to a cumulatively considerable net increase of criteria pollutants would be less than significant.

Therefore, the CO concentrations resulting from the project would not violate the California Ambient Air Quality Standard for either the 1-hour period (20 ppm) or the eight-hour period (9.0 ppm). This impact would be less than significant.

Construction and operation of the proposed project would not expose sensitive receptors to substantial pollutant concentrations that would result in a health risk. The impact would be less than significant.

The project's construction and operational activities would not create objectionable odors affecting a substantial number of people. The impact would be less than significant.

5.2 MITIGATION MEASURES

No mitigation measures or air quality emissions reduction measures are recommended.

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APPENDIX A

CALEEMOD MODELING DATA

Pine Valley Fire Station
San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government Office Building	12.87	1000sqft	0.30	12,865.00	0
Government Office Building	4.16	1000sqft	0.10	4,160.00	0
Parking Lot	3.50	1000sqft	0.08	3,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2018
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land uses consistent with the project description...4,160 sqft training facility + new storage area, 12,865 sqft fire station, estimated parking area

Construction Phase - Construction phase dates estimated based off project timeline.

Off-road Equipment -

Demolition - Determined by site plan

Grading - Acreage conservatively based on total project site

Vehicle Trips - Consistent with the traffic analysis and the existing land use, no increase to trips is anticipated.

Energy Use -

Mobile Land Use Mitigation -

Trips and VMT -

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	43.00
tblConstructionPhase	NumDays	100.00	282.00
tblConstructionPhase	NumDays	10.00	56.00
tblConstructionPhase	NumDays	2.00	11.00
tblConstructionPhase	NumDays	5.00	23.00
tblConstructionPhase	NumDays	1.00	11.00
tblConstructionPhase	PhaseEndDate	8/31/2018	5/31/2018
tblConstructionPhase	PhaseStartDate	8/1/2018	5/1/2018
tblGrading	AcresOfGrading	0.00	3.27
tblGrading	AcresOfGrading	5.50	3.27
tblLandUse	LandUseSquareFeet	12,870.00	12,865.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblVehicleTrips	WD_TR	68.93	0.00

2.0 Emissions Summary

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.5482	2.0000e-005	2.1300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7500e-003
Energy	0.0106	0.0962	0.0808	5.8000e-004		7.3100e-003	7.3100e-003		7.3100e-003	7.3100e-003		115.4023	115.4023	2.2100e-003	2.1200e-003	116.1047
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.5588	0.0962	0.0829	5.8000e-004	0.0000	7.3200e-003	7.3200e-003	0.0000	7.3200e-003	7.3200e-003		115.4068	115.4068	2.2200e-003	2.1200e-003	116.1094

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.5482	2.0000e-005	2.1300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7500e-003
Energy	0.0106	0.0962	0.0808	5.8000e-004		7.3100e-003	7.3100e-003		7.3100e-003	7.3100e-003		115.4023	115.4023	2.2100e-003	2.1200e-003	116.1047
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.5588	0.0962	0.0829	5.8000e-004	0.0000	7.3200e-003	7.3200e-003	0.0000	7.3200e-003	7.3200e-003		115.4068	115.4068	2.2200e-003	2.1200e-003	116.1094

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/15/2017	5/31/2017	5	56	
2	Site Preparation	Site Preparation	6/1/2017	6/15/2017	5	11	
3	Grading	Grading	6/16/2017	6/30/2017	5	11	
4	Building Construction	Building Construction	7/1/2017	7/31/2018	5	282	
5	Paving	Paving	5/1/2018	5/31/2018	5	23	
6	Architectural Coating	Architectural Coating	6/1/2018	7/31/2018	5	43	

Acres of Grading (Site Preparation Phase): 3.27

Acres of Grading (Grading Phase): 3.27

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 25,695; Non-Residential Outdoor: 8,565 (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	1	1.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	31.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	7.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

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					
Fugitive Dust					0.1223	0.0000	0.1223	0.0185	0.0000	0.0185			0.0000			0.0000
Off-Road	1.2049	10.4761	8.5825	0.0120		0.7266	0.7266		0.6930	0.6930		1,183.813 1	1,183.813 1	0.2333		1,188.711 8
Total	1.2049	10.4761	8.5825	0.0120	0.1223	0.7266	0.8489	0.0185	0.6930	0.7115		1,183.813 1	1,183.813 1	0.2333		1,188.711 8

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	0.0102	0.1383	0.1056	4.1000e-004	9.6500e-003	1.8600e-003	0.0115	2.6400e-003	1.7100e-003	4.3500e-003		41.0109	41.0109	2.8000e-004			41.0168
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0318	0.0373	0.4046	1.0400e-003	0.0822	6.0000e-004	0.0827	0.0218	5.5000e-004	0.0223		83.5017	83.5017	4.0300e-003			83.5863
Total	0.0419	0.1756	0.5103	1.4500e-003	0.0918	2.4600e-003	0.0943	0.0244	2.2600e-003	0.0267		124.5126	124.5126	4.3100e-003			124.6031

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					0.0550	0.0000	0.0550	8.3300e-003	0.0000	8.3300e-003			0.0000				0.0000
Off-Road	1.2049	10.4761	8.5825	0.0120		0.7266	0.7266		0.6930	0.6930	0.0000	1,183.8131	1,183.8131	0.2333			1,188.7118
Total	1.2049	10.4761	8.5825	0.0120	0.0550	0.7266	0.7816	8.3300e-003	0.6930	0.7013	0.0000	1,183.8131	1,183.8131	0.2333			1,188.7118

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	0.0102	0.1383	0.1056	4.1000e-004	9.6500e-003	1.8600e-003	0.0115	2.6400e-003	1.7100e-003	4.3500e-003		41.0109	41.0109	2.8000e-004		41.0168
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0318	0.0373	0.4046	1.0400e-003	0.0822	6.0000e-004	0.0827	0.0218	5.5000e-004	0.0223		83.5017	83.5017	4.0300e-003		83.5863
Total	0.0419	0.1756	0.5103	1.4500e-003	0.0918	2.4600e-003	0.0943	0.0244	2.2600e-003	0.0267		124.5126	124.5126	4.3100e-003		124.6031

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					0.3153	0.0000	0.3153	0.0340	0.0000	0.0340			0.0000			0.0000
Off-Road	1.2694	12.6852	7.2319	9.3300e-003		0.7705	0.7705		0.7089	0.7089		955.8663	955.8663	0.2929		962.0167
Total	1.2694	12.6852	7.2319	9.3300e-003	0.3153	0.7705	1.0858	0.0340	0.7089	0.7429		955.8663	955.8663	0.2929		962.0167

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0159	0.0186	0.2023	5.2000e-004	0.0411	3.0000e-004	0.0414	0.0109	2.8000e-004	0.0112		41.7509	41.7509	2.0100e-003			41.7932
Total	0.0159	0.0186	0.2023	5.2000e-004	0.0411	3.0000e-004	0.0414	0.0109	2.8000e-004	0.0112		41.7509	41.7509	2.0100e-003			41.7932

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					0.1419	0.0000	0.1419	0.0153	0.0000	0.0153			0.0000			0.0000	
Off-Road	1.2694	12.6852	7.2319	9.3300e-003		0.7705	0.7705		0.7089	0.7089	0.0000	955.8663	955.8663	0.2929			962.0167
Total	1.2694	12.6852	7.2319	9.3300e-003	0.1419	0.7705	0.9124	0.0153	0.7089	0.7242	0.0000	955.8663	955.8663	0.2929			962.0167

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0159	0.0186	0.2023	5.2000e-004	0.0411	3.0000e-004	0.0414	0.0109	2.8000e-004	0.0112		41.7509	41.7509	2.0100e-003		41.7932
Total	0.0159	0.0186	0.2023	5.2000e-004	0.0411	3.0000e-004	0.0414	0.0109	2.8000e-004	0.0112		41.7509	41.7509	2.0100e-003		41.7932

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					1.0680	0.0000	1.0680	0.4478	0.0000	0.4478			0.0000			0.0000
Off-Road	1.2049	10.4761	8.5825	0.0120		0.7266	0.7266		0.6930	0.6930		1,183.8131	1,183.8131	0.2333		1,188.7118
Total	1.2049	10.4761	8.5825	0.0120	1.0680	0.7266	1.7946	0.4478	0.6930	1.1408		1,183.8131	1,183.8131	0.2333		1,188.7118

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0318	0.0373	0.4046	1.0400e-003	0.0822	6.0000e-004	0.0827	0.0218	5.5000e-004	0.0223		83.5017	83.5017	4.0300e-003			83.5863
Total	0.0318	0.0373	0.4046	1.0400e-003	0.0822	6.0000e-004	0.0827	0.0218	5.5000e-004	0.0223		83.5017	83.5017	4.0300e-003			83.5863

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					0.4806	0.0000	0.4806	0.2015	0.0000	0.2015			0.0000			0.0000	
Off-Road	1.2049	10.4761	8.5825	0.0120		0.7266	0.7266		0.6930	0.6930	0.0000	1,183.8131	1,183.8131	0.2333			1,188.7118
Total	1.2049	10.4761	8.5825	0.0120	0.4806	0.7266	1.2072	0.2015	0.6930	0.8945	0.0000	1,183.8131	1,183.8131	0.2333			1,188.7118

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0318	0.0373	0.4046	1.0400e-003	0.0822	6.0000e-004	0.0827	0.0218	5.5000e-004	0.0223		83.5017	83.5017	4.0300e-003			83.5863
Total	0.0318	0.0373	0.4046	1.0400e-003	0.0822	6.0000e-004	0.0827	0.0218	5.5000e-004	0.0223		83.5017	83.5017	4.0300e-003			83.5863

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	1.2740	12.6738	8.0395	0.0113		0.8553	0.8553		0.7869	0.7869		1,159.5310	1,159.5310	0.3553			1,166.9919
Total	1.2740	12.6738	8.0395	0.0113		0.8553	0.8553		0.7869	0.7869		1,159.5310	1,159.5310	0.3553			1,166.9919

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0287	0.2543	0.3132	7.1000e-004	0.0199	3.7300e-003	0.0237	5.6800e-003	3.4300e-003	9.1100e-003		70.3674	70.3674	5.2000e-004			70.3783
Worker	0.0222	0.0261	0.2833	7.3000e-004	0.0575	4.2000e-004	0.0579	0.0153	3.9000e-004	0.0156		58.4512	58.4512	2.8200e-003			58.5104
Total	0.0509	0.2804	0.5965	1.4400e-003	0.0774	4.1500e-003	0.0816	0.0209	3.8200e-003	0.0248		128.8186	128.8186	3.3400e-003			128.8888

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	1.2740	12.6738	8.0395	0.0113		0.8553	0.8553		0.7869	0.7869	0.0000	1,159.5310	1,159.5310	0.3553			1,166.9919
Total	1.2740	12.6738	8.0395	0.0113		0.8553	0.8553		0.7869	0.7869	0.0000	1,159.5310	1,159.5310	0.3553			1,166.9919

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0287	0.2543	0.3132	7.1000e-004	0.0199	3.7300e-003	0.0237	5.6800e-003	3.4300e-003	9.1100e-003		70.3674	70.3674	5.2000e-004		70.3783
Worker	0.0222	0.0261	0.2833	7.3000e-004	0.0575	4.2000e-004	0.0579	0.0153	3.9000e-004	0.0156		58.4512	58.4512	2.8200e-003		58.5104
Total	0.0509	0.2804	0.5965	1.4400e-003	0.0774	4.1500e-003	0.0816	0.0209	3.8200e-003	0.0248		128.8186	128.8186	3.3400e-003		128.8888

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	1.0786	10.9578	7.7239	0.0113		0.7055	0.7055		0.6491	0.6491		1,140.2487	1,140.2487	0.3550		1,147.7032
Total	1.0786	10.9578	7.7239	0.0113		0.7055	0.7055		0.6491	0.6491		1,140.2487	1,140.2487	0.3550		1,147.7032

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0270	0.2297	0.2985	7.1000e-004	0.0199	3.4700e-003	0.0234	5.6800e-003	3.1900e-003	8.8700e-003		69.1590	69.1590	5.1000e-004			69.1698
Worker	0.0203	0.0238	0.2571	7.3000e-004	0.0575	4.1000e-004	0.0579	0.0153	3.8000e-004	0.0156		56.2587	56.2587	2.6200e-003			56.3138
Total	0.0473	0.2535	0.5556	1.4400e-003	0.0774	3.8800e-003	0.0813	0.0209	3.5700e-003	0.0245		125.4178	125.4178	3.1300e-003			125.4836

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	1.0786	10.9578	7.7239	0.0113		0.7055	0.7055		0.6491	0.6491	0.0000	1,140.2487	1,140.2487	0.3550			1,147.7032
Total	1.0786	10.9578	7.7239	0.0113		0.7055	0.7055		0.6491	0.6491	0.0000	1,140.2487	1,140.2487	0.3550			1,147.7032

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0270	0.2297	0.2985	7.1000e-004	0.0199	3.4700e-003	0.0234	5.6800e-003	3.1900e-003	8.8700e-003		69.1590	69.1590	5.1000e-004		69.1698
Worker	0.0203	0.0238	0.2571	7.3000e-004	0.0575	4.1000e-004	0.0579	0.0153	3.8000e-004	0.0156		56.2587	56.2587	2.6200e-003		56.3138
Total	0.0473	0.2535	0.5556	1.4400e-003	0.0774	3.8800e-003	0.0813	0.0209	3.5700e-003	0.0245		125.4178	125.4178	3.1300e-003		125.4836

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	0.9092	8.6233	7.1255	0.0111		0.5050	0.5050		0.4681	0.4681		1,054.2145	1,054.2145	0.2968		1,060.4462
Paving	9.1100e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.9183	8.6233	7.1255	0.0111		0.5050	0.5050		0.4681	0.4681		1,054.2145	1,054.2145	0.2968		1,060.4462

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0521	0.0612	0.6611	1.8700e-003	0.1479	1.0500e-003	0.1489	0.0392	9.8000e-004	0.0402		144.6653	144.6653	6.7400e-003			144.8069
Total	0.0521	0.0612	0.6611	1.8700e-003	0.1479	1.0500e-003	0.1489	0.0392	9.8000e-004	0.0402		144.6653	144.6653	6.7400e-003			144.8069

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	0.9092	8.6233	7.1255	0.0111		0.5050	0.5050		0.4681	0.4681	0.0000	1,054.2145	1,054.2145	0.2968			1,060.4462
Paving	9.1100e-003					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Total	0.9183	8.6233	7.1255	0.0111		0.5050	0.5050		0.4681	0.4681	0.0000	1,054.2145	1,054.2145	0.2968			1,060.4462

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0521	0.0612	0.6611	1.8700e-003	0.1479	1.0500e-003	0.1489	0.0392	9.8000e-004	0.0402		144.6653	144.6653	6.7400e-003			144.8069
Total	0.0521	0.0612	0.6611	1.8700e-003	0.1479	1.0500e-003	0.1489	0.0392	9.8000e-004	0.0402		144.6653	144.6653	6.7400e-003			144.8069

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	9.2323					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267			282.0102
Total	9.5309	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267			282.0102

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	2.9000e-003	3.4000e-003	0.0367	1.0000e-004	8.2100e-003	6.0000e-005	8.2700e-003	2.1800e-003	5.0000e-005	2.2300e-003		8.0370	8.0370	3.7000e-004			8.0448
Total	2.9000e-003	3.4000e-003	0.0367	1.0000e-004	8.2100e-003	6.0000e-005	8.2700e-003	2.1800e-003	5.0000e-005	2.2300e-003		8.0370	8.0370	3.7000e-004			8.0448

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	9.2323					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267			282.0102
Total	9.5309	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267			282.0102

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.9000e-003	3.4000e-003	0.0367	1.0000e-004	8.2100e-003	6.0000e-005	8.2700e-003	2.1800e-003	5.0000e-005	2.2300e-003		8.0370	8.0370	3.7000e-004		8.0448
Total	2.9000e-003	3.4000e-003	0.0367	1.0000e-004	8.2100e-003	6.0000e-005	8.2700e-003	2.1800e-003	5.0000e-005	2.2300e-003		8.0370	8.0370	3.7000e-004		8.0448

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Government Office Building	0.00	0.00	0.00		
Government Office Building	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Government Office Building	9.50	7.30	7.30	33.00	62.00	5.00	50	34	16
Government Office Building	9.50	7.30	7.30	33.00	62.00	5.00	50	34	16
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
0.511818	0.073499	0.191840	0.131575	0.036332	0.005186	0.012677	0.022513	0.001864	0.002072	0.006564	0.000601	0.003458

5.0 Energy Detail

5.1 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	0.0106	0.0962	0.0808	5.8000e-004		7.3100e-003	7.3100e-003		7.3100e-003	7.3100e-003		115.4023	115.4023	2.2100e-003	2.1200e-003	116.1047
NaturalGas Unmitigated	0.0106	0.0962	0.0808	5.8000e-004		7.3100e-003	7.3100e-003		7.3100e-003	7.3100e-003		115.4023	115.4023	2.2100e-003	2.1200e-003	116.1047

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					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Government Office Building	239.684	2.5800e-003	0.0235	0.0197	1.4000e-004		1.7900e-003	1.7900e-003		1.7900e-003	1.7900e-003		28.1982	28.1982	5.4000e-004	5.2000e-004	28.3698
Government Office Building	741.235	7.9900e-003	0.0727	0.0610	4.4000e-004		5.5200e-003	5.5200e-003		5.5200e-003	5.5200e-003		87.2042	87.2042	1.6700e-003	1.6000e-003	87.7349
Total		0.0106	0.0962	0.0808	5.8000e-004		7.3100e-003	7.3100e-003		7.3100e-003	7.3100e-003		115.4023	115.4023	2.2100e-003	2.1200e-003	116.1047

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		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Government Office Building	0.239684	2.5800e-003	0.0235	0.0197	1.4000e-004		1.7900e-003	1.7900e-003		1.7900e-003	1.7900e-003		28.1982	28.1982	5.4000e-004	5.2000e-004	28.3698
Government Office Building	0.741235	7.9900e-003	0.0727	0.0610	4.4000e-004		5.5200e-003	5.5200e-003		5.5200e-003	5.5200e-003		87.2042	87.2042	1.6700e-003	1.6000e-003	87.7349
Total		0.0106	0.0962	0.0808	5.8000e-004		7.3100e-003	7.3100e-003		7.3100e-003	7.3100e-003		115.4023	115.4023	2.2100e-003	2.1200e-003	116.1047

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.5482	2.0000e-005	2.1300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7500e-003
Unmitigated	0.5482	2.0000e-005	2.1300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7500e-003

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	0.1088					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4392					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-004	2.0000e-005	2.1300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7500e-003
Total	0.5482	2.0000e-005	2.1300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7500e-003

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	0.1088					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4392					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-004	2.0000e-005	2.1300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7500e-003
Total	0.5482	2.0000e-005	2.1300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.4900e-003	4.4900e-003	1.0000e-005		4.7500e-003

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
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10.0 Vegetation

APPENDIX B

BIOLOGICAL SURVEY AND INFORMAL JURISDICTIONAL DELINEATION SURVEY RESULTS

March 16, 2016

Mr. Marc Cass
County of San Diego
Department of General Services
Real Estate Services Division MS O-200
5560 Overland Avenue, Suite 410
San Diego, CA 92123-1204

Re: Biological Survey and Informal Jurisdictional Delineation Survey Results

Dear Mr. Cass:

This letter report summarizes the results of a survey conducted to document general biological conditions and jurisdictional waters at the Pine Valley Fire Station Project site and vicinity, shown in Figure 1, Regional/Vicinity Map. Potential jurisdictional waters were found in the project area during the survey as well as designated critical habitat for the arroyo toad (*Anaxyrus californicus*), a federally endangered species. Survey results are discussed further in this letter report, including species observations, vegetation communities, and the potential for special-status species to occur.

Methods

On October 14, 2015, two AECOM biologists (Sundeep Amin and Julie Stout) conducted a survey of general biological conditions and potential jurisdictional waters. The survey area included the project area and a 500-foot buffer. The reconnaissance-level survey involved walking the survey area on foot, noting all plant and wildlife species observed, and mapping vegetation communities and potential jurisdictional waters. Vegetation community mapping (based on the 2008 *Draft Vegetation Communities of San Diego County*¹) was completed by recording vegetation communities on printed aerial photographs of the site while conducting the field survey and then digitizing the vegetation communities using ArcGIS software.

Mapping of potential jurisdictional waters was conducted pursuant to *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States*² and *CDFW streambed and riparian areas: A Field Guide to Lake and Streambed Alteration Agreements Sections 1600-1607*³. Global Positioning System (GPS) points and lines were recorded in the field to mark U.S. Army Corps of Engineers (USACE) and California Department of Fish and Wildlife (CDFW) jurisdictional boundaries. These field data were used in combination with aerial imagery to delineate jurisdictional boundaries. Where field points did not correlate precisely with aerial imagery due to the

¹ Oberbauer, Thomas, Meghan Kelly, and Jeremy Buegge. 2008. *Draft Vegetation Communities of San Diego County*. March. Based on *Preliminary Descriptions of the Terrestrial Natural Communities of California*, Robert F. Holland, Ph.D., October 1986.

² Lichvar, R.W., and S.M. McColley. 2008. *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States*. U.S. Army Corps of Engineers. August.

³ California Department of Fish and Game. 1994. *A Field Guide to Lake and Streambed Alteration Agreements Sections 1600-1607, California Fish and Game Code*.

Mr. Marc Cass
March 16, 2016
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limitations of GPS unit accuracy, the delineation was adjusted to align with aerial imagery and field observations.

In addition to the field survey, a desktop review of literature and biological resource databases was conducted that included the California Natural Diversity Database (CNDDDB)⁴, the San Diego County Bird Atlas⁵, SanGIS⁶, U.S. Fish and Wildlife Service (USFWS)⁷, SanBios⁶, the National Wetlands Inventory⁸, and the National Hydrography Dataset⁹.

Results

Results of vegetation community mapping, wildlife surveys, and jurisdictional waters mapping are discussed below. No special-status plants or wildlife were detected during the survey; however, potential habitat for the arroyo toad was present. Plant and wildlife species detected during the survey are included in Appendices A and B, respectively. Appendix C includes representative site photos.

Vegetation Communities and Cover Types

Vegetation in the project area is predominantly a mix of native and nonnative species that are characteristic of disturbed soils. Vegetation communities/cover types mapped within the survey area are described below (Holland codes are provided in parentheses) and shown in Figure 2. Mapped acreages of each community or cover type are provided in Table 1.

Disturbed Habitat (11300) – Disturbed habitat occurs in areas that were altered by previous disturbance, possibly clearing and/or grading, and are now vegetated with weedy, predominantly nonnative species. Historical aerial imagery available via Google Earth indicates that initial disturbance of the site occurred prior to 1994, the date of the oldest aerial imagery available.

Urban/Developed (12000) – Urban/developed areas within the project area include paved parking areas, ornamental plantings, and buildings.

Big Sagebrush Scrub (35200) – This community was within the 500-foot buffer only, composed of a dense near monoculture of 3- to 5-foot-tall big sagebrush (*Artemisia tridentata*) with predominantly detritus and bare ground below.

Southern Arroyo Willow Riparian Forest (61320) – Downstream of the project site and within the 500-foot buffer of the site, the drainage contains a patch of willow riparian forest with

⁴ California Natural Diversity Database (CNDDDB). Retrieved from <http://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp>

⁵ Unitt, Phil. 2004. *San Diego County Bird Atlas*. October 31.

⁶ San Diego Geographic Information Source. Retrieved from <http://www.sangis.org/download/>

⁷ United States Fish and Wildlife Service Geospatial Services. Retrieved from <http://www.fws.gov/gis/data/national/>

⁸ United States Fish and Wildlife Service National Wetlands Inventory. Retrieved from <http://www.fws.gov/wetlands/Data/Data-Download.html>

⁹ United States National Hydrography Dataset. Retrieved from <http://nhd.usgs.gov/data.html>

mixed willow species including arroyo willow (*Salix lasiolepis*), red willow (*Salix laevigata*), and sandbar willow (*Salix exigua*).

Non-Vegetated Channel (64200) – Non-vegetated channel occurs within the drainage in the project area where the erosion and deposition within the active channel are inhibiting the establishment of vegetation.

Table 1
Vegetation Communities and Cover Types within the Pine Valley Fire Station Survey Area

Community	Holland Code	Acreage in Project Area	Acreage in 500-Foot Buffer
Disturbed Habitat	11300	0.22	11.27
Urban/Developed	12000	3.02	23.29
Big Sagebrush Scrub	35200	-	2.28
Southern Arroyo Willow Riparian Forest	61320	-	0.14
Non-Vegetated Channel	64200	0.03	0.13
TOTAL		3.27	37.11

Wildlife

A list of wildlife observed during the survey is provided in Appendix B. The project area contains mature trees, which may be used for nesting by birds protected under the Migratory Bird Treaty Act. No special-status wildlife species were observed during the survey; however, there are several records of previously recorded special-status species within 1 mile of the project site in the California Natural Diversity Database (CNDDDB; Figure 3). CNDDDB and USFWS records within 1 mile of the project site are described with potential to occur in Table 2 below. These generally have a low potential to occur due to a lack of suitable habitat in the project area. As shown in Figure 3, most of the CNDDDB records are buffered points where the size of the buffer reflects the accuracy of the location information associated with each record. In addition to CNDDDB and USFWS, species records from the San Diego County Bird Atlas, SanGIS, and SanBios were reviewed.

The arroyo toad, a federally endangered species, has a moderate potential to occur on site due to the designated critical habitat overlapping the eastern edge of the project site and known occurrences of arroyo toads at Pine Valley Creek, approximately 1 mile north of the site. The onsite drainage could be used by arroyo toads during dispersal and surrounding upland habitat could be used for aestivation. Breeding habitat is not present, but there is potential for ponding along the drainage immediately downstream of the site within the 500-foot buffer where the willow riparian forest occurs. The drainage overall has a low suitability for arroyo toad due to its smaller size as a first order drainage (arroyo toads prefer third to sixth order drainages) and steeply cut banks.

Table 2
 Special-Status Species Records within 1 Mile of the Project Site

Scientific Name	Common Name	Special Status ¹	Habitat	Potential to Occur ²
<i>Anaxyrus californicus</i>	arroyo toad	Federally Endangered	Desert wash, riparian scrub, riparian woodland, south coast flowing waters, south coast standing waters	Moderate
<i>Astragalus douglasii</i> var. <i>perstrictus</i>	Jacumba milk-vetch	CRPR 1B.2	Chaparral, cismontane woodland, pinon and juniper woodlands, riparian scrub, valley & foothill grassland	Low
<i>Astragalus oocarpus</i>	San Diego milk-vetch	CRPR 1B.2	Chaparral, cismontane woodland	Low
<i>Brodiaea orcuttii</i>	Orcutt's brodiaea	CRPR 1B.1	Chaparral, cismontane woodland, closed-cone coniferous forest, meadow & seep, ultramafic, valley & foothill grassland, vernal pool, wetland	Low
<i>Calochortus dunnii</i>	Dunn's mariposa-lily	CRPR 1B.2	Chaparral, closed-cone coniferous forest, ultramafic, valley & foothill grassland	Low
<i>Emy marmorata</i>	western pond turtle	CDFW SSC	Aquatic, artificial flowing waters, Klamath/north coast flowing waters, Klamath/north coast standing waters, marsh & swamp, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, south coast flowing waters, south coast standing waters, wetland	Low
<i>Euphydryas editha quino</i>	Quino checkerspot butterfly	Federally Endangered	Chaparral, coastal scrub	Low
<i>Ericameria cuneata</i> var. <i>macrocephala</i>	Laguna Mountains goldenbush	CRPR 1B.3	Chaparral	Low
<i>Geraea viscida</i>	sticky geraea	CRPR 2B.3	Chaparral	Low
<i>Hesperocyparis forbesii</i>	Tecate cypress	CRPR 1B.1	Chaparral, closed-cone coniferous forest	Low
<i>Hulsea californica</i>	San Diego hulsea	CRPR 1B.3	Chaparral, lower montane coniferous forest, upper montane coniferous forest	Low
<i>Linanthus bellus</i>	desert beauty	CRPR 2B.1	Chaparral	Low
<i>Phrynosoma blainvillii</i>	coast horned lizard	CDFW SSC	Chaparral, cismontane woodland, coastal bluff scrub, coastal scrub, desert wash, pinon & juniper woodlands, riparian scrub, riparian woodland, valley & foothill grassland	Moderate
<i>Scutellaria bolanderi</i> ssp. <i>austromontana</i>	southern mountains skullcap	CRPR 1B.2	Chaparral, cismontane woodland, lower montane coniferous forest	Low
<i>Streptanthus campestris</i>	southern jewelflower	CRPR 1B.3	Chaparral, lower montane coniferous forest, pinon & juniper woodlands	Low
<i>Thermopsis californica</i> var. <i>semota</i>	velvety false lupine	CRPR 1B.2	Pine forests and meadow edges, on rocky slopes and outcrops, and along roadsides. 1000-1870 m.	Low

Source: CNDDB 2015¹⁰, USFWS¹¹

¹Special Status: CDFW – California Department of Fish and Wildlife, SSC – Species of Special Concern, CRPR – California Rare Plant Rank; 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere; 0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat); 0.2-Moderately threatened in California (20–80% occurrences threatened/moderate degree and immediacy of threat); 0.3-Not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known)

² Potential to Occur: Low = suitable habitat not present, unlikely to occur; Moderate = preferred habitat not present, but there is some potential for occurrence due to the presence of marginally suitable habitat and/or proximity to known/occupied habitat; High = Suitable habitat present and/or known presence

¹⁰ California Natural Diversity Database (CNDDB). 2015. *RareFind. Version 5.1.1.*

¹¹ U.S. Fish and Wildlife Service. 2015. *USFWS Species Occurrences. Carlsbad Fish and Wildlife Office. February.*



Mr. Marc Cass
March 16, 2016
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Jurisdictional Waters

The drainage running south to north along the eastern boundary of the site is potentially under the jurisdiction of USACE, San Diego Regional Water Quality Control Board (RWQCB), and CDFW. This drainage is an unnamed tributary to Pine Valley Creek and contains non-wetland waters. The ordinary high water mark of this drainage ranges from approximately 2 to 4 feet within the project area. The portion of this feature within the project area is 290 linear feet and includes 0.03 acre of potential waters of the U.S. and State and 0.10 acre of CDFW only waters of the state (Figure 2).

Recommendations

If removal of the existing trees in the project site is planned as part of project implementation, it is recommended that this removal occur outside the avian breeding season (February 1 through September 15) to avoid impacts to nesting birds.

Due to the potential presence of arroyo toads along the drainage on the eastern border of the site, avoidance of this area is recommended. If avoidance is not feasible, protocol-level arroyo toad surveys and/or mitigation for any loss of critical habitat may be required.

Under Section 404 of the Clean Water Act (CWA), USACE regulates the discharge of dredged or fill material into jurisdictional waters of the U.S. Under Section 401 of the CWA, the San Diego RWQCB has the regulatory authority to certify or deny that the proposed discharge complies with state water quality standards and water quality objectives. A CWA Section 404 permit from USACE and a CWA Section 401 Water Quality Certification from the San Diego RWQCB would be required for dredge or fill activities occurring within the drainage.

Please feel free to contact me at (619) 610-7646 if you have any questions regarding this letter.

Sincerely,

Sundeep Amin
Senior Biologist

Attachments: Figure 1 – Pine Valley Fire Station Regional/Vicinity Map
Figure 2 – Pine Valley Fire Station Survey Results
Figure 3 – Pine Valley Fire Station CNDDDB Records
Appendix A – Plant Species Detected during Surveys
Appendix B – Wildlife Species Detected during Surveys
Appendix C – Representative Photographs



Source: ESRI.

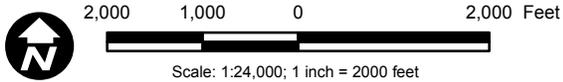


Figure 1
Pine Valley Fire Station
Regional/Vicinity Map

Pine Valley Fire Station

Path: P:_6044\60442874_PV_Fire_IS\900-CAD-GIS\920 GIS\922_Maps\Bio\Regional_Vicinity.mxd, 3/16/2016, Paul Moreno



Figure 2
Pine Valley Fire Station
Survey Results

Pine Valley Fire Station

Path: P:_6044\60442874_PV_Fire_IS\900-CAD-GIS\920 GIS\922_Maps\working\Vegetation.mxd, 3/16/2016, Paul_Moreno

APPENDIX A
Plant Species Detected in the
Pine Valley Fire Station Survey Area

Family	Common Name	Scientific Name
Adoxaceae	black elderberry	<i>Sambucus nigra</i>
Amaranthaceae	Palmer's amaranth	<i>Amaranthus palmeri</i>
Asteraceae	annual bursage	<i>Ambrosia acanthicarpa</i>
	big sagebrush	<i>Artemisia tridentata</i>
	Canada horseweed	<i>Erigeron canadensis</i>
	yarrow	<i>Achillea millefolium</i>
	western ragweed	<i>Ambrosia psilostachya</i>
Boraginaceae	imbricate phacelia	<i>Phacelia imbricata</i>
Brassicaceae	shortpod mustard	<i>Hirschfeldia incana</i> *
	wild radish	<i>Raphanus sativus</i> *
Chenopodiaceae	Russian thistle	<i>Salsola tragus</i> *
Euphorbiaceae	spotted spurge	<i>Euphorbia maculata</i> *
Fabaceae	black locust	<i>Robinia pseudoacacia</i> *
	black medic	<i>Medicago lupulina</i> *
Geraniaceae	redstem filaree	<i>Erodium cicutarium</i> *
	storksbill	<i>Erodium botrys</i> *
Malvaceae	cheeseweed	<i>Malva parviflora</i> *
Onagraceae	fringed willowherb	<i>Epilobium ciliatum</i>
Papaveraceae	California poppy	<i>Eschscholzia californica</i>
Poaceae	deergrass	<i>Muhlenbergia rigens</i>
	Bermudagrass	<i>Cynodon dactylon</i> *
	sorghum	<i>Sorghum bicolor</i> *
Polygonaceae	prostrate knotweed	<i>Polygonum aviculare</i> *
Portulacaceae	purslane	<i>Portulaca oleraceae</i> *
Solanaceae	Jimsonweed	<i>Datura wrightii</i>
Tamaricaceae	salt cedar	<i>Tamarix ramosissima</i> *
Zygophyllaceae	puncture vine	<i>Tribulus terrestris</i> *

* Nonnative species

APPENDIX B
Wildlife Species Detected in the Pine Valley Fire Station Survey Area

Common Name	Scientific Name
<i>Birds</i>	
Acorn woodpecker	<i>Melanerpes formicivorus</i>
Anna's hummingbird	<i>Calypte anna</i>
American crow	<i>Corvus brachyrhynchos</i>
Common Raven	<i>Corvus corax</i>
House finch	<i>Haemorhous mexicanus</i>
Northern Harrier ¹	<i>Circus cyaneus</i>
Orange-crowned warbler	<i>Oreothlypis celata</i>
Spotted towhee	<i>Pipilo maculatus</i>
White-crowned sparrow	<i>Zonotrichia leucophrys</i>
<i>Reptiles</i>	
Side-blotched lizard	<i>Uta stansburiana</i>
<i>Mammals</i>	
Desert cottontail rabbit	<i>Sylvilagus audubonii</i>

¹ State Special Animal

APPENDIX C
Representative Photographs



Photo Point 1 – Drainage facing upstream/south.



Photo Point 1 – Drainage facing downstream/north.



Photo Point 2 – Facing north showing downstream segment of drainage surrounded by Big Sagebrush Scrub.



Photo Point 3 – Facing northeast showing disturbed habitat.

APPENDIX C

GREENHOUSE GAS ANALYSIS

**GREENHOUSE GAS ANALYSIS
FOR THE
PINE VALLEY FIRE STATION PROJECT
SAN DIEGO, CALIFORNIA**

Prepared for:

County of San Diego
Department of General Services
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March 2016

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LIST OF ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ADT	average daily trips
AEP	Association of Environmental Professionals
APS	Alternative Planning Strategy
ARB	California Air Resources Board
CAA	Clean Air Act
CalEEMod	California Emissions Estimator Model
CH ₄	methane
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
EPA	United States Environmental Protection Agency
°F	degrees Fahrenheit
GHG	greenhouse gas emissions
GWP	global warming potential
HFC	hydrofluorocarbon
IPCC	Intergovernmental Panel on Climate Change
MPO	Metropolitan Planning Organization
MT	metric tons
MMT	million metric tons
N ₂ O	nitrous oxide
NF ₃	nitrogen trifluoride
PFC	perfluorocarbon
RTP	Regional Transportation Plan
SANDAG	San Diego Association of Governments
SDAPCD	San Diego Air Pollution Control District
SB	Senate Bill
SCS	Sustainable Communities Strategy
SF ₆	sulfur hexafluoride
SIP	State Implementation Plan
USDOT	United States Department of Transportation

SECTION 1 INTRODUCTION

The Pine Valley Fire Station project site is located in the unincorporated community of Pine Valley in southeastern San Diego County, north of Interstate 8, and east of State Route 79. The project includes the renovation of the existing volunteer Pine Valley Fire Station to renovate the existing 3-bay volunteer fire station with a new facility with 4 apparatus bays, firefighter sleeping quarters, dining area, recreation space, training facilities and office space for the County Fire Authority personnel. The fire station to be renovated is located at 28850 Old Highway 80 (APN 410-120-37), and an existing Fire Department property (APN 410-120-35) would also be renovated as a training facility.

This greenhouse gas (GHG) analysis was prepared to support the County of San Diego environmental review process and provide information regarding potential impacts to global climate change associated with the construction and operation of the project.

GHG emissions have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change. Global climate change also has the potential to result in sea level rise (resulting in flooding of low-lying areas), affect rainfall and snowfall (leading to changes in water supply and runoff), affect temperatures and habitats (affecting biological and agricultural resources), and result in many other adverse effects.

Legislation, regulations, and executive orders on the subject of climate change have established federal and statewide contexts and processes for developing an enforceable cap on GHG emissions. Given the nature of environmental consequences from GHGs and global climate change, the California Environmental Quality Act (CEQA) requires that lead agencies evaluate the cumulative impacts of GHGs, even relatively small additions, on a global basis.

The purpose of this report is to discuss global climate change and existing GHG emissions sources; summarize applicable federal, state, and local regulations; and analyze the impacts from construction and operation of the proposed development.

1.1 PROJECT DESCRIPTION

The project site is located at the foothills of the Laguna Mountains at the existing CAL-FIRE Pine Valley Fire Station 44 off Old Highway 80 on unincorporated land within the County of San Diego. The existing facility is 6,870 square feet. The Pine Valley Fire Station is currently an operational 3-bay volunteer fire station. This project proposes renovation of the existing fire

station building and training facility. The new fire station would have 4 apparatus bays, firefighter sleeping quarters, dining area, recreation space, training facilities and office space for the County Fire Authority personnel. This would improve the working environment for the County Fire Authority personnel, allowing them to have a renovated space for training activities and improves capacity to serve the public. The project would require two property acquisitions and two easements to accommodate facility expansion.

The surrounding land uses include Old Highway 80 to the south, Interstate 8 to the south, and acres of open space in the Cleveland National Forest. Adjacent to the project site include low-density residential and commercial developments. CAL-FIRE Descanso Fire Station 45 is located approximately 6.7 miles to the northwest of the Pine Valley Fire Station. Regional access is from Interstate 8, approximately 0.7 miles to the south and State Route 79 approximately 5 miles to the northwest.

The construction process would begin in March 2017 and be completed by July 2018. Two property acquisitions and two easement acquisitions would occur as part of the proposed project. Renovations included in the proposed project would increase the size of the existing facility. A new paved “apron” would be installed in front of the apparatus bay in order to facilitate access to and from Old Highway 80. The CFA-owned “Training Facility” site, which would also be renovated as part of the proposed project, is located to the east of the fire station, behind the existing post office building. The site encompasses approximately 0.5 acres and houses a barn and a modular structure that is surrounded by a concrete walkway.

SECTION 2 EXISTING CONDITIONS

2.1 SCIENTIFIC BASIS OF CLIMATE CHANGE

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. A portion of the solar radiation that enters the earth's atmosphere is absorbed by the earth's surface, and a smaller portion of this radiation is reflected back towards space. This infrared radiation (i.e., thermal heat) is absorbed by GHGs within the earth's atmosphere. As a result, infrared radiation released from the earth that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the "greenhouse effect," is responsible for maintaining a habitable climate on the earth.

GHGs are present in the atmosphere naturally, are released by natural and anthropogenic sources, and are formed from secondary reactions taking place in the atmosphere. Natural sources of GHGs include the respiration of humans, animals and plants, decomposition of organic matter, and evaporation from the oceans. Anthropogenic sources include the combustion of fossil fuels, waste treatment, and agricultural processes. The following are GHGs that are widely accepted as the principal contributors to human-induced global climate change:

- Carbon dioxide (CO₂)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur Hexafluoride (SF₆)
- Nitrogen Trifluoride (NF₃)

Emissions of CO₂ are byproducts of fossil fuel combustion. CH₄ is the main component of natural gas and is associated with agricultural practices and landfills. N₂O is a colorless GHG that results from industrial processes, vehicle emissions, and agricultural practices. HFCs are synthetic chemicals used as a substitute for chlorofluorocarbons in automobile air conditioners and refrigerants. PFCs are produced as a byproduct of various industrial processes associated with aluminum production and the manufacturing of semiconductors. SF₆ is an inorganic, odorless, colorless, nontoxic, nonflammable GHG used for insulation in electric power transmission and distribution equipment, and in semiconductor manufacturing. NF₃ is used in the

electronics industry during the manufacturing of consumer items, including photovoltaic solar panels and liquid-crystal-display (i.e., LCD) television screens.

Global warming potential (GWP) is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to CO₂. The GWP of a GHG is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time (i.e., lifetime) that the gas remains in the atmosphere (“atmospheric lifetime”). The reference gas for GWP is CO₂; therefore, CO₂ has a GWP of 1. The other main GHGs that have been attributed to human activity include CH₄, which has a GWP of 28, and N₂O, which has a GWP of 265 (IPCC 2013). For example, 1 ton of CH₄ has the same contribution to the greenhouse effect as approximately 28 tons of CO₂. GHGs with lower emissions rates than CO₂ may still contribute to climate change, because they are more effective at absorbing outgoing infrared radiation than CO₂ (i.e., high GWP). The concept of CO₂-equivalents (CO₂e) is used to account for the different GWP potentials of GHGs to absorb infrared radiation.

Although the exact lifetime of any particular GHG molecule is dependent on multiple variables, it is understood by scientists who study atmospheric chemistry that more CO₂ is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. GHG emissions related to human activities have been determined as “extremely likely” to be responsible (indicating 95% certainty) for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth’s atmosphere and oceans, with corresponding effects on global circulation patterns and climate (ARB 2014a). The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; however, no single project is expected to measurably contribute to a noticeable incremental change in the global average temperature, or to a global, local, or micro climate.

2.2 GHG EMISSION SOURCES

GHG emissions contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, electric utility, residential, commercial, and agricultural categories. Emissions of CO₂ are byproducts of fossil fuel combustion, and CH₄, a highly potent GHG, is the primary component in natural gas and is associated with agricultural practices and landfills. N₂O is also largely attributable to agricultural practices and soil management.

For purposes of accounting for and regulating GHG emissions, sources of GHG emissions are grouped into emission categories. The California Air Resources Board (ARB) identifies the following main GHG emission categories that account for most anthropogenic GHG emissions generated within California:

-
- *Transportation:* On-road motor vehicles, recreational vehicles, aviation, ships, and rail
 - *Electric Power:* Use and production of electrical energy
 - *Industrial:* Mainly stationary sources (e.g., boilers and engines) associated with process emissions
 - *Commercial and Residential:* Area sources, such as landscape maintenance equipment, fireplaces, and consumption of natural gas for space and water heating
 - *Agriculture:* Agricultural sources that include off-road farm equipment; irrigation pumps; crop residue burning (CO₂); and emissions from flooded soils, livestock waste, crop residue decomposition, and fertilizer volatilization (CH₄ and N₂O)
 - *High GWP:* Refrigerants for stationary and mobile-source air conditioning and refrigeration, electrical insulation (e.g., SF₆), and various consumer products that use pressurized containers
 - *Recycling and Waste:* Waste management facilities and landfills; primary emissions are CO₂ from combustion and CH₄ from landfills and wastewater treatment

California

ARB performs an annual GHG inventory for emissions and sinks of the six major GHGs. As shown in Figure 1, California produced 459 million metric tons of CO₂e in 2012. Combustion of fossil fuel in the transportation category was the single largest source of California's GHG emissions in 2013, accounting for 37 percent of total GHG emissions in the State. The transportation category was followed by the industrial category, which accounts for 23 percent of the State's total GHG emissions, and the electric power category (including in-State and out-of-State sources), which accounts for 20 percent of total GHG emissions in California, and (ARB 2015).

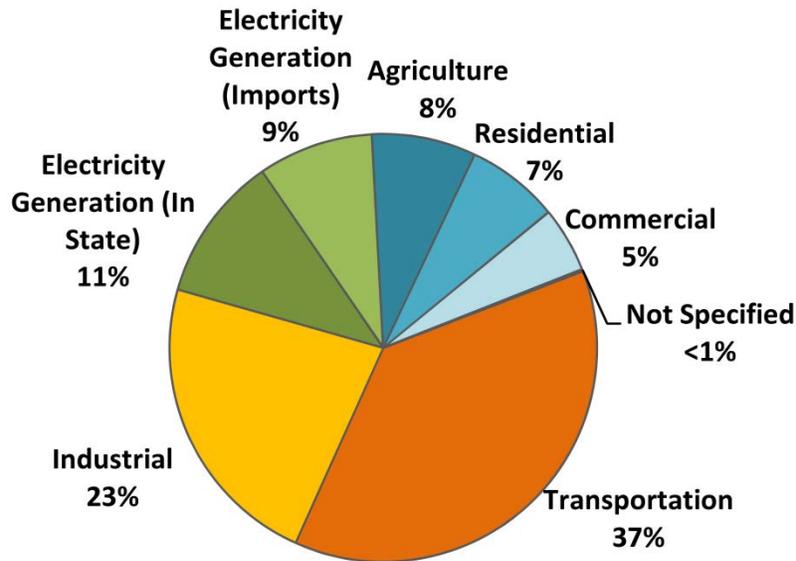


Figure 1. 2013 California GHG Emissions by Category

San Diego County

The University of San Diego School of Law, Energy Policy Initiative Center, prepared a GHG inventory for San Diego County in 2008. The inventory was updated in 2014 using the best available data and following the U.S. Community Protocol for Accounting and Reporting of GHG Emissions (University of San Diego 2014). Total GHG emissions in San Diego County in 2012 were estimated to be 32.9 MMT of CO₂e. This represents an 11% increase compared to 1990 emissions levels of 29.5 MMT CO₂e (University of San Diego 2014). Transportation is the largest emissions sector, accounting for approximately 14 MMT of CO₂e, or 41% of total emissions. Energy consumption, including electricity and natural gas use, is the next largest source of emissions, at 32% of the total.

2.3 GLOBAL CLIMATE TRENDS AND ASSOCIATED IMPACTS

Trends of Climate Change

The Intergovernmental Panel on Climate Change (IPCC) concluded that variations in natural phenomena, such as solar radiation and volcanoes, produced most of the warming of the earth from pre-industrial times to 1950. These variations in natural phenomena also had a small cooling effect. From 1950 to the present, increasing GHG concentrations resulting from human

activity, such as fossil fuel burning and deforestation, have been responsible for most of the observed temperature increase.

Global surface temperature has increased by approximately 1.53 degrees Fahrenheit (°F) over the last 140 years (IPCC 2013); however, the rate of increase in global average surface temperature has not been consistent. The last three decades have warmed at a much faster rate per decade (IPCC 2013).

During the same period when increased global warming has occurred, many other changes have occurred in other natural systems. Sea levels have risen; precipitation patterns throughout the world have shifted, with some areas becoming wetter and others drier; snowlines have risen in elevation, resulting in changes to the snowpack, runoff, and water storage; and numerous other conditions have been observed. Although it is difficult to prove a definitive cause-and-effect relationship between global warming and other observed changes to natural systems, there is a high level of confidence in the scientific community that these changes are a direct result of increased global temperatures caused by the increased presence of GHGs in the atmosphere (IPCC 2013).

Additional changes related to climate change can be expected by the year 2050 and on to the end of the century, including the following:

- California's mean temperature may rise by 2.7°F by 2050 and by 4.1°F to 8.6°F by the end of the century (CEC 2012). Temperatures in San Diego County may rise by 3.1°F to 5.8°F during that same period (CEC 2014a).
- A consistent rise in sea level has been recorded worldwide over the last 100 years. Rising average sea level over the past century has been attributed primarily to warming of the world's oceans, the related thermal expansion of ocean waters, and the addition of water to the world's oceans from the melting of land-based polar ice (IPCC 2007). Sea level rise is expected to continue, and the most recent climate science report, *Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future*, has estimated that sea levels along the U.S. Pacific coast will increase by up to 66 inches by 2100 (NRC 2012). The project area would not be subject to flooding as a result of climate-change-related sea level rise.
- Various California climate models provide mixed results regarding forecasted changes in total annual precipitation in the state through the end of this century. However, recent projections suggest that 30-year statewide average precipitation will decline by more than 10% (CEC 2012).

-
- Historically, extreme warm temperatures in the San Diego region have mostly occurred in July and August, but as climate warming continues, the occurrences of these events will likely begin in June and could continue to take place into September. All simulations indicate that hot daytime and nighttime temperatures (heat waves) will increase in frequency, magnitude, and duration (San Diego Foundation 2008).

SECTION 3 REGULATORY SETTING

3.1 FEDERAL STANDARDS

The Environmental Protection Agency (EPA) is the federal agency responsible for implementing the federal Clean Air Act (CAA). The Supreme Court of the United States ruled on April 2, 2007, that CO₂ is an air pollutant as defined under the CAA, and that EPA has the authority to regulate emissions of GHGs.

Greenhouse Gas Findings under the Federal Clean Air Act

On December 7, 2009, EPA signed two distinct findings regarding GHGs under section 202(a) of the CAA:

- **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases—CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆—in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

Although these findings did not themselves impose any requirements on industries or other entities, this action was a prerequisite to finalizing EPA's *Proposed Greenhouse Gas Emission Standards for Light-Duty Vehicles*. On May 7, 2010, the final *Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards* were published in the Federal Register. The emissions standards will require model year 2016 vehicles to meet an estimated combined average emissions level of 250 grams of CO₂ per mile, which is equivalent to 35.5 miles per gallon if the automobile industry were to meet this CO₂ level solely through fuel economy improvements.

On August 28, 2012, the U.S. Department of Transportation (USDOT) and EPA issued a joint Final Rulemaking requiring additional federal GHG and fuel economy standards for model year 2017 through 2025 passenger cars and light-duty trucks. The standards would require these

vehicles to meet an estimated combined average emissions level of 163 grams of CO₂ per mile in model year 2025, which is equivalent to 54.5 miles per gallon if the improvements were made solely through fuel efficiency.

In addition to the standards for light-duty vehicles, USDOT and EPA adopted complementary standards to reduce GHG emissions and improve the fuel efficiency of heavy-duty trucks and buses on September 15, 2011. These standards together form a comprehensive heavy-duty national program for all on-road vehicles rated at a gross vehicle weight at or above 8,500 pounds for model years 2014 through 2018. The standards will phase in with increasing stringency in each model year from 2014 to 2018. The EPA standards adopted for 2018 will represent an average per-vehicle reduction in GHG emissions of 17 percent for diesel vehicles and 12 percent for gasoline vehicles (EPA 2011). The President has directed the USDOT and EPA to develop and issue the next phase of heavy-duty vehicle fuel efficiency and GHG standards by March 2016.

Mandatory Greenhouse Gas Reporting Rule

On September 22, 2009, EPA published the Final Mandatory Greenhouse Gas Reporting Rule (Reporting Rule) in the Federal Register. The Reporting Rule requires reporting of GHG data and other relevant information from fossil fuel and industrial GHG suppliers, vehicle and engine manufacturers, and all facilities that would emit 25,000 MT or more of CO₂e per year. Facility owners are required to submit an annual report with detailed calculations of facility GHG emissions on March 31 for emissions from the previous calendar year. The Reporting Rule also mandates recordkeeping and administrative requirements to enable EPA to verify the annual GHG emissions reports.

Council on Environmental Quality Guidance

On December 18, 2014, the Council on Environmental Quality (CEQ) released revised draft guidance that supersedes the draft GHG and climate change guidance released by CEQ in February 2010. The revised draft guidance applies to all proposed Federal agency actions, including land and resource management actions. This guidance explains that agencies should consider both the potential effects of a proposed action on climate change, as indicated by its estimated GHG emissions, and the implications of climate change for the environmental effects of a proposed action (CEQ 2014). The guidance encourages agencies to draw from their experience and expertise to determine the appropriate level (broad, programmatic or project- or site-specific) and type (quantitative or qualitative) of analysis required to comply with NEPA. The guidance recommends that agencies consider 25,000 MT CO₂e on an annual basis as a

reference point below which a quantitative analysis of GHG emissions is not recommended unless it is easily accomplished based on available tools and data (CEQ 2014).

3.2 STATE STANDARDS

ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act.

Assembly Bill 1493

Assembly Bill (AB) 1493 requires ARB to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with model year 2009. In June 2009, the EPA Administrator granted a CAA waiver of preemption to California. This waiver allowed California to implement its own GHG emissions standards for motor vehicles beginning with model year 2009. California agencies worked with federal agencies to conduct joint rulemaking to reduce GHG emissions for passenger car model years 2017 to 2025.

Executive Order S-3-05

Executive Order S-3-05, signed in June 2005, proclaimed that California is vulnerable to the impacts of climate change. Executive Order S-3-05 declared that increased temperatures could reduce the Sierra Nevada's snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the executive order established total GHG emissions targets. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80% below the 1990 level by 2050.

Assembly Bill 32

In 2006, California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500, et seq.). AB 32 further details and puts into law the mid-term GHG reduction target established in Executive Order S-3-05: reduce GHG emissions to 1990 levels by 2020. AB 32 also identifies ARB as the state agency responsible for the design and implementation of emissions limits, regulations, and other measures to meet the target.

In December 2008, ARB adopted its *Climate Change Scoping Plan* (Scoping Plan), which contains the main strategies California will implement to achieve the required GHG reductions

required by AB 32 (ARB 2008). The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of California's GHG inventory. ARB further acknowledges that decisions about how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors.

ARB is required to update the Scoping Plan at least once every 5 years to evaluate progress and develop future inventories that may guide this process. ARB approved the first update to the Climate Change Scoping Plan: Building on the Framework in June 2014 (ARB 2014). The Scoping Plan update includes a status of the 2008 Scoping Plan measures and other federal, state, and local efforts to reduce GHG emissions in California, and potential actions to further reduce GHG emissions by 2020.

Executive Order S-1-07

Executive Order S-1-07, which was signed by then California governor Arnold Schwarzenegger in 2007, proclaims that the transportation sector is the main source of GHG emissions in California, at more than 40% of statewide emissions. Executive Order S-1-07 establishes a goal that the carbon intensity of transportation fuels sold in California should be reduced by a minimum of 10% by 2020. ARB adopted the low carbon fuel standard (LCFS) on April 23, 2009. ARB is currently considering re-adoption of an updated LCFS in 2015.

Senate Bill 97

Senate Bill (SB) 97 required the Governor's Office of Planning and Research to develop recommended amendments to the CEQA Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

Senate Bill 375

SB 375, signed in September 2008, aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or an Alternative Planning Strategy (APS), which will prescribe land use allocation in that MPO's Regional Transportation Plan (RTP). On September 23, 2010, ARB adopted regional GHG targets for passenger vehicles and light trucks for 2020 and 2035 for the 18 MPOs in California. If MPOs do not meet the GHG reduction targets, transportation projects would not be eligible for funding programmed after January 1, 2012.

This bill also extends the minimum time period for the Regional Housing Needs Allocation cycle from 5 years to 8 years for local governments located within an MPO that meet certain requirements. City or county land use policies (including general plans) are not required to be consistent with the RTP (and associated SCS or APS). However, new provisions of CEQA would incentivize qualified projects that are consistent with an approved SCS or APS, categorized as “transit priority projects.”

The San Diego Association of Governments’ (SANDAG) current GHG targets are per capita CO₂ emission reductions from passenger vehicles of 7 percent by 2020 and 13 percent by 2035 relative to 2005 levels. SANDAG adopted the RTP/SCS in 2011. ARB reviewed the adopted RTP/SCS and determined that, if implemented, it would achieve the reduction targets for the San Diego region in compliance with SB 375.

Executive Order B-30-15

In April 2015, Governor Edmund Brown issued an executive order establishing a statewide GHG reduction goal of 40 percent below 1990 levels by 2030. The emission reduction target acts as an interim goal between the AB 32 goal (i.e., achieve 1990 emission levels by 2020) and Governor Brown’s Executive Order S-03-05 goal of reducing statewide emissions 80 percent below 1990 levels by 2050. In addition, the executive order aligns California’s 2030 GHG reduction goal with the European Union’s reduction target (i.e., 40 percent below 1990 levels by 2030) that was adopted in October 2014.

3.3 LOCAL STANDARDS

ARB also acknowledges that local governments have broad influence and, in some cases, exclusive jurisdiction over activities that contribute to significant direct and indirect GHG emissions through their planning and permitting processes, local ordinances, outreach and education efforts, and municipal operations.

San Diego Air Pollution Control District

In San Diego County, the San Diego Air Pollution Control District (SDAPCD) is the agency responsible for protecting public health and welfare through the administration of federal and state air quality laws and policies. The SDAPCD has no regulations relative to GHG emissions.

County of San Diego

The County of San Diego is currently writing a Climate Action Plan (CAP), to outline specific activities the County will undertake to reduce GHG emissions in the unincorporated communities of the County. The CAP is anticipated to be complete in fall 2017. In the interim, the County of San Diego Department of Planning and Land Use published the *2015 GHG Guidance: Recommended Approach to Addressing Climate Change in CEQA Documents*. This document is used to prepare Climate Change sections of CEQA documents until the CAP is adopted.

SECTION 4

GUIDELINES FOR DETERMINING SIGNIFICANCE

4.1 THRESHOLDS OF SIGNIFICANCE

Under CEQA, Climate Change is not generally considered a direct impact, but would be analyzed as a potential cumulative impact. According to Appendix G of the CEQA Guidelines, a project's GHG emissions and its incremental contribution to global climate change would be considered significant if it would do either of the following:

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

The SDAPCD has neither quantitative thresholds nor specific guidelines for determining the significance of impacts under CEQA. The evaluation of project-level impacts and related emissions in the County of San Diego occur on a project-by-project basis. The County uses an interim threshold to determine whether a GHG analysis will be required for projects subject to CEQA analysis as stated in the *2015 GHG Guidance: Recommended Approach to Addressing Climate Change in CEQA Documents*.

This document provides guidance for the evaluation of GHG emissions from land use development projects. The guidance document recommends that the conservative, quantitative threshold of 900 MT CO₂e per year be used to evaluate the potential impact of a project's GHG emissions (County of San Diego 2015). If a project does not exceed 900 MT CO₂e per year, then the climate change impacts would be less than cumulatively significant (County of San Diego 2015). The screening threshold of 900 MT CO₂e per year is based on the California Air Pollution Control Officers Association white paper (CAPCOA 2010). The screening threshold would capture more than 90 percent of development projects, allowing for mitigation toward achieving the state's GHG reduction goals (CAPCOA 2010).

If the project exceeds 900 MT CO₂e per year, the County recommends that the significance be based on whether the project would impede the implementation of AB 32. To demonstrate that the project would not impede the implementation of AB 32, the project should demonstrate how future GHG emissions generated by the project would be reduced to approximately 16% below projected business-as-usual levels in 2020, which would achieve the equivalent GHG reduction as AB 32.

4.2 METHODOLOGY

Construction-related emissions associated with typical construction activities, such as site grading and construction of the buildings, were modeled using the California Emissions Estimator Model (CalEEMod), Version 2013.2.2. CalEEMod allows the user to enter project-specific construction information, such as types, number, and horsepower of construction equipment, and number and length of off-site motor vehicle trips. Construction-related exhaust emissions for the proposed project were estimated for construction worker commutes, haul trucks, and the use of off-road equipment. According to the County of San Diego, construction emissions may be amortized over the expected (long-term) operational life of a project, which can conservatively be estimated at 20 years, unless evidence is provided demonstrating a different project life (County of San Diego 2015).

After construction, day-to-day activities associated with operation of the project would generate emissions from a variety of sources. CalEEMod estimates operational GHG emissions associated with development of a project, including transportation, electricity, natural gas, solid waste, water and wastewater, and area-source emissions. Vehicle fleet characteristics, energy consumption, waste generation, and water use and wastewater generation was calculated using CalEEMod defaults.

Mobile-source emissions of GHGs would include vehicle trips made by County Fire Authority Personnel. However, the existing land uses include operation of vehicles and equipment for training and emergency response, as well as trips by workers and volunteers. The amount of activity for mobile sources is anticipated to remain similar to baseline emissions. Therefore, operational mobile source emissions were not estimated for the proposed project.

Area-source emissions would be associated with activities such as maintenance of landscaping and grounds. Natural gas combustion for space and water heating is also a direct area source of GHG emissions. Solid waste disposal and wastewater treatment from the facility would result in indirect, off-site emissions of GHGs.

Indirect emissions sources include emissions from electricity generation at off-site utility providers. Consumption of water would also result in indirect GHG emissions because of the electricity consumption associated with the off-site conveyance, distribution, and treatment of water and wastewater.

4.3 PROJECT IMPACTS

This section determines whether the potential impacts from project construction and operation would result in a significant impact. Significant impacts are defined below in relation to the thresholds of significance outlined in Section 4.1. If the project would exceed the applicable threshold and potentially result in a significant impact, mitigation measures are required to reduce the potential impact to below a level of significance. If the project would not exceed the applicable threshold, mitigation measures are not required, although recommended measures are provided below to help reduce GHG emissions. In addition, the project's design and purpose will be evaluated for its consistency with the applicable GHG reduction plan.

Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction-related GHG exhaust emissions would be generated by sources such as heavy-duty off-road equipment, trucks hauling materials to and from the site, and construction worker commutes. Given that exhaust emissions from the construction equipment fleet are expected to decrease over time as stricter standards take effect, construction emissions were estimated using the earliest calendar year when construction would begin to generate conservative estimates. If construction occurs in later years, advancements in engine technology, retrofits, and turnover in the equipment fleet are anticipated to result in lower levels of emissions.

CalEEMod was used to model construction emissions associated with the following construction phases: demolition, site preparation, asphalt paving, building construction, and architectural coatings. The CalEEMod input data, included in this report as Appendix A, list the assumed equipment to be used for project construction, the duration of each phase, and changes to default settings that were made for project-specific conditions.

Construction of the proposed project would be concentrated in two areas: the existing Fire Station and the Training Facility. Construction is anticipated to start in mid-March 2017, with demolition completed by May 2017 and additional construction activities ending in July 2018. The project is anticipated to be operational by the end of 2018.

The total emissions over the entire construction period for the project were estimated at approximately 227 MT CO₂e. When this total is amortized over the 20-year life of the project, annual construction emissions would be approximately 11 MT CO₂e per year. Operational GHG emissions were estimated for the proposed project in 2018. As shown in 1, the annual emissions

generated by the proposed project, including amortized construction emissions, were estimated at 148 MT CO₂e per year.

**Table 1
Estimated Annual GHG Emissions**

Emissions Source	Proposed Project (MT CO₂e)
Area	4
Energy	104
Mobile	N/A
Waste	7
Water	26
Operational Emissions	137
Amortized Construction Emissions	11
Total	148
Significance Threshold	900
Exceeds Threshold	NO

GHG = greenhouse gases; MT CO₂e = metric tons of carbon dioxide equivalent

Note: Totals may not add due to rounding.

Additional details available in Appendix A.

Source: Modeled by AECOM in 2016

As shown in Table 1, the operational emissions for the project were estimated at 148 MT CO₂e per year. This analysis conservatively assumes that all energy consumption, water use, and waste generation would increase as a result of the increase project square footage. This is considered conservative, since the project site includes an existing land use that would also generate emissions from these sources. Since the total GHG emissions for the project would not exceed 900 MT CO₂e per year, no additional analysis is required. Therefore, the project would not generate GHG emissions that may have a significant impact on the environment. This impact would be less than significant.

Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG?

ARB’s First Update to the Climate Change Scoping Plan: Building on the Framework (Scoping Plan Update) includes updates to measures and strategies established to meet California’s goal of reducing emissions to 1990 levels by 2020 and also reiterates the state’s role in the long-term goal established in Executive Order S-3-05, which is to reduce GHG emissions to 80% below 1990 levels by 2050. The Scoping Plan Update confirms that the state is on track to meet the 2020 emissions reduction target, but will need to maintain and build upon its existing programs, scale up deployment of clean technologies, and provide more low-carbon options to accelerate GHG emission reductions, especially after 2020, in order to meet the 2050 target. However, the plan does not recommend additional measures for meeting specific GHG emissions limits

beyond 2020. In general, the measures described in the plan are designed to meet emissions goals in 2020 and have not yet been adjusted to meet emission reduction targets after 2020.

The Scoping Plan did not directly create any regulatory requirements for construction of the proposed project. However, measures included in the Scoping Plan would indirectly address GHG emissions levels associated with construction activities, including the phasing-in of cleaner technology for diesel engine fleets (including construction equipment) and the development of a low-carbon fuel standard. The Scoping Plan also includes measures to address light-duty vehicle GHG standards, energy efficiency, green building strategy, recycling and waste, and water efficiency. The proposed project would comply with any mandate or standards set forth by the Scoping Plan update.

SANDAG plans are developed based on land use, population, and commercial/industrial growth projections from local jurisdictions in the region, including the County of San Diego. The County of San Diego General Plan was approved in 2011 and includes strategies that focus growth into mixed-use activity centers that are pedestrian-friendly and linked to an improved regional transit system. Projects consistent with the County of San Diego's General Plan would be considered to comply with the planning efforts in the SANDAG RTP/SCS, which was designed to achieve the region's fair-share GHG emission reductions pursuant to AB 32. Therefore, projects consistent with the County of San Diego's General Plan would also be consistent with the GHG emission reduction goals of the AB 32 Scoping Plan update. Since the proposed project is a redevelopment of existing land uses, vehicle trips and other project activities would be included in the assumptions for the General Plan, RTP/SCS, and Scoping Plan update.

Neither the County nor any other agency with jurisdiction over this project has adopted climate change or GHG reduction measures with which the project would conflict. Therefore, the proposed project would not conflict with any applicable plan, policy, or regulation for the purpose of reducing GHG emissions. This impact would be less than significant.

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SECTION 5 CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

The proposed project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. The proposed project would not conflict with any applicable plan, policy, or regulation for the purpose of reducing GHG emissions. This impact would be considered less than significant. Therefore, the proposed project would not result in any significant climate change impacts.

5.2 RECOMMENDATIONS

No mitigation measures or GHG emissions reduction measures are recommended.

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SECTION 6 REFERENCES

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United States Environmental Protection Agency (EPA)

- 2011 EPA and NHTSA Adopt First-Ever Program to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium- and Heavy-Duty Engines and Vehicles. Available at <http://www.epa.gov/nscep>. Accessed February 2016.

University of San Diego

- 2014 *GHG Emissions Inventory for the San Diego Region*. Energy Policy Initiatives Center (EPIC) at University of San Diego. April.

APPENDIX A

CALEEMOD MODELING DATA

Pine Valley Fire Station
San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government Office Building	12.87	1000sqft	0.30	12,865.00	0
Government Office Building	4.16	1000sqft	0.10	4,160.00	0
Parking Lot	3.50	1000sqft	0.08	3,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2018
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land uses consistent with the project description...4,160 sqft training facility + new storage area, 12,865 sqft fire station, estimated parking area

Construction Phase - Construction phase dates estimated based off project timeline.

Off-road Equipment -

Demolition - Determined by site plan

Grading - Acreage conservatively based on total project site

Vehicle Trips - Consistent with the traffic analysis and the existing land use, no increase to trips is anticipated.

Energy Use -

Mobile Land Use Mitigation -

Trips and VMT -

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	43.00
tblConstructionPhase	NumDays	100.00	282.00
tblConstructionPhase	NumDays	10.00	56.00
tblConstructionPhase	NumDays	2.00	11.00
tblConstructionPhase	NumDays	5.00	23.00
tblConstructionPhase	NumDays	1.00	11.00
tblConstructionPhase	PhaseEndDate	8/31/2018	5/31/2018
tblConstructionPhase	PhaseStartDate	8/1/2018	5/1/2018
tblGrading	AcresOfGrading	0.00	3.27
tblGrading	AcresOfGrading	5.50	3.27
tblLandUse	LandUseSquareFeet	12,870.00	12,865.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblVehicleTrips	WD_TR	68.93	0.00

2.0 Emissions Summary

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	0.1000	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.7000e-004	3.7000e-004	0.0000	0.0000	3.9000e-004
Energy	1.9300e-003	0.0176	0.0147	1.1000e-004		1.3300e-003	1.3300e-003		1.3300e-003	1.3300e-003	0.0000	103.5159	103.5159	3.7600e-003	1.0500e-003	103.9214
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	3.2154	0.0000	3.2154	0.1900	0.0000	7.2059
Water						0.0000	0.0000		0.0000	0.0000	1.0733	21.9255	22.9988	0.1111	2.7900e-003	26.1959
Total	0.1020	0.0176	0.0149	1.1000e-004	0.0000	1.3300e-003	1.3300e-003	0.0000	1.3300e-003	1.3300e-003	4.2887	125.4417	129.7304	0.3049	3.8400e-003	137.3236

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	0.1000	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.7000e-004	3.7000e-004	0.0000	0.0000	3.9000e-004
Energy	1.9300e-003	0.0176	0.0147	1.1000e-004		1.3300e-003	1.3300e-003		1.3300e-003	1.3300e-003	0.0000	103.5159	103.5159	3.7600e-003	1.0500e-003	103.9214
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	3.2154	0.0000	3.2154	0.1900	0.0000	7.2059
Water						0.0000	0.0000		0.0000	0.0000	1.0733	21.9255	22.9988	0.1111	2.7800e-003	26.1942
Total	0.1020	0.0176	0.0149	1.1000e-004	0.0000	1.3300e-003	1.3300e-003	0.0000	1.3300e-003	1.3300e-003	4.2887	125.4417	129.7304	0.3049	3.8300e-003	137.3219

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.26	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	3/15/2017	5/31/2017	5	56	
2	Site Preparation	Site Preparation	6/1/2017	6/15/2017	5	11	
3	Grading	Grading	6/16/2017	6/30/2017	5	11	
4	Building Construction	Building Construction	7/1/2017	7/31/2018	5	282	
5	Paving	Paving	5/1/2018	5/31/2018	5	23	
6	Architectural Coating	Architectural Coating	6/1/2018	7/31/2018	5	43	

Acres of Grading (Site Preparation Phase): 3.27

Acres of Grading (Grading Phase): 3.27

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 25,695; Non-Residential Outdoor: 8,565 (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	1	1.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	31.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	7.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

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					
Fugitive Dust					3.4200e-003	0.0000	3.4200e-003	5.2000e-004	0.0000	5.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0337	0.2933	0.2403	3.4000e-004		0.0203	0.0203		0.0194	0.0194	0.0000	30.0702	30.0702	5.9300e-003	0.0000	30.1947
Total	0.0337	0.2933	0.2403	3.4000e-004	3.4200e-003	0.0203	0.0238	5.2000e-004	0.0194	0.0199	0.0000	30.0702	30.0702	5.9300e-003	0.0000	30.1947

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	3.0000e-004	4.0100e-003	3.5500e-003	1.0000e-005	2.6000e-004	5.0000e-005	3.2000e-004	7.0000e-005	5.0000e-005	1.2000e-004	0.0000	1.0407	1.0407	1.0000e-005	0.0000	1.0409
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.7000e-004	1.1500e-003	0.0109	3.0000e-005	2.2500e-003	2.0000e-005	2.2600e-003	6.0000e-004	2.0000e-005	6.1000e-004	0.0000	2.0116	2.0116	1.0000e-004	0.0000	2.0138
Total	1.1700e-003	5.1600e-003	0.0145	4.0000e-005	2.5100e-003	7.0000e-005	2.5800e-003	6.7000e-004	7.0000e-005	7.3000e-004	0.0000	3.0523	3.0523	1.1000e-004	0.0000	3.0546

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					1.5400e-003	0.0000	1.5400e-003	2.3000e-004	0.0000	2.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0337	0.2933	0.2403	3.4000e-004		0.0203	0.0203		0.0194	0.0194	0.0000	30.0702	30.0702	5.9300e-003	0.0000	30.1946
Total	0.0337	0.2933	0.2403	3.4000e-004	1.5400e-003	0.0203	0.0219	2.3000e-004	0.0194	0.0196	0.0000	30.0702	30.0702	5.9300e-003	0.0000	30.1946

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	3.0000e-004	4.0100e-003	3.5500e-003	1.0000e-005	2.6000e-004	5.0000e-005	3.2000e-004	7.0000e-005	5.0000e-005	1.2000e-004	0.0000	1.0407	1.0407	1.0000e-005	0.0000	1.0409
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.7000e-004	1.1500e-003	0.0109	3.0000e-005	2.2500e-003	2.0000e-005	2.2600e-003	6.0000e-004	2.0000e-005	6.1000e-004	0.0000	2.0116	2.0116	1.0000e-004	0.0000	2.0138
Total	1.1700e-003	5.1600e-003	0.0145	4.0000e-005	2.5100e-003	7.0000e-005	2.5800e-003	6.7000e-004	7.0000e-005	7.3000e-004	0.0000	3.0523	3.0523	1.1000e-004	0.0000	3.0546

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					1.7300e-003	0.0000	1.7300e-003	1.9000e-004	0.0000	1.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.9800e-003	0.0698	0.0398	5.0000e-005		4.2400e-003	4.2400e-003		3.9000e-003	3.9000e-003	0.0000	4.7693	4.7693	1.4600e-003	0.0000	4.8000
Total	6.9800e-003	0.0698	0.0398	5.0000e-005	1.7300e-003	4.2400e-003	5.9700e-003	1.9000e-004	3.9000e-003	4.0900e-003	0.0000	4.7693	4.7693	1.4600e-003	0.0000	4.8000

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	1.1000e-004	1.0700e-003	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1976	0.1976	1.0000e-005	0.0000	0.1978	
Total	9.0000e-005	1.1000e-004	1.0700e-003	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1976	0.1976	1.0000e-005	0.0000	0.1978	

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					7.8000e-004	0.0000	7.8000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Off-Road	6.9800e-003	0.0698	0.0398	5.0000e-005		4.2400e-003	4.2400e-003		3.9000e-003	3.9000e-003	0.0000	4.7693	4.7693	1.4600e-003	0.0000	4.8000	
Total	6.9800e-003	0.0698	0.0398	5.0000e-005	7.8000e-004	4.2400e-003	5.0200e-003	8.0000e-005	3.9000e-003	3.9800e-003	0.0000	4.7693	4.7693	1.4600e-003	0.0000	4.8000	

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	1.1000e-004	1.0700e-003	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1976	0.1976	1.0000e-005	0.0000	0.1978
Total	9.0000e-005	1.1000e-004	1.0700e-003	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1976	0.1976	1.0000e-005	0.0000	0.1978

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					5.8700e-003	0.0000	5.8700e-003	2.4600e-003	0.0000	2.4600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6300e-003	0.0576	0.0472	7.0000e-005		4.0000e-003	4.0000e-003		3.8100e-003	3.8100e-003	0.0000	5.9067	5.9067	1.1600e-003	0.0000	5.9311
Total	6.6300e-003	0.0576	0.0472	7.0000e-005	5.8700e-003	4.0000e-003	9.8700e-003	2.4600e-003	3.8100e-003	6.2700e-003	0.0000	5.9067	5.9067	1.1600e-003	0.0000	5.9311

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	2.3000e-004	2.1400e-003	1.0000e-005	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3951	0.3951	2.0000e-005	0.0000	0.3956
Total	1.7000e-004	2.3000e-004	2.1400e-003	1.0000e-005	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3951	0.3951	2.0000e-005	0.0000	0.3956

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					2.6400e-003	0.0000	2.6400e-003	1.1100e-003	0.0000	1.1100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6300e-003	0.0576	0.0472	7.0000e-005		4.0000e-003	4.0000e-003		3.8100e-003	3.8100e-003	0.0000	5.9067	5.9067	1.1600e-003	0.0000	5.9311
Total	6.6300e-003	0.0576	0.0472	7.0000e-005	2.6400e-003	4.0000e-003	6.6400e-003	1.1100e-003	3.8100e-003	4.9200e-003	0.0000	5.9067	5.9067	1.1600e-003	0.0000	5.9311

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	2.3000e-004	2.1400e-003	1.0000e-005	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3951	0.3951	2.0000e-005	0.0000	0.3956
Total	1.7000e-004	2.3000e-004	2.1400e-003	1.0000e-005	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3951	0.3951	2.0000e-005	0.0000	0.3956

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	0.0828	0.8238	0.5226	7.4000e-004		0.0556	0.0556		0.0512	0.0512	0.0000	68.3741	68.3741	0.0210	0.0000	68.8140
Total	0.0828	0.8238	0.5226	7.4000e-004		0.0556	0.0556		0.0512	0.0512	0.0000	68.3741	68.3741	0.0210	0.0000	68.8140

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0300e-003	0.0170	0.0252	5.0000e-005	1.2700e-003	2.4000e-004	1.5100e-003	3.6000e-004	2.2000e-004	5.9000e-004	0.0000	4.1360	4.1360	3.0000e-005	0.0000	4.1366
Worker	1.4100e-003	1.8700e-003	0.0177	4.0000e-005	3.6500e-003	3.0000e-005	3.6800e-003	9.7000e-004	3.0000e-005	9.9000e-004	0.0000	3.2689	3.2689	1.7000e-004	0.0000	3.2724
Total	3.4400e-003	0.0189	0.0429	9.0000e-005	4.9200e-003	2.7000e-004	5.1900e-003	1.3300e-003	2.5000e-004	1.5800e-003	0.0000	7.4048	7.4048	2.0000e-004	0.0000	7.4090

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	0.0828	0.8238	0.5226	7.4000e-004		0.0556	0.0556		0.0512	0.0512	0.0000	68.3740	68.3740	0.0210	0.0000	68.8139
Total	0.0828	0.8238	0.5226	7.4000e-004		0.0556	0.0556		0.0512	0.0512	0.0000	68.3740	68.3740	0.0210	0.0000	68.8139

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0300e-003	0.0170	0.0252	5.0000e-005	1.2700e-003	2.4000e-004	1.5100e-003	3.6000e-004	2.2000e-004	5.9000e-004	0.0000	4.1360	4.1360	3.0000e-005	0.0000	4.1366
Worker	1.4100e-003	1.8700e-003	0.0177	4.0000e-005	3.6500e-003	3.0000e-005	3.6800e-003	9.7000e-004	3.0000e-005	9.9000e-004	0.0000	3.2689	3.2689	1.7000e-004	0.0000	3.2724
Total	3.4400e-003	0.0189	0.0429	9.0000e-005	4.9200e-003	2.7000e-004	5.1900e-003	1.3300e-003	2.5000e-004	1.5800e-003	0.0000	7.4048	7.4048	2.0000e-004	0.0000	7.4090

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	0.0820	0.8328	0.5870	8.6000e-004		0.0536	0.0536		0.0493	0.0493	0.0000	78.6156	78.6156	0.0245	0.0000	79.1296
Total	0.0820	0.8328	0.5870	8.6000e-004		0.0536	0.0536		0.0493	0.0493	0.0000	78.6156	78.6156	0.0245	0.0000	79.1296

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2300e-003	0.0180	0.0282	5.0000e-005	1.4800e-003	2.6000e-004	1.7500e-003	4.2000e-004	2.4000e-004	6.7000e-004	0.0000	4.7528	4.7528	4.0000e-005	0.0000	0.0000	4.7536
Worker	1.5000e-003	2.0000e-003	0.0187	5.0000e-005	4.2700e-003	3.0000e-005	4.3000e-003	1.1300e-003	3.0000e-005	1.1600e-003	0.0000	3.6786	3.6786	1.8000e-004	0.0000	0.0000	3.6824
Total	3.7300e-003	0.0200	0.0469	1.0000e-004	5.7500e-003	2.9000e-004	6.0500e-003	1.5500e-003	2.7000e-004	1.8300e-003	0.0000	8.4314	8.4314	2.2000e-004	0.0000	0.0000	8.4359

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	0.0820	0.8328	0.5870	8.6000e-004		0.0536	0.0536		0.0493	0.0493	0.0000	78.6155	78.6155	0.0245	0.0000	79.1295
Total	0.0820	0.8328	0.5870	8.6000e-004		0.0536	0.0536		0.0493	0.0493	0.0000	78.6155	78.6155	0.0245	0.0000	79.1295

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2300e-003	0.0180	0.0282	5.0000e-005	1.4800e-003	2.6000e-004	1.7500e-003	4.2000e-004	2.4000e-004	6.7000e-004	0.0000	4.7528	4.7528	4.0000e-005	0.0000	4.7536
Worker	1.5000e-003	2.0000e-003	0.0187	5.0000e-005	4.2700e-003	3.0000e-005	4.3000e-003	1.1300e-003	3.0000e-005	1.1600e-003	0.0000	3.6786	3.6786	1.8000e-004	0.0000	3.6824
Total	3.7300e-003	0.0200	0.0469	1.0000e-004	5.7500e-003	2.9000e-004	6.0500e-003	1.5500e-003	2.7000e-004	1.8300e-003	0.0000	8.4314	8.4314	2.2000e-004	0.0000	8.4359

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	0.0105	0.0992	0.0819	1.3000e-004		5.8100e-003	5.8100e-003		5.3800e-003	5.3800e-003	0.0000	10.9982	10.9982	3.1000e-003	0.0000	11.0632
Paving	1.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0106	0.0992	0.0819	1.3000e-004		5.8100e-003	5.8100e-003		5.3800e-003	5.3800e-003	0.0000	10.9982	10.9982	3.1000e-003	0.0000	11.0632

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	7.8000e-004	7.2900e-003	2.0000e-005	1.6600e-003	1.0000e-005	1.6700e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4313	1.4313	7.0000e-005	0.0000	1.4328
Total	5.8000e-004	7.8000e-004	7.2900e-003	2.0000e-005	1.6600e-003	1.0000e-005	1.6700e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4313	1.4313	7.0000e-005	0.0000	1.4328

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	0.0105	0.0992	0.0819	1.3000e-004		5.8100e-003	5.8100e-003		5.3800e-003	5.3800e-003	0.0000	10.9982	10.9982	3.1000e-003	0.0000	11.0632
Paving	1.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0106	0.0992	0.0819	1.3000e-004		5.8100e-003	5.8100e-003		5.3800e-003	5.3800e-003	0.0000	10.9982	10.9982	3.1000e-003	0.0000	11.0632

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	7.8000e-004	7.2900e-003	2.0000e-005	1.6600e-003	1.0000e-005	1.6700e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4313	1.4313	7.0000e-005	0.0000	1.4328
Total	5.8000e-004	7.8000e-004	7.2900e-003	2.0000e-005	1.6600e-003	1.0000e-005	1.6700e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4313	1.4313	7.0000e-005	0.0000	1.4328

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	0.1985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.4200e-003	0.0431	0.0399	6.0000e-005		3.2400e-003	3.2400e-003		3.2400e-003	3.2400e-003	0.0000	5.4895	5.4895	5.2000e-004	0.0000	5.5005
Total	0.2049	0.0431	0.0399	6.0000e-005		3.2400e-003	3.2400e-003		3.2400e-003	3.2400e-003	0.0000	5.4895	5.4895	5.2000e-004	0.0000	5.5005

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	8.0000e-005	7.6000e-004	0.0000	1.7000e-004	0.0000	1.7000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1487	0.1487	1.0000e-005	0.0000	0.1488
Total	6.0000e-005	8.0000e-005	7.6000e-004	0.0000	1.7000e-004	0.0000	1.7000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1487	0.1487	1.0000e-005	0.0000	0.1488

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1985					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.4200e-003	0.0431	0.0399	6.0000e-005		3.2400e-003	3.2400e-003		3.2400e-003	3.2400e-003	0.0000	5.4895	5.4895	5.2000e-004	0.0000	5.5005
Total	0.2049	0.0431	0.0399	6.0000e-005		3.2400e-003	3.2400e-003		3.2400e-003	3.2400e-003	0.0000	5.4895	5.4895	5.2000e-004	0.0000	5.5005

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Government Office Building	0.00	0.00	0.00		
Government Office Building	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Government Office Building	9.50	7.30	7.30	33.00	62.00	5.00	50	34	16
Government Office Building	9.50	7.30	7.30	33.00	62.00	5.00	50	34	16
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
0.511818	0.073499	0.191840	0.131575	0.036332	0.005186	0.012677	0.022513	0.001864	0.002072	0.006564	0.000601	0.003458

5.0 Energy Detail

5.1 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	84.4097	84.4097	3.4000e-003	7.0000e-004	84.6990
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	84.4097	84.4097	3.4000e-003	7.0000e-004	84.6990
NaturalGas Mitigated	1.9300e-003	0.0176	0.0147	1.1000e-004		1.3300e-003	1.3300e-003		1.3300e-003	1.3300e-003	0.0000	19.1062	19.1062	3.7000e-004	3.5000e-004	19.2224
NaturalGas Unmitigated	1.9300e-003	0.0176	0.0147	1.1000e-004		1.3300e-003	1.3300e-003		1.3300e-003	1.3300e-003	0.0000	19.1062	19.1062	3.7000e-004	3.5000e-004	19.2224

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					
Government Office Building	87484.8	4.7000e-004	4.2900e-003	3.6000e-003	3.0000e-005		3.3000e-004	3.3000e-004		3.3000e-004	3.3000e-004	0.0000	4.6685	4.6685	9.0000e-005	9.0000e-005	4.6969
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Government Office Building	270551	1.4600e-003	0.0133	0.0111	8.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	14.4376	14.4376	2.8000e-004	2.6000e-004	14.5255
Total		1.9300e-003	0.0176	0.0147	1.1000e-004		1.3400e-003	1.3400e-003		1.3400e-003	1.3400e-003	0.0000	19.1062	19.1062	3.7000e-004	3.5000e-004	19.2224

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		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Government Office Building	270551	1.4600e-003	0.0133	0.0111	8.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	14.4376	14.4376	2.8000e-004	2.6000e-004	14.5255	
Government Office Building	87484.8	4.7000e-004	4.2900e-003	3.6000e-003	3.0000e-005		3.3000e-004	3.3000e-004		3.3000e-004	3.3000e-004	0.0000	4.6685	4.6685	9.0000e-005	9.0000e-005	4.6969	
Total		1.9300e-003	0.0176	0.0147	1.1000e-004		1.3400e-003	1.3400e-003		1.3400e-003	1.3400e-003	0.0000	19.1062	19.1062	3.7000e-004	3.5000e-004	19.2224	

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Government Office Building	192846	63.0239	2.5400e-003	5.2000e-004	63.2399
Government Office Building	62358.4	20.3793	8.2000e-004	1.7000e-004	20.4491
Parking Lot	3080	1.0066	4.0000e-005	1.0000e-005	1.0100
Total		84.4097	3.4000e-003	7.0000e-004	84.6990

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Government Office Building	192846	63.0239	2.5400e-003	5.2000e-004	63.2399
Government Office Building	62358.4	20.3793	8.2000e-004	1.7000e-004	20.4491
Parking Lot	3080	1.0066	4.0000e-005	1.0000e-005	1.0100
Total		84.4097	3.4000e-003	7.0000e-004	84.6990

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	0.1000	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.7000e-004	3.7000e-004	0.0000	0.0000	3.9000e-004
Unmitigated	0.1000	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.7000e-004	3.7000e-004	0.0000	0.0000	3.9000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0199					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0802					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.7000e-004	3.7000e-004	0.0000	0.0000	3.9000e-004
Total	0.1000	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.7000e-004	3.7000e-004	0.0000	0.0000	3.9000e-004

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	0.0199					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0802					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.7000e-004	3.7000e-004	0.0000	0.0000	3.9000e-004
Total	0.1000	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.7000e-004	3.7000e-004	0.0000	0.0000	3.9000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	22.9988	0.1111	2.7800e-003	26.1942
Unmitigated	22.9988	0.1111	2.7900e-003	26.1959

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Government Office Building	3.38317 / 2.07356	22.9988	0.1111	2.7900e-003	26.1959
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		22.9988	0.1111	2.7900e-003	26.1959

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Government Office Building	3.38317 / 2.07356	22.9988	0.1111	2.7800e-003	26.1942
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		22.9988	0.1111	2.7800e-003	26.1942

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	3.2154	0.1900	0.0000	7.2059
Unmitigated	3.2154	0.1900	0.0000	7.2059

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Government Office Building	15.84	3.2154	0.1900	0.0000	7.2059
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		3.2154	0.1900	0.0000	7.2059

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Government Office Building	15.84	3.2154	0.1900	0.0000	7.2059
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		3.2154	0.1900	0.0000	7.2059

9.0 Operational Offroad

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

APPENDIX D

**DRAFT STORMWATER QUALITY
MANAGEMENT PLAN**

County of San Diego PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

PINE VALLEY FIRE STATION
[INSERT RECORD ID (PERMIT) NUMBERS]

28856 OLD HIGHWAY 80
PINE VALLEY, CA 91027

ASSESSOR'S PARCEL NUMBER(S):
4101203400, 4101203500

ENGINEER OF WORK:



KERI GANNON, P.E.
LICENSE # C68877 - EXPIRATION DATE: 9/30/2017

PREPARED FOR:

COUNTY OF SAN DIEGO
5560 OVERLAND AVENUE SUITE 410
SAN DIEGO, CA 92123
858-694-2369

PDP SWQMP PREPARED BY:

AECOM
401 WEST A STREET
SUITE 1200
SAN DIEGO, CA 92101
619-610-7760

DATE OF SWQMP:
February 3, 2016

PLANS PREPARED BY:
AECOM
401 WEST A STREET
SUITE 1200
SAN DIEGO, CA 92101

SWQMP APPROVED BY:

APPROVAL DATE:



Pine Valley Fire Station PDP SWQMP

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ATTACHMENTS

- Attachment 1: Backup for PDP Pollutant Control BMPs
 - Attachment 1a: Storm Water Pollutant Control Worksheet Calculations
 - Attachment 1b: DMA Exhibit
 - Attachment 1c: Individual Structural BMP DMA Mapbook
- Attachment 2: Backup for PDP Hydromodification Control Measures
 - Attachment 2a: Flow Control Facility Design
 - Attachment 2b: Hydromodification Management Exhibit
 - Attachment 2c: Management of Critical Coarse Sediment Yield Areas
 - Attachment 2d: Geomorphic Assessment of Receiving Channels (optional)
 - Attachment 2e: Vector Control Plan (if applicable)
- Attachment 3: Structural BMP Maintenance Plan
 - Attachment 3a: Structural BMP Maintenance Thresholds and Actions
 - Attachment 3b: Draft Maintenance Agreements / Notifications(when applicable)
- Attachment 4: County of San Diego PDP Structural BMP Verification for DPW Permitted Land Development Projects
- Attachment 5: Copy of Plan Sheets Showing Permanent Storm Water BMPs
- Attachment 6: Copy of Project's Drainage Report
- Attachment 7: Copy of Project's Geotechnical and Groundwater Investigation Report

ACRONYMS

ACP	Alternative Compliance Project
APN	Assessor's Parcel Number
BMP	Best Management Practice
BMP DM	Best Management Practice Design Manual
HMP	Hydromodification Management Plan
HSG	Hydrologic Soil Group
MS4	Municipal Separate Storm Sewer System
N/A	Not Applicable
NRCS	Natural Resources Conservation Service
PDCI	Private Development Construction Inspection Section
PDP	Priority Development Project
PDS	Planning and Development Services
PE	Professional Engineer
RPO	Resource Protection Ordinance
SC	Source Control
SD	Site Design
SDRWQCB	San Diego Regional Water Quality Control Board
SIC	Standard Industrial Classification
SWQMP	Storm Water Quality Management Plan
WMAA	Watershed Management Area Analysis
WPO	Watershed Protection Ordinance
WQIP	Water Quality Improvement Plan

PDP SWQMP PREPARER'S CERTIFICATION PAGE

Project Name: PINE VALLEY FIRE STATION

Permit Application Number: [Insert Permit Application Number]

PREPARER'S CERTIFICATION

I hereby declare that I am the Engineer in Responsible Charge of design of storm water best management practices (BMPs) for this project, and that I have exercised responsible charge over the design of the BMPs as defined in Section 6703 of the Business and Professions Code, and that the design is consistent with the PDP requirements of the County of San Diego BMP Design Manual, which is a design manual for compliance with local County of San Diego Watershed Protection Ordinance (Sections 67.801 et seq.) and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2013-0001 as amended by R9-2015-0001 and R9-2015-0100) requirements for storm water management.

I have read and understand that the County of San Diego has adopted minimum requirements for managing urban runoff, including storm water, from land development activities, as described in the BMP Design Manual. I certify that this PDP SWQMP has been completed to the best of my ability and accurately reflects the project being proposed and the applicable BMPs proposed to minimize the potentially negative impacts of this project's land development activities on water quality. I understand and acknowledge that the plan check review of this PDP SWQMP by County staff is confined to a review and does not relieve me, as the Engineer in Responsible Charge of design of storm water BMPs for this project, of my responsibilities for project design.

Engineer of Work's Signature, PE Number & Expiration Date

Print Name

Company

Date

Engineer's Seal:

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SUBMITTAL RECORD

Use this Table to keep a record of submittals of this PDP SWQMP. Each time the PDP SWQMP is re-submitted, provide the date and status of the project. In column 4 summarize the changes that have been made or indicate if response to plancheck comments is included. When applicable, insert response to plancheck comments behind this page.

Preliminary Design / Planning / CEQA

Submittal Number	Date	Summary of Changes
1	2/1/2016	Initial Submittal
2		
3		
4		

Final Design

Submittal Number	Date	Summary of Changes
1		Initial Submittal
2		
3		
4		

Plan Changes

Submittal Number	Date	Summary of Changes
1		Initial Submittal
2		
3		
4		

PROJECT VICINITY MAP

Project Name: **PINE VALLEY FIRE STATION**

Record ID: **[Insert Record ID or Permit Application Number]**

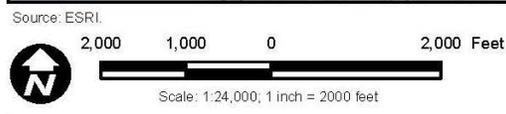
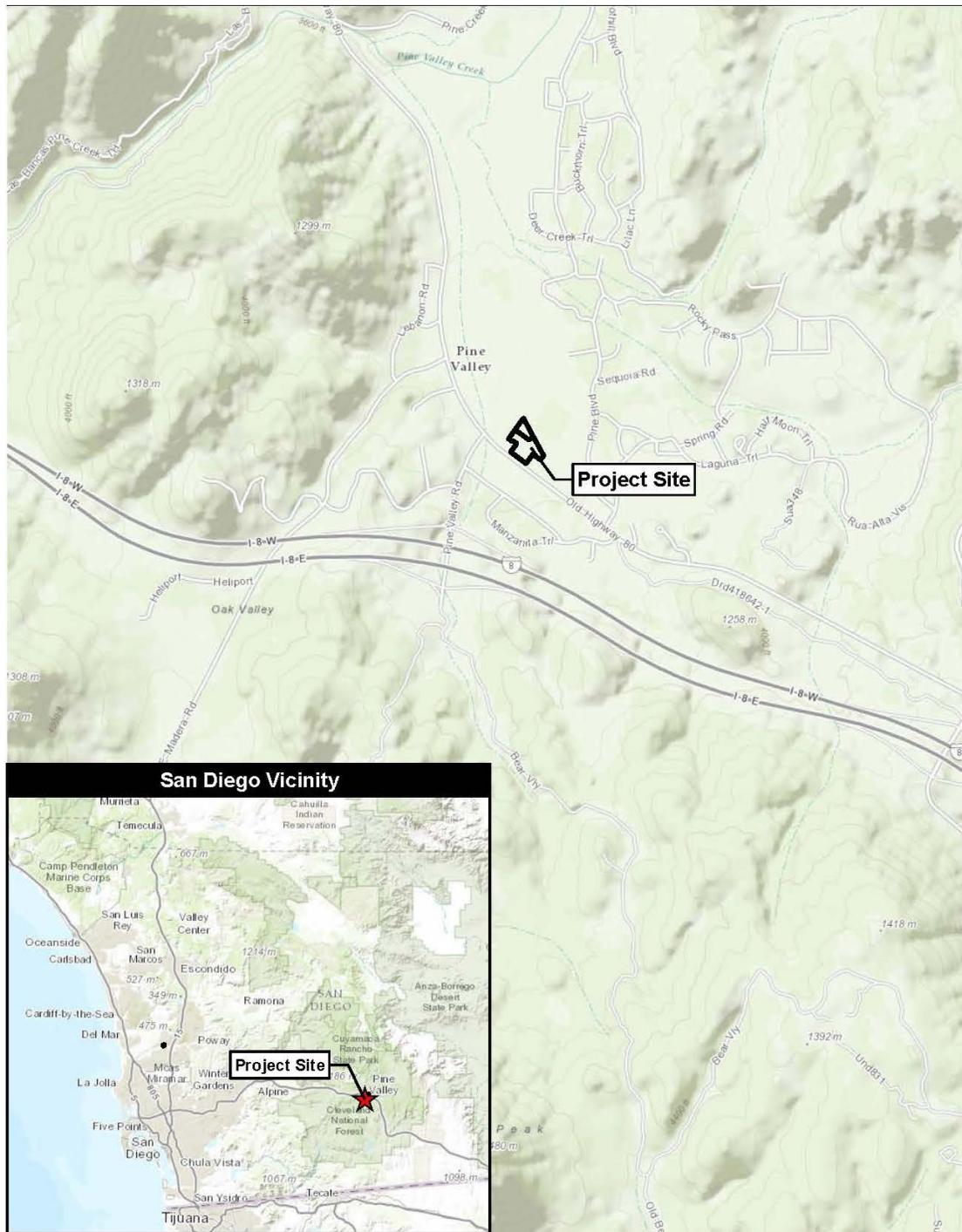


Figure 1
Regional/Vicinity Map
Pine Valley Fire Station

Step 1: Project type determination (Standard or Priority Development Project)

Is the project part of another Priority Development Project (PDP)? If so, a PDP SWQMP is required. Go to Step 2.		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
The project is (select one): <input type="checkbox"/> New Development <input checked="" type="checkbox"/> Redevelopment ¹			
The total proposed newly created or replaced impervious area is:		52,800 ft ²	1.21 acres
The total existing (pre-project) impervious area is:		109,823 ft ²	2.52 acres
The total area disturbed by the project is:		142,650 ft ²	3.27 acres
If the total area disturbed by the project is 1 acre (43,560 sq. ft.) or more OR the project is part of a larger common plan of development disturbing 1 acre or more, a Waste Discharger Identification (WDID) number must be obtained from the State Water Resources Control Board. WDID:			
Is the project in any of the following categories, (a) through (f)?			
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	(a)	New development projects that create 10,000 square feet or more of impervious surfaces (collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	(b)	Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	(c)	New and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses: (i) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (Standard Industrial Classification (SIC) code 5812). (ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater. (iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles.

¹ Redevelopment is defined as: The creation and/or replacement of impervious surface on an already developed site. Examples include the expansion of a building footprint, road widening, the addition to or replacement of a structure, and creation or addition of impervious surfaces. Replacement of impervious surfaces includes any activity that is not part of a routine maintenance activity where impervious material(s) are removed, exposing underlying soil during construction. Redevelopment does not include routine maintenance activities, such as trenching and resurfacing associated with utility work; pavement grinding; resurfacing existing roadways; new sidewalks construction; pedestrian ramps; or bike lanes on existing roads; and routine replacement of damaged pavement, such as pothole repair.

Project type determination (continued)

Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	(d)	<p>New or redevelopment projects that create and/or replace 2,500 square feet or more of impervious surface (collectively over the entire project site), and discharging directly to an Environmentally Sensitive Area (ESA). "Discharging directly to" includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands).</p> <p><i>Note: ESAs are areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Board and San Diego Water Board; State Water Quality Protected Areas; water bodies designated with the RARE beneficial use by the State Water Board and San Diego Water Board; and any other equivalent environmentally sensitive areas which have been identified by the Copermittees. See BMP Design Manual Section 1.4.2 for additional guidance.</i></p>
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	(e)	<p>New development projects, or redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface, that support one or more of the following uses:</p> <ul style="list-style-type: none"> (i) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following SIC codes: 5013, 5014, 5541, 7532-7534, or 7536-7539. (ii) Retail gasoline outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	(f)	<p>New or redevelopment projects that result in the disturbance of one or more acres of land and are expected to generate pollutants post construction.</p> <p><i>Note: See BMP Design Manual Section 1.4.2 for additional guidance.</i></p>
<p>Does the project meet the definition of one or more of the Priority Development Project categories (a) through (f) listed above?</p> <p><input type="checkbox"/> No – the project is <u>not</u> a Priority Development Project (Standard Project).</p> <p><input checked="" type="checkbox"/> Yes – the project is a Priority Development Project (PDP).</p>			
<p>The following is for redevelopment PDPs only:</p> <p>The area of existing (pre-project) impervious area at the project site (limit of work) is: 109,823 ft² (A)</p> <p>The total proposed newly created or replaced impervious area is <u>52,800</u> ft² (B)</p> <p>Percent impervious surface created or replaced (B/A)*100: <u>48</u> * <u> </u> %</p> <p>The percent impervious surface created or replaced is (select one based on the above calculation):</p> <p><input type="checkbox"/> less than or equal to fifty percent (50%) – only newly created or replaced impervious areas are considered a PDP and subject to stormwater requirements</p> <p>OR</p> <p><input checked="" type="checkbox"/> greater than fifty percent (50%) – the entire project site is considered a PDP and subject to stormwater requirements</p> <p><i>*Since this project is only in the environmental phase, actual design may disturb more than 50% of the redeveloped area.</i></p>			

Step 1.1: Storm Water Quality Management Plan requirements

Step	Answer	Progression
<p>Is the project a Standard Project, Priority Development Project (PDP), or exception to PDP definitions?</p> <p>To answer this item, complete Step 1 Project Type Determination Checklist on Pages 1 and 2, and see PDP exemption information below. For further guidance, see Section 1.4 of the BMP Design Manual <i>in its entirety</i>.</p>	<input type="checkbox"/> Standard Project	<p><u>Standard Project</u> requirements apply, including <u>Standard Project SWQMP</u>. Complete Standard Project SWQMP.</p>
	<input checked="" type="checkbox"/> PDP	<p><u>Standard and PDP</u> requirements apply, including <u>PDP SWQMP</u>. Complete PDP SWQMP.</p>
	<input type="checkbox"/> PDP with ACP	<p>If participating in offsite alternative compliance, complete Step 6.3 and an ACP SWQMP.</p>
	<input type="checkbox"/> PDP Exemption	<p>Go to Step 1.2 below.</p>

Step 1.2: Exception to PDP definitions

<p>Is the project exempt from PDP definitions based on either of the following:</p> <ul style="list-style-type: none"> <input type="checkbox"/> New or retrofit paved sidewalks, bicycle lanes, or trails that meet the following criteria: <ul style="list-style-type: none"> (i) Designed and constructed to direct storm water runoff to adjacent vegetated areas, or other non-erodible permeable areas; OR (ii) Designed and constructed to be hydraulically disconnected from paved streets or roads [i.e., runoff from the new improvement does not drain directly onto paved streets or roads]; OR (iii) Designed and constructed with permeable pavements or surfaces in accordance with County of San Diego Guidance on Green Infrastructure; <input type="checkbox"/> Retrofitting or redevelopment of existing paved alleys, streets or roads that are designed and constructed in accordance with the County of San Diego Guidance on Green Infrastructure. 	<p>If so:</p> <p><u>Standard Project</u> requirements apply, AND <u>any additional requirements specific to the type of project</u>. <u>County concurrence</u> with the exemption is required. <i>Provide discussion and list any additional requirements below in this form.</i> Complete Green Streets PDP Exemption SWQMP.</p>
<p><i>Discussion / justification, and additional requirements for exceptions to PDP definitions, if applicable:</i></p>	

Step 2: Construction Storm Water BMP Checklist

Minimum Required Standard Construction Storm Water BMPs		
<p>If you answer "Yes" to any of the questions below, your project is subject to Table 1 on the following page (Minimum Required Standard Construction Stormwater BMPs). As noted in Table 1, please select at least the minimum number of required BMPs, or as many as are feasible for your project. If no BMP is selected, an explanation must be given in the box provided. The following questions are intended to aid in determining construction BMP requirements for your project.</p> <p>Note: All selected BMPs below must be included on the BMP plan incorporated into the construction plan sets.</p>		
1. Will there be soil disturbing activities that will result in exposed soil areas? (This includes minor grading and trenching.) Reference Table 1 Items A, B, D, and E Note: Soil disturbances NOT considered significant include, but are not limited to, change in use, mechanical/electrical/plumbing activities, signs, temporary trailers, interior remodeling, and minor tenant improvement.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
2. Will there be asphalt paving, including patching? Reference Table 1 Items D and F	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
3. Will there be slurries from mortar mixing, coring, or concrete saw cutting? Reference Table 1 Items D and F	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
4. Will there be solid wastes from concrete demolition and removal, wall construction, or form work? Reference Table 1 Items D and F	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
5. Will there be stockpiling (soil, compost, asphalt, concrete, solid waste) for over 24 hours? Reference Table 1 Items D and F	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
6. Will there be dewatering operations? Reference Table 1 Items C and D	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
7. Will there be temporary on-site storage of construction materials, including mortar mix, raw landscaping and soil stabilization materials, treated lumber, rebar, and plated metal fencing materials? Reference Table 1 Items E and F	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
8. Will trash or solid waste product be generated from this project? Reference Table 1 Item F	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
9. Will construction equipment be stored on site (e.g.: fuels, oils, trucks, etc.)? Reference Table 1 Item F	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
10. Will Portable Sanitary Services ("Porta-potty") be used on the site? Reference Table 1 Item F	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

Table 1. Construction Storm Water BMP Checklist

Minimum Required Best Management Practices (BMPs)	CALTRANS SW Handbook ² Detail or County Std. Detail	<input checked="" type="checkbox"/> BMP Selected	Reference sheet No.'s where each selected BMP is shown on the plans. If no BMP is selected, an explanation must be provided.
A. Select Erosion Control Method for Disturbed Slopes (choose at least one for the appropriate season)			
Vegetation Stabilization Planting ³ (Summer)	SS-2, SS-4	<input type="checkbox"/>	N/A – There are no disturbed slopes on the project site.
Hydraulic Stabilization Hydroseeding ² (Summer)	SS-4	<input type="checkbox"/>	
Bonded Fiber Matrix or Stabilized Fiber Matrix ⁴ (Winter)	SS-3	<input type="checkbox"/>	
Physical Stabilization Erosion Control Blanket ³ (Winter)	SS-7	<input type="checkbox"/>	
B. Select erosion control method for disturbed flat areas (slope < 5%) (choose at least one)			
County Standard Lot Perimeter Protection Detail	PDS 659 ⁵ , SC-2	<input type="checkbox"/>	
Will use erosion control measures from Item A on flat areas also	SS-3, 4, 7	<input checked="" type="checkbox"/>	
County Standard Desilting Basin (must treat all site runoff)	PDS 660 ⁶ , SC-2	<input type="checkbox"/>	
Mulch, straw, wood chips, soil application	SS-6, SS-8	<input type="checkbox"/>	

² State of California Department of Transportation (Caltrans). 2003. Storm Water Quality Handbooks, Construction Site Best Management Practices (BMPs) Manual. March. Available online at: <http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm>.

³ If Vegetation Stabilization (Planting or Hydroseeding) is proposed for erosion control it may be installed between May 1st and August 15th. Slope irrigation is in place and needs to be operable for slopes >3 feet. Vegetation must be watered and established prior to October 1st. The owner must implement a contingency physical BMP by August 15th if vegetation establishment does not occur by that date. If landscaping is proposed, erosion control measures must also be used while landscaping is being established. Established vegetation must have a subsurface mat of intertwined mature roots with a uniform vegetative coverage of 70 percent of the natural vegetative coverage or more on all disturbed areas.

⁴ All slopes over three feet must have established vegetative cover prior to final permit approval.

⁵ County of San Diego, Planning & Development Services. 2012. Standard Lot Perimeter Protection Design System. Building Division. PDS 659. Available online at <http://www.sandiegocounty.gov/pds/docs/pds659.pdf>.

⁶ County of San Diego, Planning & Development Services. 2012. County Standard Desilting Basin for Disturbed Areas of 1 Acre or Less Building Division. PDS 659. Available online at <http://www.sandiegocounty.gov/pds/docs/pds660.pdf>.

Table 1. Construction Storm Water BMP Checklist (continued)

Minimum Required Best Management Practices (BMPs)	CALTRANS SW Handbook Detail or County Std. Detail	<input checked="" type="checkbox"/> BMP Selected	Reference sheet No.'s where each selected BMP is shown on the plans. If no BMP is selected, an explanation must be provided.
C. If runoff or dewatering operation is concentrated, velocity must be controlled using an energy dissipater			
Energy Dissipater Outlet Protection ⁷	SS-10	<input checked="" type="checkbox"/>	
D. Select sediment control method for all disturbed areas (choose at least one)			
Silt Fence	SC-1	<input checked="" type="checkbox"/>	
Fiber Rolls (Straw Wattles)	SC-5	<input type="checkbox"/>	
Gravel & Sand Bags	SC-6 & 8	<input checked="" type="checkbox"/>	
Dewatering Filtration	NS-2	<input type="checkbox"/>	
Storm Drain Inlet Protection	SC-10	<input checked="" type="checkbox"/>	
Engineered Desilting Basin (sized for 10-year flow)	SC-2	<input type="checkbox"/>	
E. Select method for preventing offsite tracking of sediment (choose at least one)			
Stabilized Construction Entrance	TC-1	<input checked="" type="checkbox"/>	
Construction Road Stabilization	TC-2	<input type="checkbox"/>	
Entrance/Exit Tire Wash	TC-3	<input type="checkbox"/>	
Entrance/Exit Inspection & Cleaning Facility	TC-1	<input type="checkbox"/>	
Street Sweeping and Vacuuming	SC-7	<input type="checkbox"/>	
F. Select the general site management BMPs			
F.1 Materials Management			
Material Delivery & Storage	WM-1	<input checked="" type="checkbox"/>	
Spill Prevention and Control	WM-4	<input checked="" type="checkbox"/>	
F.2 Waste Management⁸			
Waste Management Concrete Waste Management	WM-8	<input checked="" type="checkbox"/>	
Solid Waste Management	WM-5	<input checked="" type="checkbox"/>	
Sanitary Waste Management	WM-9	<input checked="" type="checkbox"/>	
Hazardous Waste Management	WM-6	<input type="checkbox"/>	

Note: The Construction General Permit (Order No. 2009-0009-DWQ) also requires all projects not subject to the BMP Design Manual to comply with runoff reduction requirements through the implementation of post-construction BMPs as described in Section XIII of the order.

⁷ Regional Standard Drawing D-40 – Rip Rap Energy Dissipater is also acceptable for velocity reduction.

⁸ Not all projects will have every waste identified. The applicant is responsible for identifying wastes that will be onsite and applying the appropriate BMP. For example, if concrete will be used, BMP WM-8 must be selected.

Step 3: County of San Diego PDP SWQMP Site Information Checklist

Step 3.1: Description of Existing Site Condition

Project Watershed (Complete Hydrologic Unit, Area, and Subarea Name with Numeric Identifier)	Tijuana Watershed 911.3
Current Status of the Site (select all that apply): <input checked="" type="checkbox"/> Existing development <input type="checkbox"/> Previously graded but not built out <input type="checkbox"/> Demolition completed without new construction <input type="checkbox"/> Agricultural or other non-impervious use <input type="checkbox"/> Vacant, undeveloped/natural <i>Description / Additional Information:</i> The site consists of the existing Fire Station and associated facilities, Post Office, Major's Coffee Shop and associated parking lots.	
Existing Land Cover Includes (select all that apply and provide each area on site): <input checked="" type="checkbox"/> Vegetative Cover <u>0.75</u> Acres (<u>32,827</u> Square Feet) <input type="checkbox"/> Non-Vegetated Pervious Areas _____ Acres (_____ Square Feet) <input checked="" type="checkbox"/> Impervious Areas <u>2.52</u> Acres (<u>109,823</u> Square Feet) <i>Description / Additional Information:</i> The majority of the site is paved with a small amount of ornamental landscaping and undisturbed natural vegetated areas.	
Underlying Soil belongs to Hydrologic Soil Group (select all that apply): <input checked="" type="checkbox"/> NRCS Type A Per the County of San Diego soils map, Figure C.1 in Appendix C of the <input type="checkbox"/> NRCS Type B County of San Diego's BMP Design Manual. <input type="checkbox"/> NRCS Type C <input type="checkbox"/> NRCS Type D	
Approximate Depth to Groundwater (GW): <input type="checkbox"/> GW Depth < 5 feet <input type="checkbox"/> 5 feet < GW Depth < 10 feet <input checked="" type="checkbox"/> 10 feet < GW Depth < 20 feet <input type="checkbox"/> GW Depth > 20 feet <input type="checkbox"/> Unknown at this time There is no geotechnical data for this project at this time, however, data from other projects and areas nearby show the groundwater to be deeper than 15 feet.	
Existing Natural Hydrologic Features (select all that apply): <input checked="" type="checkbox"/> Watercourses <input type="checkbox"/> Seeps <input type="checkbox"/> Springs <input type="checkbox"/> Wetlands <input type="checkbox"/> None <input type="checkbox"/> Other <i>Description / Additional Information:</i> There is an existing drainage along the northeast side of the property that conveys surface runoff from the adjacent tributary area.	

Step 3.2: Description of Existing Site Drainage Patterns

How is storm water runoff conveyed from the site? At a minimum, this description should answer:

- (1) Whether existing drainage conveyance is natural or urban;
- (2) Is runoff from offsite conveyed through the site? if yes, quantify all offsite drainage areas, design flows, and locations where offsite flows enter the project site, and summarize how such flows are conveyed through the site;
- (3) Provide details regarding existing project site drainage conveyance network, including any existing storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels; and
- (4) Identify all discharge locations from the existing project site along with a summary of conveyance system size and capacity for each of the discharge locations. Provide summary of the pre-project drainage areas and design flows to each of the existing runoff discharge locations.

Describe existing site drainage patterns:

All runoff from the existing site surface flows to the drainage on the northeast side of the project. There are no existing urban drainage facilities or stormwater treatment facilities.

The existing drainage area is larger than the proposed project site. Since all the runoff within this area surface flows, there is some offsite surface runoff conveyed through the project site. It is an additional 0.84 acre and enters the project site along the southeast boundary. See the DMA Exhibit for the delineation of the tributary area.

Step 3.3: Description of Proposed Site Development

<p><i>Project Description / Proposed Land Use and/or Activities:</i></p> <p>The project site includes redevelopment of the existing fire station, which will include the construction of a new station, concrete paved entrance road, and training facilities. The other existing uses on the property will remain. The parking lots associated with these existing uses will be slurry sealed and restriped.</p>
<p><i>List/describe proposed impervious features of the project (e.g., buildings, roadways, parking lots, courtyards, athletic courts, other impervious features):</i></p> <p>The proposed impervious features of the project include buildings (new fire station and training facilities), concrete paved entrance, road and parking lots.</p>
<p><i>List/describe proposed pervious features of the project (e.g., landscape areas):</i></p> <p>The proposed pervious features of the project include landscape areas and bioretention facilities.</p>
<p>Does the project include grading and changes to site topography?</p> <p><input type="checkbox"/> Yes</p> <p><input checked="" type="checkbox"/> No</p> <p><i>Description / Additional Information:</i></p> <p>There will be minimal grading required. No major changes will occur to site topography.</p>

Insert acreage or square feet for the different land cover types in the table below:

Change in Land Cover Type Summary			
Land Cover Type	Existing (acres or ft ²)	Proposed (acres or ft ²)	Percent Change
Vegetation	32,827ft ² (0.75 ac)	34,023ft ² (0.78 ac)	3.65%
Pervious (non-vegetated)	N/A		
Impervious	109,823ft ² (2.52 ac)	108,627ft ² (2.49 ac)	-1.09%

Step 3.4: Description of Proposed Site Drainage Patterns

Does the project include changes to site drainage (e.g., installation of new storm water conveyance systems)?

Yes

No

If yes, provide details regarding the proposed project site drainage conveyance network, including storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels, and the method for conveying offsite flows through or around the proposed project site. Identify all discharge locations from the proposed project site along with a summary of the conveyance system size and capacity for each of the discharge locations. Provide a summary of pre- and post-project drainage areas and design flows to each of the runoff discharge locations. Reference the drainage study for detailed calculations.

Describe proposed site drainage patterns:

In the post project condition, the entire site will be treated with bioretention basins. Runoff will surface flow to the bioretention basins and will filter through the engineered soil and infiltrate into the existing ground.

The bioretention basins will be designed to accommodate the lower storm flows and the larger storm flows, such as the 100-year storm; will by-pass the bioretention basins; and will be conveyed directly to the drainage via an overflow structure. The overflow structure may consist of a weir, allowing the overflow to surface flow to the drainage, or an underground storm drain system that will outlet directly to the existing drainage. All concentrated outfalls into the drainage need to be protected from erosion. Appropriate outlet protection will be provided at each concentrated outfall.

The existing offsite run-on will need to be conveyed along the project site (or at a minimum, around the bioretention basins) since the project is not required to treat this flow. This can be accommodated by creating a concrete swale along the southeast edge of the project.

Step 3.5: Potential Pollutant Source Areas

Identify whether any of the following features, activities, and/or pollutant source areas will be present (select all that apply). Select "Other" if the project is a phased development and provide a description:

- On-site storm drain inlets
- Interior floor drains and elevator shaft sump pumps
- Interior parking garages
- Need for future indoor & structural pest control
- Landscape/Outdoor Pesticide Use
- Pools, spas, ponds, decorative fountains, and other water features
- Food service
- Refuse areas
- Industrial processes
- Outdoor storage of equipment or materials
- Vehicle and Equipment Cleaning
- Vehicle/Equipment Repair and Maintenance
- Fuel Dispensing Areas
- Loading Docks
- Fire Sprinkler Test Water
- Miscellaneous Drain or Wash Water
- Plazas, sidewalks, and parking lots
- Other (provide description)

Description / Additional Information:

Step 3.6: Identification and Narrative of Receiving Water and Pollutants of Concern

Describe flow path of storm water from the project site discharge location(s), through urban storm conveyance systems as applicable, to receiving creeks, rivers, and lagoons as applicable, and ultimate discharge to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable):

The runoff will surface flow to the bioretention basins and either infiltrate into the existing soil in small storms or overflow to the existing drainage in larger storms. The drainage ultimately connects to Pine Valley Creek, then Cottonwood Creek and then makes its way to the Tijuana River and into the Pacific Ocean.

List any 303(d) impaired water bodies within the path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable), identify the pollutant(s)/stressor(s) causing impairment, and identify any TMDLs and/or Highest Priority Pollutants from the WQIP for the impaired water bodies:

303(d) Impaired Water Body	Pollutant(s)/Stressor(s)	TMDLs / WQIP Highest Priority Pollutant
Cottonwood Creek (Tijuana River Watershed)	Selenium	N/A at this time

Identification of Project Site Pollutants*

*Identification of project site pollutants below is only required if flow-thru treatment BMPs are implemented onsite in lieu of retention or biofiltration BMPs. Note the project must also participate in an alternative compliance program (unless prior lawful approval to meet earlier PDP requirements is demonstrated).

Identify pollutants expected from the project site based on all proposed use(s) of the site (see BMP Design Manual Appendix B.6):

Pollutant	Not Applicable to the Project Site	Anticipated from the Project Site	Also a Receiving Water Pollutant of Concern
Sediment			
Nutrients			
Heavy Metals			
Organic Compounds			
Trash & Debris			
Oxygen Demanding Substances			
Oil & Grease			
Bacteria & Viruses			
Pesticides			

Step 3.7: Hydromodification Management Requirements

Do hydromodification management requirements apply (see Section 1.6 of the BMP Design Manual)?

- Yes, hydromodification management requirements for flow control and preservation of critical coarse sediment yield areas are applicable.
- No, the project will discharge runoff directly to existing underground storm drains discharging directly to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.
- No, the project will discharge runoff directly to conveyance channels whose bed and bank are concrete-lined all the way from the point of discharge to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.
- No, the project will discharge runoff directly to an area identified as appropriate for an exemption by the WMAA⁹ for the watershed in which the project resides.

Description / Additional Information (to be provided if a 'No' answer has been selected above):

⁹The Watershed Management Area Analysis (WMAA) is an optional element for inclusion in the Water Quality Improvement Plans (WQIPs) described in the 2013 MS4 Permit [Provision B.3.b.(4)]. It is available online at the Project Clean Water website:

http://www.projectcleanwater.org/index.php?option=com_content&view=article&id=248

Step 3.7.1: Critical Coarse Sediment Yield Areas*

<p>*This Section only required if hydromodification management requirements apply</p> <p>Projects must satisfy critical coarse sediment requirements by either avoiding impacts to onsite critical coarse sediment (Step A) AND bypassing upstream sources of critical coarse sediment (Step B), or by demonstrating the project has no net impact to the receiving water (Step C). Show the backup evidence of the following determinations in Attachment 2c. Refer to Appendix H of the BMP DM for more detailed critical coarse sediment guidance pertaining to identification, avoidance, bypass, and demonstration of no net impact.</p>
<p align="center">A: Avoid Onsite Critical Coarse Sediment</p> <p>Onsite sources of critical coarse sediment are protected through to the County's Resource Protection Ordinance. Applicants must characterize their project per one of the categories below and proceed as directed.</p> <p><input checked="" type="checkbox"/> Project is subject to and in compliance with RPO requirements (Only the area of the project site within the floodplain and floodway is protected through the RPO)</p> <ul style="list-style-type: none"> • Applicant must provide mapping of coarse sediment areas that are $\geq 25\%$ slope and $\geq 50'$ in height as determined per the County of San Diego Resource Protection Ordinance. <i>(Note: these areas may be further refined per guidance in Section H.1.2 of the BMP DM)</i> <p><input type="checkbox"/> Project is not subject to RPO requirements</p> <ul style="list-style-type: none"> • Applicant is not required to identify or avoid any onsite sources of coarse sediment. <p><input type="checkbox"/> Project was initially subject to RPO requirements but qualified for an exemption per RPO Section 86.604(e)(2)(cc) or 86.604(e)(3)</p> <ul style="list-style-type: none"> • Applicant is not preserving sources of onsite critical coarse sediment and must
<p align="center">B: Bypass Upstream and Onsite Critical Coarse Sediment</p> <p>All project applicants must identify sources of upstream critical coarse sediment from hillslopes and first order streams that drain through the project site. Hillslope sources must be identified as coarse sediment areas that are $\geq 25\%$ slope, $\geq 50'$ in height, and draining through the project site <i>(Note: these areas may be further refined per guidance in Section H.1.2 of the BMP DM)</i>. First order streams are identified as field ditches, gullies, ephemeral gullies, and/or NHD streams. Additionally, the sources of onsite critical coarse sediment preserved in Step A must also be effectively bypassed.</p> <p><input checked="" type="checkbox"/> Project bypasses all sources of upstream and onsite critical coarse sediment</p> <ul style="list-style-type: none"> • Applicant has satisfied bypass requirements. <p><input type="checkbox"/> Project does not bypass all sources of upstream and onsite critical coarse sediment</p> <ul style="list-style-type: none"> • Applicant has not satisfied bypass requirements and must demonstrate the project has no net impact to the receiving water (Step C). <p><input type="checkbox"/> Project does not have upstream and onsite sources of critical coarse sediment.</p> <ul style="list-style-type: none"> • Applicant has satisfied bypass requirements.
<p align="center">C: Demonstrate No Net Impact</p> <p>Project applicants that do not satisfy all of the criteria above must achieve compliance by demonstrating the project has no net impact to the receiving water.</p> <p><input checked="" type="checkbox"/> N/A, project satisfies all criteria specified in Steps B and C.</p> <ul style="list-style-type: none"> • Applicant has satisfied all critical coarse sediment requirements <p><input type="checkbox"/> Project did not satisfy all criteria from Step B and C.</p> <ul style="list-style-type: none"> • Applicant has not satisfied critical coarse sediment requirements and must demonstrate the project has no net impact to the receiving water per Appendix H.4.

Step 3.7.2: Flow Control for Post-Project Runoff****This Section only required if hydromodification management requirements apply**

List and describe point(s) of compliance (POCs) for flow control for hydromodification management (see Section 6.3.1). For each POC, provide a POC identification name or number correlating to the project's HMP Exhibit and a receiving channel identification name or number correlating to the project's HMP Exhibit.

There is only one point of compliance for this project. It is just downstream of the entire project site, in the existing drainage. It is labeled as POC 1 on the HMP Exhibit.

Has a geomorphic assessment been performed for the receiving channel(s)?

- No, the low flow threshold is 0.1Q2 (default low flow threshold)
 Yes, the result is the low flow threshold is 0.1Q2
 Yes, the result is the low flow threshold is 0.3Q2
 Yes, the result is the low flow threshold is 0.5Q2

If a geomorphic assessment has been performed, provide title, date, and preparer:

SCCWRP Analysis for Pine Valley Fire Station performed on October 30, 2015, by Keri Gannon, PE (AECOM)

Discussion / Additional Information: (optional)

Step 3.8: Other Site Requirements and Constraints

When applicable, list other site requirements or constraints that will influence storm water management design, such as zoning requirements including setbacks and open space, or local codes governing minimum street width, sidewalk construction, allowable pavement types, and drainage requirements.

- 1) The depth to groundwater must be more than 10 feet between the bottom of the bioretention basin and the groundwater to allow for infiltration and an infiltration rate needs to be determined.
- 2) Due to the frequent use of the concrete paved entrance roads, and the types of vehicles that will be using it, porous pavement is not recommended at this stage. Infiltration and porous pavement may be used during final design, based upon further study.
- 3) The offsite run-on will need to be directed around the bioretention basins since this project is not required to treat this flow.

Optional Additional Information or Continuation of Previous Sections As Needed

This space provided for additional information or continuation of information from previous sections as needed.

Step 4: Source Control BMP Checklist

Source Control BMPs			
<p>All development projects must implement source control BMPs 4.2.1 through 4.2.6 where applicable and feasible. See Chapter 4.2 and Appendix E of the County BMP Design Manual for information to implement source control BMPs shown in this checklist.</p> <p>Answer each category below pursuant to the following:</p> <ul style="list-style-type: none"> • "Yes" means the project will implement the source control BMP as described in Chapter 4.2 and/or Appendix E of the County BMP Design Manual. Discussion / justification is not required. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification must be provided. 			
Source Control Requirement	Applied?		
4.2.1 Prevention of Illicit Discharges into the MS4	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<i>Discussion / justification if 4.2.1 not implemented:</i>			
4.2.2 Storm Drain Stenciling or Signage	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<i>Discussion / justification if 4.2.2 not implemented:</i>			
4.2.3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<i>Discussion / justification if 4.2.3 not implemented:</i>			
4.2.4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<i>Discussion / justification if 4.2.4 not implemented:</i>			

Source Control Requirement	Applied?		
4.2.5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<i>Discussion / justification if 4.2.5 not implemented:</i>			
4.2.6 Additional BMPs Based on Potential Sources of Runoff Pollutants (must answer for each source listed below):			
<input checked="" type="checkbox"/> A. On-site storm drain inlets	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> B. Interior floor drains and elevator shaft sump pumps	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<input checked="" type="checkbox"/> C. Interior parking garages	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> D. Need for future indoor & structural pest control	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<input checked="" type="checkbox"/> E. Landscape/outdoor pesticide use	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> F. Pools, spas, ponds, fountains, and other water features	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> G. Food service	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<input checked="" type="checkbox"/> H. Refuse areas	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> I. Industrial processes	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<input checked="" type="checkbox"/> J. Outdoor storage of equipment or materials	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input checked="" type="checkbox"/> K. Vehicle and equipment cleaning	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input checked="" type="checkbox"/> L. Vehicle/equipment repair and maintenance	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input checked="" type="checkbox"/> M. Fuel dispensing areas	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input type="checkbox"/> N. Loading docks	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<input checked="" type="checkbox"/> O. Fire sprinkler test water	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input checked="" type="checkbox"/> P. Miscellaneous drain or wash water	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<input checked="" type="checkbox"/> Q. Plazas, sidewalks, and parking lots	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<i>Discussion / justification if 4.2.6 not implemented. Clearly identify which sources of runoff pollutants are discussed. Justification must be provided for <u>all</u> "No" answers shown above.</i>			

Note: Show all source control measures described above that are included in design capture volume calculations in the plan sheets of Attachment 5.

Step 5: Site Design BMP Checklist

Site Design BMPs			
<p>All development projects must implement site design BMPs SD-A through SD-H where applicable and feasible. See Chapter 4.3 and Appendix E of the County BMP Design Manual for information to implement site design BMPs shown in this checklist.</p> <p>Answer each category below pursuant to the following:</p> <ul style="list-style-type: none"> • "Yes" means the project will implement the site design BMP as described in Chapter 4.3 and/or Appendix E of the County BMP Design Manual. Discussion / justification is not required. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project site has no existing natural areas to conserve). Discussion / justification must be provided. 			
Site Design Requirement	Applied?		
4.3.1 Maintain Natural Drainage Pathways and Hydrologic Features	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<i>Discussion / justification if 4.3.1 not implemented:</i>			
4.3.2 Conserve Natural Areas, Soils, and Vegetation	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<i>Discussion / justification if 4.3.2 not implemented:</i>			
4.3.3 Minimize Impervious Area	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<i>Discussion / justification if 4.3.3 not implemented:</i>			
4.3.4 Minimize Soil Compaction	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<i>Discussion / justification if 4.3.4 not implemented:</i>			
4.3.5 Impervious Area Dispersion	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<i>Discussion / justification if 4.3.5 not implemented:</i>			

Site Design Requirement	Applied?		
4.3.6 Runoff Collection	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<i>Discussion / justification if 4.3.6 not implemented:</i>			
4.3.7 Landscaping with Native or Drought Tolerant Species	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
<i>Discussion / justification if 4.3.7 not implemented:</i>			
4.3.8 Harvesting and Using Precipitation	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
<i>Discussion / justification if 4.3.8 not implemented:</i> Harvest and reuse is not practical and cost efficient on this project.			

Note: Show all site design measures described above that are included in design capture volume calculations in the plan sheets of Attachment 5.

Step 6: PDP Structural BMPs

All PDPs must implement structural BMPs for storm water pollutant control (see Chapter 5 of the BMP Design Manual). Selection of PDP structural BMPs for storm water pollutant control must be based on the selection process described in Chapter 5. PDPs subject to hydromodification management requirements must also implement structural BMPs for flow control for hydromodification management (see Chapter 6 of the BMP Design Manual). Both storm water pollutant control and flow control for hydromodification management can be achieved within the same structural BMP(s).

PDP structural BMPs must be verified by the County at the completion of construction. This may include requiring the project owner or project owner's representative and engineer of record to certify construction of the structural BMPs (see Section 1.12 of the BMP Design Manual). PDP structural BMPs must be maintained into perpetuity, and the County must confirm the maintenance (see Section 7 of the BMP Design Manual).

Use this section to provide narrative description of the general strategy for structural BMP implementation at the project site in the box below. Then complete the PDP structural BMP summary information sheet (Step 6.2) for each structural BMP within the project (copy the BMP summary information sheet [Step 6.2] as many times as needed to provide summary information for each individual structural BMP).

Step 6.1: Description of structural BMP strategy

Describe the general strategy for structural BMP implementation at the site. This information must describe how the steps for selecting and designing storm water pollutant control BMPs presented in Section 5.1 of the BMP Design Manual were followed, and the results (type of BMPs selected). For projects requiring hydromodification flow control BMPs, indicate whether pollutant control and flow control BMPs are integrated or separate. At the end of this discussion provide a summary of all the structural BMPs within the project including the type and number.

The only need for a harvest and reuse strategy is for landscape irrigation. This project proposes minimal landscaping. Rain events are so infrequent at the project location that implementing a separate irrigation storage and conveyance system is not cost efficient for this project. See Worksheet B3.1.

The project's storm water system will utilize bioretention for pollutant control of the entire Design Capture Volume (DCV). These bioretention basins will also function as flow control BMPs and will be designed per INF-2 in Appendix E of the County of San Diego BMP Design Manual.

Since the project site design is still in the very preliminary phases, no site design features have been applied to reduce the DCV. However, in final design, the site design features discussed in Section 5.3 of the County of San Diego BMP Design Manual can be integrated to reduce the pollutant control and flow control requirements.

Description of structural BMP strategy continued
(Page reserved for continuation of description of general strategy for structural BMP implementation at the site)

(Continued from previous page)

The proposed project site has enough proposed landscaped area to provide for the required 5,650 sf of bioretention basins. However, there will need to be multiple basins instead of one large one due to the smaller size of the landscaped areas. See the DMA Exhibit for the possible locations. These locations were chosen since they are outside of the 100-year floodplain and floodway.

The basin in the north corner of the site will overflow directly into the existing drainage, whereas the bioretention basins surrounding the existing post office will overflow into an underground storm drain system that outlets directly to the drainage. Appropriate energy dissipation will be incorporated at both overflow locations.

During final design, the Drainage Management Area (DMA) will need to be broken up into smaller DMAs, each associated with a single bioretention basin.

Please note that, if during final design infiltration is found to not be feasible, the design of the BMPs will need to be revisited. Most likely, the basins would increase in size (potentially double) and a more extensive underground drainage system would be required to route the flow to the existing drainage.

Step 6.2: Structural BMP Checklist

(Copy this page as needed to provide information for each individual proposed structural BMP)	
Structural BMP ID No. BMP 1	
Construction Plan Sheet No. N/A at this time	
Type of structural BMP: <input type="checkbox"/> Retention by harvest and use (HU-1) <input type="checkbox"/> Retention by infiltration basin (INF-1) <input checked="" type="checkbox"/> Retention by bioretention (INF-2) <input type="checkbox"/> Retention by permeable pavement (INF-3) <input type="checkbox"/> Partial retention by biofiltration with partial retention (PR-1) <input type="checkbox"/> Biofiltration (BF-1) <input type="checkbox"/> Biofiltration with Nutrient Sensitive Media Design (BF-2) <input type="checkbox"/> Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F <input type="checkbox"/> Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) <input type="checkbox"/> Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) <input type="checkbox"/> Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) <input type="checkbox"/> Detention pond or vault for hydromodification management <input type="checkbox"/> Other (describe in discussion section below)	
Purpose: <input type="checkbox"/> Pollutant control only <input type="checkbox"/> Hydromodification control only <input checked="" type="checkbox"/> Combined pollutant control and hydromodification control <input type="checkbox"/> Pre-treatment/forebay for another structural BMP <input type="checkbox"/> Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 1.12 of the BMP Design Manual)	COUNTY OF SAN DIEGO
Who will be the final owner of this BMP?	<input type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input checked="" type="checkbox"/> County <input type="checkbox"/> Other (describe)
Who will maintain this BMP into perpetuity?	<input type="checkbox"/> HOA <input type="checkbox"/> Property Owner <input checked="" type="checkbox"/> County <input type="checkbox"/> Other (describe)
What Category (1-4) is the Structural BMP? Refer to the Category definitions in Section 7.3 of the BMP DM. Attach the appropriate maintenance agreement in Attachment 3.	Category 4
Discussion (as needed): The bioretention basins will be designed per INF-2. (Continue on subsequent pages as necessary)	

Step 6.3: Offsite Alternative Compliance Participation Form

PDP INFORMATION	
Record ID:	
Assessor's Parcel Number(s) [APN(s)]	
What are your PDP Pollutant Control Debits? *See Attachment 1 of the PDP SWQMP	
What are your PDP HMP Debits? (if applicable) *See Attachment 2 of the PDP SWQMP	
ACP Information	
Record ID:	
Assessor's Parcel Number(s) [APN(s)]	
Project Owner/Address	
What are your ACP Pollutant Control Credits? *See Attachment 1 of the ACP SWQMP	
What are your ACP HMP Debits? (if applicable) *See Attachment 2 of the ACP SWQMP	
Is your ACP in the same watershed as your PDP? <input type="checkbox"/> Yes <input type="checkbox"/> No	Will your ACP project be completed prior to the completion of the PDP? <input type="checkbox"/> Yes <input type="checkbox"/> No
Does your ACP account for all Deficits generated by the PDP? <input type="checkbox"/> Yes <input type="checkbox"/> No (PDP and/or ACP must be redesigned to account for all deficits generated by the PDP.	What is the difference between your PDP debits and ACP Credits? *(ACP Credits - Total PDP Debits = Total Earned Credits) _____

ATTACHMENT 1

BACKUP FOR PDP POLLUTANT CONTROL BMPS

This is the cover sheet for Attachment 1.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 1a	Storm Water Pollutant Control Worksheet Calculations -Worksheet B.2-1 (Required) -Worksheet B.4-1 (if applicable) N/A -Worksheet B.4-2 (if applicable) -Worksheet B.5-1 (if applicable) N/A -Worksheet B.5-2 (if applicable) N/A -Worksheet B.5-3 (if applicable) N/A -Worksheet B.6-1 (if applicable) N/A -Worksheet B.3-1 (optional) -Summary Worksheet (optional)	<input checked="" type="checkbox"/> Included
Attachment 1b	Form I-8, Categorization of Infiltration Feasibility Condition (Required unless the project will use harvest and use BMPs) Refer to Appendices C and D of the BMP Design Manual to complete Form I-8.	<input checked="" type="checkbox"/> Included <input type="checkbox"/> Not included because the entire project will use harvest and use BMPs
Attachment 1c	DMA Exhibit (Required) See DMA Exhibit Checklist on the back of this Attachment cover sheet.	<input checked="" type="checkbox"/> Included
Attachment 1d	Individual Structural BMP DMA Mapbook (Required) -Place each map on 8.5"x11" paper. -Show at a minimum the DMA, Structural BMP, and any existing hydrologic features within the DMA.	<input type="checkbox"/> Included Not included since the site design is not complete at this stage of the project. To be included once Final Design commences.

Use this checklist to ensure the required information has been included on the DMA Exhibit:

The DMA Exhibit must identify:

- Underlying hydrologic soil group
- Approximate depth to groundwater
- Existing natural hydrologic features (watercourses, seeps, springs, wetlands)
- Critical coarse sediment yield areas to be protected **(N/A)**
- Existing topography and impervious areas
- Existing and proposed site drainage network and connections to drainage offsite
- Proposed demolition
- Proposed grading **(N/A)**
- Proposed impervious features
- Proposed design features and surface treatments used to minimize imperviousness
- Drainage management area (DMA) boundaries, DMA ID numbers, and DMA areas (square footage or acreage), and DMA type (i.e., drains to BMP, self-retaining, or self-mitigating)
- Potential pollutant source areas and corresponding required source controls (see Chapter 4, Appendix E.1, and Step 3.5)
- Structural BMPs (identify location, type of BMP, and size/detail)

Automated Worksheet B.2-1: Calculation of Design Capture Volume (V1.0)

Category	#	Description	<i>i</i>	<i>ii</i>	<i>iii</i>	<i>iv</i>	<i>v</i>	<i>vi</i>	<i>vii</i>	<i>viii</i>	<i>ix</i>	<i>x</i>	Units
Standard Drainage Basin Inputs	0	Drainage Basin ID or Name	DMA 1										unitless
	1	Basin Drains to the Following BMP Type	Bioretention										unitless
	2	85th Percentile 24-hr Storm Depth	0.81										inches
	3	Impervious Surfaces <u>Not Directed to Dispersion Area</u> (C=0.90)	108,627										sq-ft
	4	Semi-Pervious Surfaces <u>Not Serving as Dispersion Area</u> (C=0.30)											sq-ft
	5	Engineered Pervious Surfaces <u>Not Serving as Dispersion Area</u> (C=0.10)	34,023										sq-ft
	6	Natural Type A Soil <u>Not Serving as Dispersion Area</u> (C=0.10)											sq-ft
	7	Natural Type B Soil <u>Not Serving as Dispersion Area</u> (C=0.14)											sq-ft
	8	Natural Type C Soil <u>Not Serving as Dispersion Area</u> (C=0.23)											sq-ft
	9	Natural Type D Soil <u>Not Serving as Dispersion Area</u> (C=0.30)											sq-ft
Dispersion, Tree Well, & Rain Barrel Inputs (Optional)	10	Does Tributary Incorporate Dispersion, Tree Wells, and/or Rain Barrels?	No	No	No	No	No	No	No	No	No	No	yes/no
	11	Impervious Surfaces Directed to Dispersion Area per SD-B ($C_{initial}=0.90$)											sq-ft
	12	Semi-Pervious Surfaces Serving as Dispersion Area per SD-B (C=0.30)											sq-ft
	13	Engineered Pervious Surfaces Serving as Dispersion Area per SD-B (C=0.10)											sq-ft
	14	Natural Type A Soil Serving as Dispersion Area per SD-B (C=0.10)											sq-ft
	15	Natural Type B Soil Serving as Dispersion Area per SD-B (C=0.14)											sq-ft
	16	Natural Type C Soil Serving as Dispersion Area per SD-B (C=0.23)											sq-ft
	17	Natural Type D Soil Serving as Dispersion Area per SD-B (C=0.30)											sq-ft
	18	Number of Tree Wells Proposed per SD-A											#
	19	Average Mature Tree Canopy Diameter											ft
	20	Number of Rain Barrels Proposed per SD-E											#
	21	Average Rain Barrel Size											gal
Final Adjusted Runoff Factor Calculations	22	Total Area Tributary to BMP	142,650	0	0	0	0	0	0	0	0	0	sq-ft
	23	Initial Runoff Factor	0.71	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	unitless
	24	Total Impervious Area Dispersed to Pervious Surface	0	0	0	0	0	0	0	0	0	0	sq-ft
	25	Total Pervious Dispersion Area	0	0	0	0	0	0	0	0	0	0	sq-ft
	26	Dispersed Impervious Area / Pervious Dispersion Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	ratio
	27	Adjustment Factor for Impervious Areas	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	ratio
	28	Final Adjusted Tributary Runoff Factor	0.71	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	unitless
Volume Reduction Calculations	29	Final Effective Tributary Area	101,282	0	0	0	0	0	0	0	0	0	sq-ft
	30	Initial Design Capture Volume	6,837	0	0	0	0	0	0	0	0	0	cubic-feet
	31	Volume Reduction per Tree Well	0	0	0	0	0	0	0	0	0	0	cubic-feet
	32	Total Tree Well Volume Reduction	0	0	0	0	0	0	0	0	0	0	cubic-feet
	33	Total Rain Barrel Volume Reduction	0	0	0	0	0	0	0	0	0	0	cubic-feet
Result	34	Design Capture Volume Tributary to BMP	6,837	0	0	0	0	0	0	0	0	0	cubic-feet

Worksheet B.2-1 General Notes:

A. Applicants may use this worksheet to calculate design capture volumes for up to 10 drainage areas. User input must be provided for yellow shaded cells, values for all other cells will be automatically generated, errors/notifications will be highlighted in red and summarized below. Upon completion of this worksheet, proceed to the appropriate BMP Sizing worksheet(s).

B. Impervious surfaces include roofs, concrete, asphalt, or pervious pavements with an impervious liner. Semi-pervious surfaces include decomposed granite, cobbles, crushed aggregate, or compacted soils such as unpaved parking. Engineered pervious surfaces include pervious pavements providing full retention of the 85th percentile rainfall depth, or areas with soils that have been amended and mulched per Section 86.709 of the Landscape Ordinance. Dispersion areas are pervious or semi-pervious surfaces that receive runoff from impervious surfaces (C=0.90) and reduce stormwater runoff as outlined in Fact Sheet SD-B.

Automated Worksheet B.4-2: Sizing Bioretention BMPs (V1.0)

Category	#	Description	<i>i</i>	<i>ii</i>	<i>iii</i>	<i>iv</i>	<i>v</i>	<i>vi</i>	<i>vii</i>	<i>viii</i>	<i>ix</i>	<i>x</i>	Units
BMP Inputs	0	Drainage Basin ID or Name	DMA 1	-	-	-	-	-	-	-	-	-	unitless
	1	Design Capture Volume Tributary to BMP	6,837	-	-	-	-	-	-	-	-	-	cubic-feet
	2	Provided Bioretention Surface Area	5,650										sq-ft
	3	Provided Surface Ponding Depth	10										inches
	4	Provided Soil Media Thickness	18										inches
	5	Provided Gravel Storage Thickness	0										inches
	6	Native Soil Infiltration Rate	0.50										in/hr
Retention Calculations	7	Volume Infiltrated Over 6 Hour Storm	1413	0	0	0	0	0	0	0	0	0	cubic-feet
	8	Soil Media Pore Space	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	unitless
	9	Gravel Pore Space	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	unitless
	10	Effective Depth of Retention Storage	15.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	inches
	11	Drawdown Time for Surface Ponding	20	0	0	0	0	0	0	0	0	0	hours
	12	Drawdown Time for Entire Bioretention Basin	31	0	0	0	0	0	0	0	0	0	hours
	13	Volume Retained by BMP	8,663	0	0	0	0	0	0	0	0	0	cubic-feet
	14	Fraction of DCV Retained	1.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	ratio
	15	Percentage of Performance Requirement Satisfied	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	ratio
Result	16	Deficit of Effectively Treated Stormwater	0	n/a	n/a	n/a	cubic-feet						

Worksheet B.4-2 General Notes:

A. Applicants may use this worksheet to size Bioretention BMPs (INF-2) for up to 10 basins. User input must be provided for yellow shaded cells, values for blue cells are automatically populated based on user inputs from previous worksheets, values for all other cells will be automatically generated, errors/notifications will be highlighted in red and summarized below. BMPs fully satisfying the pollutant control performance standards will have a deficit treated volume of zero and be highlighted in green.

Summary of Stormwater Pollutant Control Calculations (V1.0)

Category	Description	<i>i</i>	<i>ii</i>	<i>iii</i>	<i>iv</i>	<i>v</i>	<i>vi</i>	<i>vii</i>	<i>viii</i>	<i>ix</i>	<i>x</i>	Units
Drainage Basin Inputs	Drainage Basin ID or Name	DMA 1	-	-	-	-	-	-	-	-	-	unitless
	Total Area Tributary to BMP	142,650	-	-	-	-	-	-	-	-	-	sq-ft
	Initial Runoff Factor	0.71	-	-	-	-	-	-	-	-	-	unitless
	85th Percentile 24-hr Storm Depth	0.81	-	-	-	-	-	-	-	-	-	inches
	Initial Design Capture Volume	6,837	-	-	-	-	-	-	-	-	-	cubic-feet
Volume Reductions	Final Adjusted Tributary Runoff Factor	0.71	-	-	-	-	-	-	-	-	-	unitless
	Final Effective Tributary Area	101,282	-	-	-	-	-	-	-	-	-	sq-ft
	Tree Well and Rain Barrel Reductions	0	-	-	-	-	-	-	-	-	-	cubic-feet
	Design Capture Volume Tributary to BMP	6,837	-	-	-	-	-	-	-	-	-	cubic-feet
BMP Sizing	Basin Drains to the Following BMP Type	Bioretention	-	-	-	-	-	-	-	-	-	unitless
	Deficit of Effectively Treated Stormwater	0	-	-	-	-	-	-	-	-	-	cubic-feet

Summary Notes:

All fields in this summary worksheet are populated based on previous user inputs. Drainage basins achieving full compliance with performance requirements for onsite pollutant control are highlighted in green. Drainage basins not achieving full compliance are highlighted in red and summarized below. Please note that drainage areas using De Minimis, Self-Mitigating, and/or Self-Retaining classifications may be required to provide additional supporting information.

-Congratulations, all specified drainage basins and BMPs are in compliance with stormwater pollutant control requirements. Include 11x17 color prints of this summary sheet and supporting worksheet calculations as part of the SWQMP submittal package.

Automated Worksheet B.3-1: Capture & Use Feasibility for Entire Project (V1.0)

Category	#	Description	Value	Units
Project Inputs	0	Design Capture Volume for Entire Project Site	6,837	cubic-feet
	1	Proposed Development Type	Industrial	unitless
	2	Number of Residents or Employees at Proposed Development	24	#
	3	Total Planted Area within Development	34,023	sq-ft
	4	Water Use Category for Proposed Planted Areas	Low	unitless
Usage Calculations	5	36-Hour Toilet Use Per Resident or Employee	0.22	cubic-feet
	6	Subtotal: Anticipated 36 Hour Toilet Use	5	cubic-feet
	7	Anticipated 1 Acre Landscape Use Over 36 Hours	52.14	cubic-feet
	8	Subtotal: Anticipated Landscape Use Over 36 Hours	41	cubic-feet
	9	Total Anticipated Use Over 36 Hours	46	cubic-feet
	10	Total Anticipated Use / Design Capture Volume	0.01	cubic-feet
Result	11	Are Capture and Use Techniques Feasible for this Project?	No	unitless

Worksheet B.3-1 General Notes:

A. Applicants may use this optional worksheet to gauge the feasibility of implementing capture and use techniques on their project site. User input should be provided for yellow shaded cells, values for all other cells will be automatically generated. Projects demonstrating feasibility or potential feasibility via this worksheet are encouraged to incorporate capture and use features in their project.

Categorization of Infiltration Feasibility Condition		Form I-8	
<p>Part 1 - Full Infiltration Feasibility Screening Criteria</p> <p>Would infiltration of the full design volume be feasible from a physical perspective without any undesirable consequences that cannot be reasonably mitigated?</p>			
Criteria	Screening Question	Yes	No
1	<p>Is the estimated reliable infiltration rate below proposed facility locations greater than 0.5 inches per hour? The response to this Screening Question must be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.</p>	X	
<p>Provide basis: There is no geotechnical or subsurface report for this project at this time. However, the County of San Diego soils map shows that the existing soil is Type A. It is a reasonable assumption at this stage of the project to assume that an infiltration rate of at least 0.5 in/hr is possible.</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>			
2	<p>Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question must be based on a comprehensive evaluation of the factors presented in Appendix C.2.</p>	X	
<p>Provide basis: There is no geotechnical or subsurface report for this project at this time. However, there are no existing slopes or utilities that could be impacted by infiltrating stormwater. The amount of stormwater that will be infiltrated will be minimal and will not cause groundwater mounding.</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>			

Form I-8 Page 2 of 4			
Criteria	Screening Question	Yes	No
3	<p>Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination (shallow water table, storm water pollutants or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question must be based on a comprehensive evaluation of the factors presented in Appendix C.3.</p>	X	
<p>Provide basis: There is no geotechnical or subsurface report for this project at this time. However, the groundwater on nearby sites has been shown to be at least 15 feet below the surface. Figure C.3 in Appendix C of the San Diego County BMP Design Manual also shows the groundwater being greater than 15 feet deep at the two locations closest to the project site. It is a reasonable assumption to assume that there will be more than 10' between the bottom of the basin and the groundwater. The bioretention basin will remove pollutants from the storm water before it infiltrates into the ground.</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>			
4	<p>Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams or increased discharge of contaminated groundwater to surface waters? The response to this Screening Question must be based on a comprehensive evaluation of the factors presented in Appendix C.3.</p>	X	
<p>Provide basis: There is no geotechnical or subsurface report for this project at this time. However, based on Figure C.4 in Appendix C of the County of San Diego BMP Design Manual there are no contaminated sites within the vicinity of the project.</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>			
Part 1 Result *	<p>If all answers to rows 1 - 4 are “Yes” a full infiltration design is potentially feasible. The feasibility screening category is Full Infiltration</p> <p>If any answer from row 1-4 is “No”, infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a “full infiltration” design.</p> <p>Proceed to Part 2</p>	FULL INFILTRATION	

*To be completed using gathered site information and best professional judgment considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by Agency/Jurisdictions to substantiate findings

It is a reasonable assumption at this stage in the project to assume full infiltration. However, further studies may bring to light reasons to not allow for full infiltration. If that is the case, then the project’s proposed BMPs will need to be reevaluated.

Form I-8 Page 3 of 4

Part 2 – Partial Infiltration vs. No Infiltration Feasibility Screening Criteria

Would infiltration of water in any appreciable amount be physically feasible without any negative consequences that cannot be reasonably mitigated?

Criteria	Screening Question	Yes	No
5	<p>Do soil and geologic conditions allow for infiltration in any appreciable rate or volume? The response to this Screening Question must be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.</p>		
<p>Provide basis: N/A</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.</p>			
6	<p>Can Infiltration in any appreciable quantity be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question must be based on a comprehensive evaluation of the factors presented in Appendix C.2.</p>		
<p>Provide basis: N/A</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.</p>			

Form I-8 Page 4 of 4			
Criteria	Screening Question	Yes	No
7	<p>Can Infiltration in any appreciable quantity be allowed without posing significant risk for groundwater related concerns (shallow water table, storm water pollutants or other factors)? The response to this Screening Question must be based on a comprehensive evaluation of the factors presented in Appendix C.3.</p>		
<p>Provide basis: N/A</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.</p>			
8	<p>Can infiltration be allowed without violating downstream water rights? The response to this Screening Question must be based on a comprehensive evaluation of the factors presented in Appendix C.3.</p>		
<p>Provide basis: N/A</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.</p>			
Part 2 Result*	<p>If all answers from row 1-4 are yes then partial infiltration design is potentially feasible. The feasibility screening category is Partial Infiltration.</p> <p>If any answer from row 5-8 is no, then infiltration of any volume is considered to be infeasible within the drainage area. The feasibility screening category is No Infiltration.</p>		N/A

*To be completed using gathered site information and best professional judgment considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by Agency/Jurisdictions to substantiate findings

NOTES

1. Underlying Soil is assumed to be Type A per Figure C.1 of the BMP Design Manual
2. Approximate Depth to Groundwater is greater than 15 feet per Figure C.3 of the BMP Design Manual
3. There are no critical coarse sediment yield areas within the vicinity of the project, or the project's tributary drainage area, per Figure a.4.b of the Tijuana WMAA

SWQMP CALCULATIONS

Replaced & New Impervious Area = 1.21 acres
 Existing Impervious Area = 2.52 acres
 Replaced and New Impervious Area Percentage = 48%

SITE DESIGN BMPS TO BE IMPLEMENTED

- SD-1 Maintain Natural Drainage Pathways & Hydrologic Features
- SD-2 Conserve Natural Areas, Soils & Vegetation
- SD-3 Minimize Impervious Area
- SD-4 Minimize Soil Compaction
- SD-5 Disperse Impervious Areas
- SD-6 Collect Runoff
- SD-7 Landscape with Native or Drought Tolerant Species

SOURCE CONTROL BMPS TO BE IMPLEMENTED

- SC-1 Prevent Illicit Discharges into the MS4
- SC-2 Identify the Storm System
- SC-3 Protect Outdoor Material Storage Areas
- SC-4 Protect Materials Stored in Outdoor Areas
- SC-5 Protect Trash Storage Areas

LEGEND

PROJECT BOUNDARY/DMA 1	
TRIBUTARY DRAINAGE AREA	
PROPOSED STORM DRAIN	
EXISTING IMPERVIOUS SURFACE AREA	
REPLACED OR NEW IMPERVIOUS SURFACE AREA	
PROPOSED CONCRETE	
PROPOSED BIORETENTION	
PROPOSED LANDSCAPING	

NO SCALE



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DMA & HMP Exhibit
PINE VALLEY FIRE STATION
 SWQMP

Attachments
 1a & 2a

ATTACHMENT 2

BACKUP FOR PDP HYDROMODIFICATION CONTROL MEASURES

This is the cover sheet for Attachment 2.

Mark this box if this attachment is empty because the project is exempt from PDP hydromodification management requirements.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 2a	Flow Control Facility Design, including Structural BMP Drawdown Calculations and Overflow Design Summary (Required) See Chapter 6 and Appendix G of the BMP Design Manual	<input checked="" type="checkbox"/> Included <input type="checkbox"/> Submitted as separate stand-alone document
Attachment 2b	Hydromodification Management Exhibit (Required)	<input checked="" type="checkbox"/> Included See Hydromodification Management Exhibit Checklist on the back of this Attachment cover
Attachment 2c	Management of Critical Coarse Sediment Yield Areas See Section 6.2 and Appendix H of the BMP Design Manual.	<input checked="" type="checkbox"/> Exhibit depicting onsite and/or upstream sources of critical coarse sediment as mapped by Regional or Jurisdictional approaches outlined in Appendix H.1 AND, <input checked="" type="checkbox"/> Demonstration that the project effectively avoids and bypasses sources of mapped critical coarse sediment per approaches outlined in Appendix H.2 and H.3. OR, <input type="checkbox"/> Demonstration that project does not generate a net impact on the receiving water per approaches outlined in Appendix H.4.
Attachment 2d	Geomorphic Assessment of Receiving Channels (Optional) See Section 6.3.4 of the BMP Design Manual.	<input type="checkbox"/> Not performed <input checked="" type="checkbox"/> Included <input type="checkbox"/> Submitted as separate stand-alone document
Attachment 2e	Vector Control Plan (Required when structural BMPs will not drain in 96 hours)	<input type="checkbox"/> Included <input checked="" type="checkbox"/> Not required because BMPs will drain in less than 96 hours

Use this checklist to ensure the required information has been included on the Hydromodification Management Exhibit:

The Hydromodification Management Exhibit must identify:

- Underlying hydrologic soil group
- Approximate depth to groundwater
- Existing natural hydrologic features (watercourses, seeps, springs, wetlands)
- Critical coarse sediment yield areas to be protected **(N/A)**
- Existing topography
- Existing and proposed site drainage network and connections to drainage offsite
- Proposed grading **(N/A)**
- Proposed impervious features
- Proposed design features and surface treatments used to minimize imperviousness
- Point(s) of Compliance (POC) for Hydromodification Management
- Existing and proposed drainage boundary and drainage area to each POC (when necessary, create separate exhibits for pre-development and post-project conditions)
- Structural BMPs for hydromodification management (identify location, type of BMP, and size/detail)



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February 4, 2016

Marc Cass
Project Manager – Entitlements
Dept. of General Services, County of San Diego
5560 Overland Avenue, Suite 410
San Diego, CA 92123

Subject: SCCWRP Analysis for Pine Valley Fire Station

Dear Mr. Cass:

AECOM has completed the Southern California Coastal Water Research Project (SCCWRP) analysis for the Pine Valley Fire Station project. The runoff from the project site sheet flows into an existing drainage along the site's northeast boundary. This drainage eventually flows into Pine Valley Creek. Please see the attached Regional Vicinity Map.

The outcome of the SCCWRP analysis is that the ephemeral stream downstream of the project site is rated as having a VERY HIGH susceptibility to lateral and vertical erosion. This means that the most conservative low-flow threshold of 10% of the 2-year storm needs to be used for the Hydromodification Management Plan (HMP) analysis. Below is a summary of the process used to determine the above results.

AECOM followed the procedures for an in-field channel assessment using the Southern California Coastal Water Research Project (SCCWRP) Screening Tool per the County of San Diego's Hydromodification Management Plan, March 2011. For a discussion of the methodology and variable definitions, see Appendix A, Hydromodification Screening Tools: Field Manual for Assessing Channel Susceptibility, March 2010, of the HMP Manual. The procedure consists of the following steps:

- Determine the Analysis Domain
- Conduct the Initial Office Assessment
- Conduct a Field Review
- Rate the Vertical Susceptibility of the Stream Reach
- Rate the Horizontal Susceptibility of the Stream Reach
- Determine the Channel's Overall Susceptibility Rating

Analysis Domain and Initial Office Assessment

Before completing the field review, the analysis domain was determined using Google Earth. The analysis domain was determined to be from the stream alongside the existing project site boundary to the first major change in grade along the channel, which was the confluence with another tributary drainage. Based on this information, the length of the channel to be assessed was approximately 2,400 feet long. Refer to the attached Analysis Map.

The initial office assessment was then completed for this length of channel. Please see the attached Form 1: Initial Desktop Analysis.

Conduct a Field Review

After the initial office work, AECOM completed a field review of the channel length on Tuesday, October 13, 2015. Only approximately 850 feet of the length of channel was walked and items such as the valley bottom width, bed material, existing erosion marks, meandering low flow marks, and bank material were noted. The remaining length of channel was not walked since the first 850 feet showed very clear signs of lateral and vertical erosion.

The field review started at the edge of the project site, where there is an existing road crossing over the stream and a 24-inch Reinforced Concrete Pipe RCP pipe placed under the crossing to convey the flow in the stream. See Figure 1 below.



Figure 1: Upstream End of the SCCWRP Analysis Domain



Figure 2: Channel along Northeast Project Boundary

Downstream of this constriction, the channel bottom is approximately 2.5 feet wide with banks ranging in height from 4 to 6 feet and steeper than a 2:1 slope. The bottom material is very sandy and the channel banks are vegetated, but not the bottom. The right bank is showing signs of erosion at the toe. See Figure 2 above. As the channel approaches a heavily vegetated portion, the bottom of the channel widens to approximately 12 feet with bank heights ranging between 3 to 4 feet. See Figure 3 on the next page. Once the channel is within the heavily vegetated area, the channel bottom is approximately

Mr. Marc Cass
February 4, 2016
Page 3

4 feet wide with banks ranging in height from 4 feet to 7 feet. There is also evidence of meandering. See Figure 4 below right.

Once the channel is through the heavily vegetated channel bottom area, the banks become higher and severely over-steepened and there are signs of lateral displacement. See Figure 5 below left.



Figure 3: Change in Stream Width before Heavy Vegetation



Figure 5: Lateral Displacement and Over-steepened Banks



Figure 4: Stream within Heavy Vegetation

Vertical Susceptibility Rating

After the field review, AECOM was able to complete Form 2: Vertical Susceptibility based on what was observed and identified in the field. It was determined that the channel has a VERY HIGH vertical susceptibility rating. See the attached Form 2 for the vertical susceptibility rating analysis process.



Mr. Marc Cass
February 4, 2016
Page 4

Lateral Susceptibility Rating

After the field review, AECOM was able to complete Form 4: Lateral Susceptibility based on what was observed and identified in the field. It was determined that the channel has a VERY HIGH lateral susceptibility rating. See the attached Form 4 for the lateral susceptibility rating analysis process.

Overall Susceptibility Rating

The decision trees summarized in Forms 1, 2, and 4 from the Screening Tool were utilized for the reach of the creek downstream of the proposed project and it was determined that the channel has a VERY HIGH vertical and lateral susceptibility. Because of the VERY HIGH susceptibility ratings, the most conservative low-flow threshold of 10% of the 2-year storm was used for the SDHM analysis.

Please do not hesitate to contact me with any questions you may have regarding the SCCWRP analysis presented above

Sincerely,

A handwritten signature in blue ink that reads 'Keri Gannon'.

Keri Gannon, PE
Associate Engineer

- Attachments:
1. Figure 1: Regional/Vicinity Map
 2. Figure 2: Analysis Map
 3. Form 1: Initial Desktop Analysis
 4. Form 2: Vertical Susceptibility Field Sheet
 5. Form 4: Lateral Susceptibility Field Sheet

FIGURES



Source: ESRI.



2,000 1,000 0 2,000 Feet

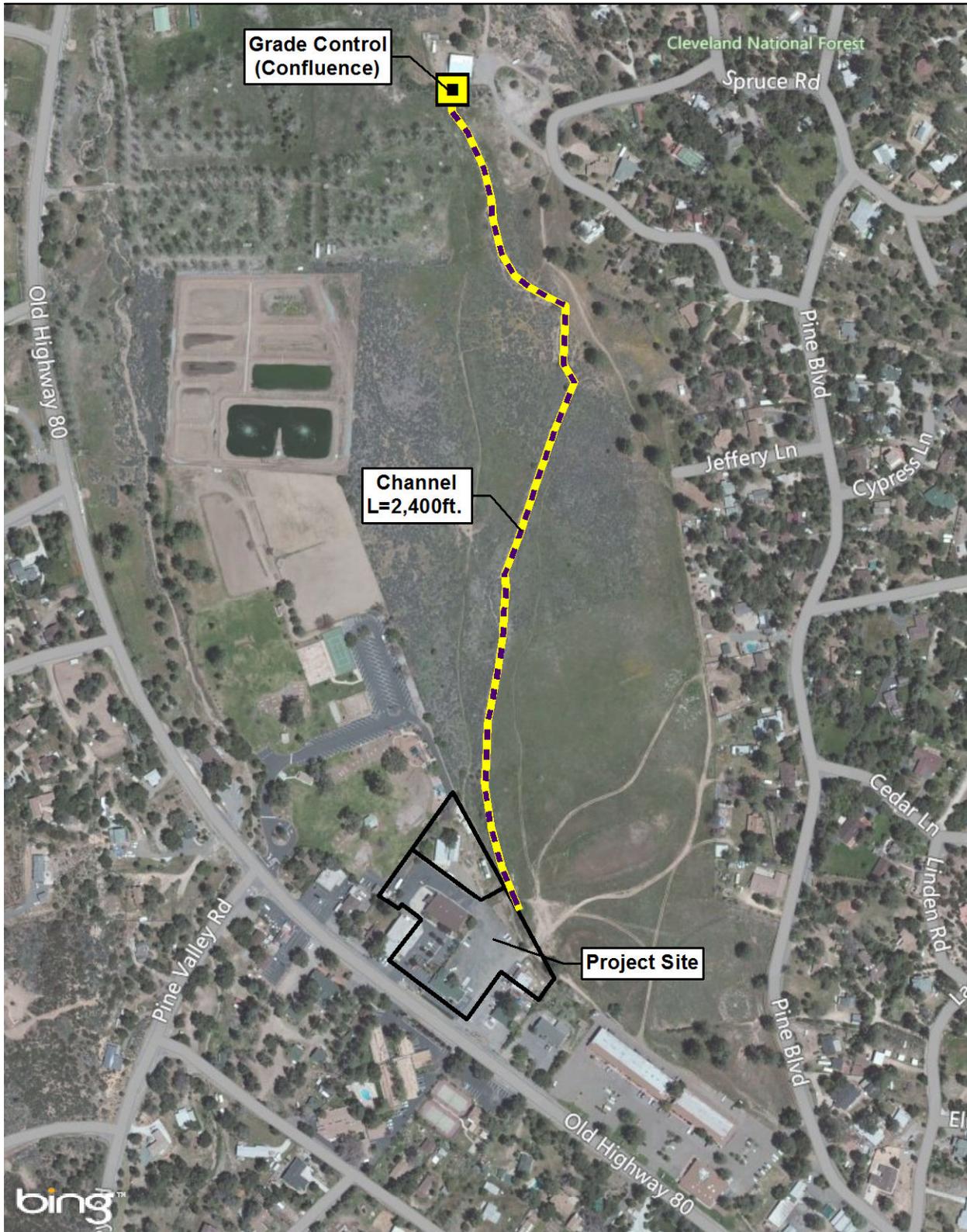


Scale: 1:24,000; 1 inch = 2000 feet

Figure 1
Regional/Vicinity Map
Pine Valley Fire Station

Pine Valley Fire Station SCCWRP Analysis

Path: P:_6044\60442874_PV_Fire_IS\900-CAD-GIS\920 GIS\922_Maps\SCCWRP\Vicinity.mxd, 2/3/2016, paul_moreno



Source: ESRI.

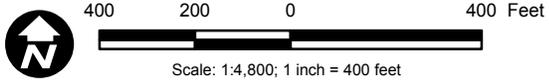


Figure 2
Analysis Map
Pine Valley Fire Station

Pine Valley Fire Station SCCWRP Analysis

Path: P:_6044\60442874_PV_Fire_IS\900-CAD-GIS\920 GIS\922_Maps\SCCWRP\Analysis_Map.mxd, 2/3/2016, paul_moreno

FORMS

user: stream:

latitude (decimal degrees):

longitude (decimal degrees):

FORM 1: INITIAL DESKTOP ANALYSIS

GIS metrics and screening indices (for detailed instructions/examples see '[Field Screening Companion Document](#)')

Symbol	Variable	units	Value	Description & Source
A	Drainage Area	mi ²	<input type="text" value="1.5"/>	contributing drainage area to screening location via <i>published HUCs and/or 30-m (or better) National Elevation Data (NED), USGS seamless server</i>
P	Mean annual precipitation	inches	<input type="text" value="23.7"/>	area-weighted annual precipitation via <i>USGS delineated polygons using records from 1900 to 1960 (which was more significant in hydrologic models than polygons delineated from shorter record lengths)</i>
S _v	Valley slope	m/m	<input type="text" value="0.015"/>	valley slope at site via <i>NED, measured over a relatively homogeneous valley segment as indicated by slope, hillslope coupling/confinement, valley alignment, confluences, etc., over a distance of up to ~500 meters or 10% of the main-channel length (whatever is smaller)</i>
W _v	Valley width	meters	<input type="text" value="220"/>	valley bottom width at site <i>between natural valley walls as dictated by clear breaks in hillslope on NED raster, irrespective of potential armoring from floodplain encroachment, levees, etc. (imprecise measurements have negligible effect on rating in wide valleys where VWI >>2, as defined in lateral decision tree)</i>
Q _{10cfs}	10-year peak flow, US units	ft ³ /s	<input type="text" value="296"/>	$Q_{10cfs} = 18.2 * A^{0.87} * P^{0.77}$ (<i>Hawley and Bledsoe, In review</i>)
Q ₁₀	10-year peak flow	m ³ /s	<input type="text" value="8.39"/>	$Q_{10} = 0.0283 * Q_{10cfs}$
INDEX	10-year mobility index	m ^{1.5} /s ^{0.5}	<input type="text" value="0.043"/>	$INDEX = S_v * Q_{10}^{0.5}$
W _{ref}	Reference width	meters	<input type="text" value="17.74"/>	$W_{ref} = 6.99 * Q_{10}^{0.438}$
VWI	Valley width index	m/m	<input type="text" value="12.40"/>	$VWI = W_v / W_{ref}$

user:

stream:

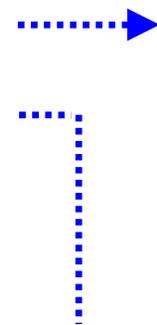
latitude:

longitude:

FORM 2: VERTICAL SUSCEPTIBILITY

Bed material primary state

State	Description	"X" appropriate box	Next Step(s) and/or Vertical Rating
Labile	sand-dominated gravels d ₅₀ < 16 mm	<input checked="" type="checkbox"/>	<input type="text" value="assess current CEM state, grade control, and incision risk"/>
Intermediate	cobbles & gravels 16 < d ₅₀ < 128 mm hardpan/uncertain	<input type="checkbox"/>	<input type="text"/>
Coarse/ Armored	boulders & large cobbles d ₅₀ > 128 mm bedrock/concrete	<input type="checkbox"/>	<input type="text"/>



Labile Bed with:

Degree of Incision:	CEM State	Grade Control	Probability of Incising/braiding (go to Form 3)	"X" appropriate box	Vertical Rating
Incision past critical bank height	CEM III or IV	N/A	N/A	<input checked="" type="checkbox"/>	<input type="text" value="VERY HIGH"/>
Little/no incision	CEM I or II	absent, or failing, or spaced > 50 m	- AND ≥ 50%	<input type="text" value="#NUM!"/>	<input type="text"/>
Little/no incision	CEM I or II	spaced ≤ 50 m	- OR - < 50%	<input type="text" value="#NUM!"/>	<input type="text"/>

user:

stream:

latitude:

longitude:

FORM 4: LATERAL SUSCEPTIBILITY

Primary Lateral States

Lateral Rating

<u>Description</u>	<u>"X" appropriate box</u>	<u>Combination of State & Risk Factors</u>
Mass wasting or fluvial erosion/braiding existing and extensive	<input checked="" type="checkbox"/>	VERY HIGH
Poorly consolidated or unconsolidate with fine/nonresistant toe material	<input type="checkbox"/>	
Poorly consolidated or unconsolidated with coarse/resistant toe material	<input type="checkbox"/>	
Consolidated, stratification absent or not contributing to failure	<input type="checkbox"/>	
Fully armored bedrock/engineered reinforcement or fully confined by hillslope	<input type="checkbox"/>	

ATTACHMENT 3

Structural BMP Maintenance Information

This is the cover sheet for Attachment 3.

Indicate which items are included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 3a	Structural BMP Maintenance Plan (Required)	<input checked="" type="checkbox"/> Included See Structural BMP Maintenance Information Checklist on the back of this Attachment cover sheet.
Attachment 3b	Draft Stormwater Maintenance Notification / Agreement (when applicable)	<input checked="" type="checkbox"/> Included <input type="checkbox"/> Not Applicable

Use this checklist to ensure the required information has been included in the Structural BMP Maintenance Information Attachment:

Attachment 3a must identify:

- Specific maintenance indicators and actions for proposed structural BMP(s). This must be based on Section 7.7 of the BMP Design Manual and enhanced to reflect actual proposed components of the structural BMP(s)
- How to access the structural BMP(s) to inspect and perform maintenance
- Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)
- Manufacturer and part number for proprietary parts of structural BMP(s) when applicable
- Maintenance thresholds specific to the structural BMP(s), with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP)
- Recommended equipment to perform maintenance
- When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management

Attachment 3b: For all Structural BMPs, Attachment 3b must include a draft maintenance agreement in the County's standard format depending on the Category (PDP applicant to contact County staff to obtain the current maintenance agreement forms). Refer to Section 7.3 in the BMP Design Manual for a description of the different categories.

Category 4: Maintenance Acceptance Memorandum



OPERATIONS AND MAINTENANCE PLAN

This Operation & Maintenance Plan is for the proposed structural BMPs as part of the proposed Pine Valley Fire Station redevelopment. The structural BMPs include bioretention systems. Please refer to the other appendices for the location and description of each treatment facility, the drainage areas tributary to the facility, pervious and impervious areas, discharge points descriptions and locations, and the treatment capacity of each facility.

OWNERSHIP AND MAINTENANCE RESPONSIBILITY:

The County of San Diego is responsible for the long-term operation and maintenance of the structural BMPs for the proposed project.

FUNDING SOURCE:

The funding source for this maintenance will be through the County of San Diego.

COST OF MAINTENANCE:

It is anticipated that on average, 4 hours per month will be required to maintain the proposed structural BMPs. Some months it may be more some months it may be less. Assuming labor costs only, at \$120 per a two man crew, the approximate yearly maintenance cost is \$5,760.00. This cost does not take into account potential material costs such as new plants, re-seeding and porous concrete replacements.

MAINTENANCE REQUIREMENTS AND ACCESS:

Descriptions of the proposed structural BMPs, typical maintenance indicators, and maintenance actions are shown below. Typical landscaping equipment will be needed for the maintenance of the basins. Access will be provided next to the basins through the existing paved areas on the project site. Slopes will be minimal and easily traversable by foot and typical landscaping equipment. Easily accessible cleanouts will be provided for easy access to necessary underground storm drain systems.

Bioretention

The landscaped areas within the proposed landscape areas and adjacent to paved areas will have bioretention systems that filter and infiltrate runoff prior to the runoff out letting to the existing earthen swale.

Bioretention (INF-2)	
Typical Maintenance Indicators	Maintenance Actions
Accumulation of sediment, litter, or debris	Remove and properly dispose of accumulated materials, without damage to the vegetation.
Poor vegetation establishment	Re-seed, re-plant, or re-establish vegetation per original plans.
Overgrown vegetation	Mow or trim as appropriate, but not less than the design height of the vegetation per original plans when applicable (e.g. a vegetated swale may require a minimum vegetation height).
Erosion due to concentrated irrigation flow	Repair/re-seed/re-plant eroded areas and adjust the irrigation system.
Erosion due to concentrated storm water runoff flow	Repair/re-seed/re-plant eroded areas, and make appropriate corrective measures such as adding erosion control blankets, adding stone at flow entry

Bioretention (INF-2)	
Typical Maintenance Indicators	Maintenance Actions
	points, or minor re-grading to restore proper drainage according to the original plan.
Standing water in vegetated area	Make appropriate corrective measures such as adjusting irrigation system, removing obstructions of debris or invasive vegetation, loosening or replacing top soil to allow for better infiltration, or minor re-grading for proper drainage.
Standing water in biofiltration areas for longer than 96 hours following a storm event*	Make appropriate corrective measures such as adjusting irrigation system, removing obstructions of debris or invasive vegetation, clearing underdrains (where applicable), or repairing/replacing clogged or compacted soils.
Obstructed inlet or outlet structure	Clear obstructions.
Damage to structural components such as weirs, inlet or outlet structures	Repair or replace as applicable.
*These BMPs typically include a surface ponding layer as part of their function which may take 96 hours to drain following a storm event.	



COUNTY OF SAN DIEGO ▪ DEPARTMENT OF PUBLIC WORKS
1.11.3 Category 4 : STRUCTURAL BMP ACCEPTANCE MEMORANDUM

Project No:

APN:

The **Structural BMPs** on project: _

Project Name

have been completed in accordance with the Stormwater Management Plan (SWMP) and approved Grading and/or Improvement Plans and is recommended for County acceptance for ongoing maintenance. A list of **Structural BMPs** and **map** showing their location must be attached.

Yes **No**

Permanent Stormwater Structural Best Management Practices have been installed in accordance with the WPO and BMP Design Manual requirements.

Location description:

Transfer Date:

RECOMMENDED FOR ACCEPTANCE	COMMENTS
Resident Engineer Date	
Operations Manager Date	
Project Manager Date	
Construction Project Manager Date	
Construction Program Manager Date	
Other Date	

Distribution: Operations Manager ; Project Manager ; Materials Lab ; Traffic Engineering ; Resident Engineer ;
 Project File ; Watershed Protection Program ; Others ;

ATTACHMENT 4

County of San Diego PDP Structural BMP Verification for Permitted Land Development Projects

County of San Diego BMP Design Manual Verification Form	
Project Summary Information	
Project Name	Pine Valley Fire Station
Permit Application Number (e.g., grading/improvement plan number)	
Project Address	
Assessor's Parcel Number(s) (APN(s))	
Project Watershed (Complete Hydrologic Unit, Area, and Subarea Name with Numeric Identifier)	Tijuana 911.3
Maintenance Notification / Agreement No.	
Responsible Party for Construction Phase	
Developer's Name	
Address	
Email Address	
Phone Number	
Engineer of Work	
Engineer's Phone Number	
Responsible Party for Ongoing Maintenance	
Owner's Name(s)*	
Address	
Email Address	
Phone Number	
*Note: If a corporation or LLC, provide information for principal partner or Agent for Service of Process. If an HOA, provide information for the Board or property manager at time of project closeout.	

Checklist for Applicant to submit to PDCI:

- Copy of the final accepted SWQMP and any accepted addendum.
- Copy of the most current plan showing the Stormwater Structural BMP Table, plans/cross-section sheets of the Structural BMPs and the location of each verified as- built Structural BMP.
- Photograph of each Structural BMP.
- Photograph(s) of each Structural BMP during the construction process to illustrate proper construction.
- Copy of the approved Structural BMP maintenance agreement and associated security

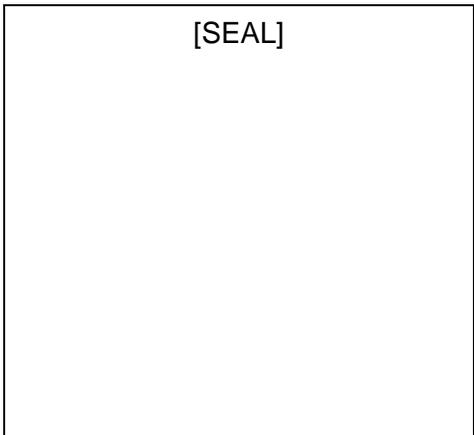
By signing below, I certify that the Structural BMP(s) for this project have been constructed and all BMPs are in substantial conformance with the approved plans and applicable regulations. I understand the County reserves the right to inspect the above BMPs to verify compliance with the approved plans and Watershed Protection Ordinance (WPO). Should it be determined that the BMPs were not constructed to plan or code, corrective actions may be necessary before permits can be closed.

Please sign your name and seal.

Professional Engineer's Printed Name:

Professional Engineer's Signed Name:

Date: _____



ATTACHMENT 5

Copy of Plan Sheets Showing Permanent Storm Water BMPs, Source Control, and Site Design

This is the cover sheet for Attachment 5.

TO BE PREPARED AT FINAL DESIGN

Use this checklist to ensure the required information has been included on the plans:

The plans must identify:

- Structural BMP(s) with ID numbers matching Step 6 Summary of PDP Structural BMPs
- The grading and drainage design shown on the plans must be consistent with the delineation of DMAs shown on the DMA exhibit
- Details and specifications for construction of structural BMP(s)
- Signage indicating the location and boundary of structural BMP(s) as required by County staff
- How to access the structural BMP(s) to inspect and perform maintenance
- Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)
- Manufacturer and part number for proprietary parts of structural BMP(s) when applicable
- Maintenance thresholds specific to the structural BMP(s), with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP)
- Recommended equipment to perform maintenance
- When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management
- Include landscaping plan sheets showing vegetation requirements for vegetated structural BMP(s)
- All BMPs must be fully dimensioned on the plans
- When proprietary BMPs are used, site-specific cross section with outflow, inflow, and model number must be provided. Photocopies of general brochures are not acceptable.
- Include all source control and site design measures described in Steps 4 and 5 of the SWQMP. Can be included as a separate exhibit as necessary.

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ATTACHMENT 6

Copy of Project's Drainage Report

This is the cover sheet for Attachment 6.

TO BE PREPARED AT FINAL DESIGN

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ATTACHMENT 7

Copy of Project's Geotechnical and Groundwater Investigation Report

This is the cover sheet for Attachment 7.

TO BE PREPARED AT FINAL DESIGN

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APPENDIX E

CULTURAL RECORDS SEARCH

(Confidential, Bound Separately)

