Final Mitigated Negative Declaration

Griffith Park South
Water Recycling Project
(State Clearinghouse No. 2013101066)

Los Angeles Department of Water and Power
Environmental Affairs
111 North Hope Street, Room 1044
Los Angeles, California 90012

February 2014

CEQA Initial Study and Mitigated Negative Declaration

Griffith Park South Water Recycling Project

February 2014

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COUNTY CLERK'S USE CITY CLERK'S USE

CITY OF LOS ANGELES
OFFICE OF THE CITY CLERK
ROOM 395, CITY HALL
LOS ANGELES, CALIFORNIA 90012
CALIFORNIA ENVIRONMENTAL QUALITY ACT
PROPOSED
MITIGATED NEGATIVE DECLARATION
(Article I, City CEQA Guidelines)

LEAD CITY AGENCY:	**COUNCIL DISTRICT**
Los Angeles Department of Water and Power (LADWP) 111 North Hope Street, Room 1044 Los Angeles, CA 90012	CD No. 4 Councilmember Tom LaBonge
PROJECT TITLE: Griffith Park South Water Recycling Project	**CASE NO.**

PROJECT LOCATION: The proposed project is located within Griffith Park in the northeastern area of the City of Los Angeles**.** Griffith Park is owned and operated by the City of Los Angeles Department of Recreation and Parks (~~LA~~RAP) and is located at 4730 Crystal Springs Drive. It is bounded by State Route (SR) 134 to the north, Interstate 5 (I-5) to the east, Los Feliz Boulevard to the south, and the San Gabriel Mountains to the west. Prior to construction, LADWP would obtain a Right of Entry Permit (ROE) from ~~LA~~RAP which allows LADWP to construct the facilities. The proposed project would connect to the existing Greenbelt Recycled Water pipeline and would extend the pipeline to the proposed pump station located to the east of Fire Road east of the Merry-Go-Round and south of the Old Zoo Picnic Area. At the proposed pump station, the proposed pipeline would continue to the foot of Fern Canyon Nature Trail to the proposed recycled water storage tank located near the existing Tank 114 site on Vista Valle Drive. The last segment of the proposed project would be located downhill of the proposed tank and would connect with an existing pipeline terminating at an existing parking lot of the Roosevelt Golf Course. Another pipeline designated as a potable back-up would ~~(I didn't want to convey the idea of "connection" between potable water and recycled water.)~~ extend from the existing Grade Potable System to fill the proposed recycled water storage tank. These facilities would allow for future expansion of the recycled water system serving Griffith Park.

DESCRIPTION: The proposed project would expand the use of recycled water within the Griffith Park and Los Feliz Area of the City of Los Angeles. Implementation of the proposed project would extend the existing Greenbelt Water Recycling distribution line south to serve the Roosevelt Golf Course, which is a prime customer for recycled water. The proposed project would involve the construction of recycled water pipelines, a water pump station, a regulator valve, and a recycled water storage tank. Proposed project facilities include:

- Proposed recycled water pump house station to be located on the east side of Fire Road. There would be one pump house, two operating pumps and one back-up pump. A minimum flow of 1,400 gallons per minute (gpm) would be required to fill the proposed recycled water tank in 12 hours. Each pump would have 150 horsepower.
- 2,100 linear feet of 12-inch pipeline, connecting the existing Greenbelt pipeline to the proposed pump station east of Fire Road;
- 2,500 linear feet of 12-inch pipeline from the proposed horizontal directional drilling (HDD) launching pit to the HDD receiving pit near the proposed recycled water storage tank;
- 1,400 linear feet of 12-inch pipeline from the HDD receiving pit to the proposed recycled water storage tank;
- 700 linear feet of 12-inch pipeline from the proposed recycled water tank to the existing 1,200 linear feet 8-inch steel pipeline, connecting to the Roosevelt Golf Course;
- 700 linear feet of 12-inch pipeline from the proposed recycled water tank to the existing 1,544 foot Grade Potable System to be used as a potable back-up pipeline;
- Recycled water pumping station located on the east side of Fire Road within LADWP easement;
- Regulator Valve and Relief Valve System located adjacent to the pump station;
- Bolt-up Steel recycled water storage tank with a capacity of 1 million gallons located southeast of the existing Tank 114;
- Removal of the steel structure and wooden roof of the existing Tank 114 and;
- Appurtenant facilities for the pipelines.

NAME AND ADDRESS OF APPLICANT IF OTHER THAN CITY AGENCY

FINDING: See attached Initial Study for Mitigation Measures Imposed

NAME OF PERSON PREPARING THIS FORM:	**TITLE:**	**PHONE:**
Irene Paul	Environmental Specialist	(213) 367-3509
ADDRESS: 111 N. Hope Street, Room 1044 Los Angeles, CA 90012	**SIGNATURE (Official)** Charles C. Holloway, Manager of Environmental Planning and Assessment	**DATE**

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SECTION 1
Project and Agency Information

1.1 Project Title and Lead Agency

Project Title: Griffith Park South Water Recycling Project

Lead Agency Name and Address:
Los Angeles Department of Water and Power
Environmental Planning and Assessment
111 North Hope Street, Room 1044
Los Angeles, CA 90012

Contact Person and Phone Number:
Irene Paul
Environmental Planning and Assessment
(213) 367-3509

Project Sponsor's Name and Address:
Los Angeles Department of Water and Power
Environmental Planning and Assessment
111 North Hope Street, Room 1044
Los Angeles, CA 90012

California Environmental Quality Act

The California Environmental Quality Act (CEQA) applies to proposed projects initiated by, funded by, or requiring discretionary approvals from state or local government agencies. The proposed Griffith Park South Water Recycling Project constitutes a project as defined by CEQA (California Public Resources Code Section 21000 et seq.). The CEQA Guidelines Section 15367 states that a "Lead Agency" is "the public agency which has the principal responsibility for carrying out or approving a project." Therefore, LADWP is the lead agency responsible for compliance with CEQA for the proposed project.

As lead agency for the proposed project, LADWP must complete an environmental review to determine if implementation of the proposed project would result in significant adverse environmental impacts. To fulfill the purpose of CEQA, an Initial Study was prepared to assist in making that determination. Based on the nature and scope of the proposed project and the evaluation contained in the Initial Study environmental checklist (contained herein), LADWP, as the lead agency, concluded that a Mitigated Negative Declaration (MND) was the proper level of environmental documentation for this project. The Initial Study shows that impacts caused by the

proposed project are either less than significant or significant but mitigable with incorporation of appropriate mitigation measures as defined herein. This conclusion is supported by CEQA Guidelines Section 15070, which states that an MND can be prepared when "(a) the initial study shows that there is not substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment, or (b) the initial study identifies potentially significant effects, but (1) revisions in the project plans or proposals made by, or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur; and (2) there is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment."

The MND was circulated for public review from October 25, 2013 to December 2, 2013. The purpose of the public review period was to provide interested public agencies, organizations, and individuals the opportunity to comment on the contents and accuracy of the document. The MND and the Notice of Completion were distributed to the California Office of Planning and Research, State Clearinghouse. The MND was distributed to interested or involved public agencies and organizations for review. The MND was made available for general public review at LADWP, Environmental Affairs Division (111 North Hope Street, Room 1044), Los Feliz Library (1874 Hillhurst Avenue), Atwater Village Library (3379 Glendale Boulevard), Silver Lake Library (2411 Glendale Boulevard), and Central Library (630 West Fifth Street). In addition, the MND was available online at: http://www.ladwp.com/envnotices.

This Final MND contains comments and responses to comments received on the Draft MND. These comments and responses are presented in Section 4, Response to Comments on the Mitigated Negative Declaration. Revisions and clarifications made in response to comments and information received on the Draft MND, as well as other changes necessitated by modifications to the proposed project, are listed in Section 3, Clarifications and Modifications. Text which has been removed is shown with a ~~strikethrough~~ line, while text that has been added is shown as <u>underlined</u>.

Following the public review of the Draft MND, LADWP has made several minor modifications or clarifications to the description of the proposed project. These project modifications or clarifications have been incorporated into this Final MND, and are included in the environmental analysis presented in Section 2, as appropriate. The modifications to the proposed project are also discussed in Section 3, Clarifications and Modifications. In accordance with CEQA Guidelines Section 15073.5, the modifications and revisions to the proposed project and the environmental analysis in this Final MND would not result in a requirement to recirculate the MND.

1.2 Project Background and Objectives

1.2.1 Project Background

The Los Angeles Department of Water and Power (LADWP) proposes to expand its existing recycled water system within the Central Los Angeles area with the Griffith Park South Water Recycling Project ("GPSWRP" or "proposed project"). The proposed project would expand the existing water recycling system supplied by the Los Angeles-Glendale Water Reclamation Plant by extending the Greenbelt Water Recycling distribution line south to serve the Roosevelt Golf Course as its prime customer. The Roosevelt Golf Course currently uses potable water for irrigation. It is anticipated the golf course could require approximately 310 acre feet per year (AFY) of recycled water for irrigation.

In addition, the proposed project would increase recycled water storage to accommodate future expansion of the recycled water system to other areas of Griffith Park and the Los Feliz area, including the Greek Theatre, landscaped medians within Vermont Avenue and Hillhurst Avenue, the Griffith Park Nursery and Horticultural Center, picnic areas in the immediate vicinity, and the bird sanctuary. The proposed project would expand storage for future customers by an average of 60 AFY of recycled water.

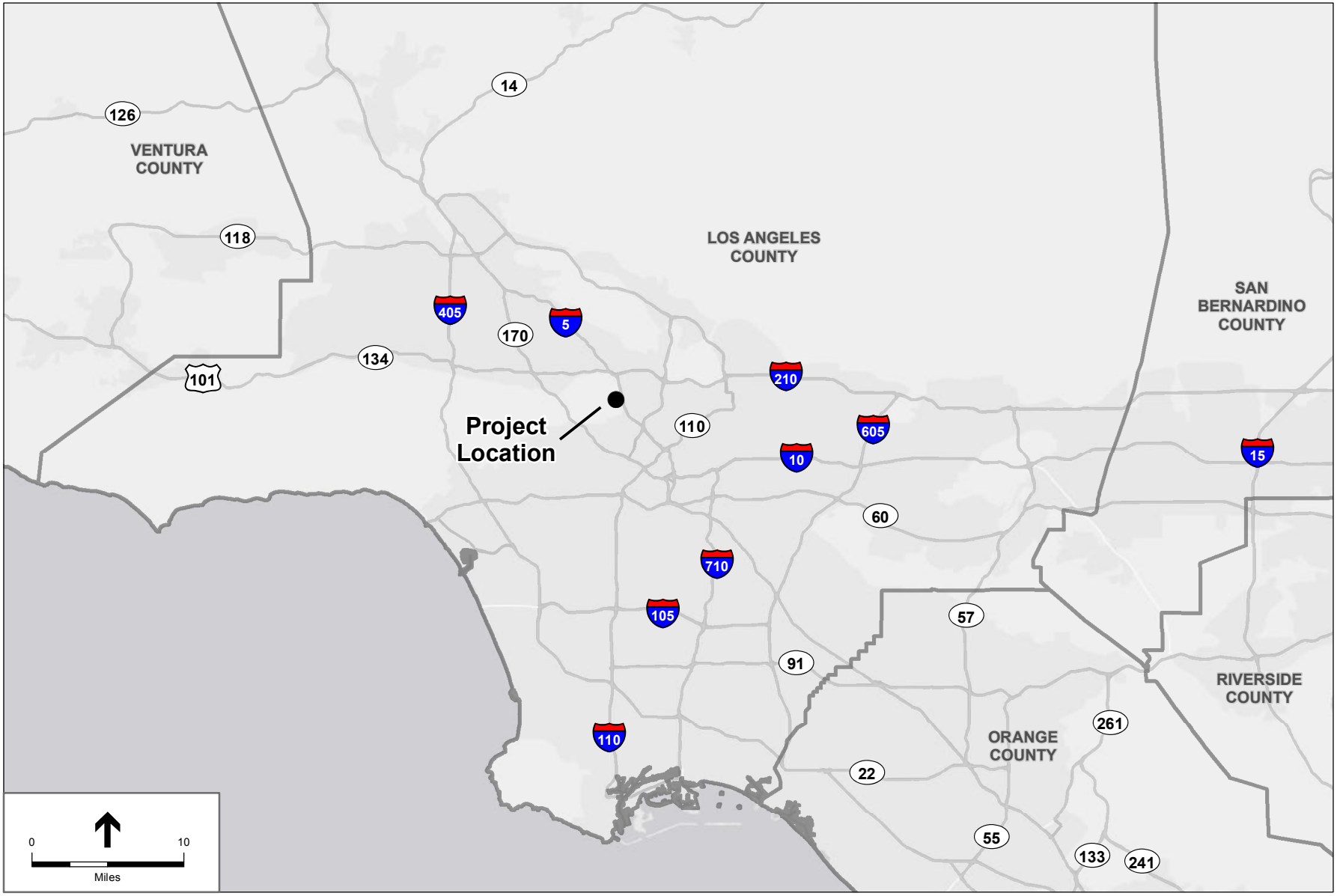
1.2.2 Project Objectives

The objectives of the proposed project are to:

- Improve the reliability of the City's potable water supply through use of water recycling;
- Utilize recycled water generated by Los Angeles-Glendale Reclamation Plant for irrigation at Roosevelt Golf Course;
- To serve as a near-term project as part of the City of Los Angeles Water Supply Action Plan, titled "Securing L.A.'s Water Supply" published May 2008;
- To increase recycled water storage capacity to serve future uses in Griffith Park and the Los Feliz area of the City.
- To utilize the horizontal directional drilling (HDD) method to avoid significant impacts to aesthetic, biological and recreational (public uses) resources.

1.3 Project Location

The proposed project is located within Griffith Park in the northeastern area of the City of Los Angeles; specifically, the proposed project is located in the Hollywood community planning area **(Figure 1)**. Griffith Park is owned and operated by the City of Los Angeles Department of Recreation and Parks (~~LA~~RAP). It is bounded by State Route (SR) 134 to the north, Interstate 5 (I-5) to the east, Los Feliz Boulevard to the south, and the Interstate 101 (I-101) to the west **(Figure 2)**.



SOURCE: ESRI

Griffith Park South Water Recycling Project . 211490.27

Figure 1

Regional Location

Source: ESRI

Griffith Park South Water Recycling Project. 211490.27

Figure 2

Project Vicinity

The proposed project would connect to the existing Greenbelt Recycled Water pipeline and would extend the pipeline to the proposed pump station to the east of Fire Road, east of the Merry-Go-Round and south of the old zoo picnic area. At the proposed pump station, the proposed pipeline would continue to the foot of Fern Canyon Nature Trailhead to the proposed recycled water storage tank near the existing Tank 114 site on Vista Valle Drive. The last segment of the proposed project would be located downhill of the proposed tank and would connect with an existing pipeline terminating at an existing parking lot of the Roosevelt Golf Course. Another pipeline designated as a potable back-up would extend from the existing Grade Potable System to fill the proposed recycled water storage tank. These facilities would allow for future expansion of the recycled water system serving Griffith Park.

1.4 Project Description

The proposed project would extend the use of recycled water system within the Hollywood Community Planning Area of the City of Los Angeles. Implementation of the proposed project would extend the existing Greenbelt Water Recycling distribution line south to serve the Roosevelt Golf Course, which is a prime customer for recycled water.

The proposed project would involve the construction of recycled water pipelines, a water pump station, a regulator valve, and a recycled water storage tank **(Figure 3)**. Proposed project facilities include:

- Proposed recycled water pump house station to be located on the east side of Fire Road. There would be one pump house, two operating pumps and one back-up pump. A minimum flow of 1,400 gallons per minute (gpm) would be required to fill the proposed recycled water tank in 12 hours. Each pump would have 150 horsepower.
- 2,100 linear feet of 12-inch pipeline, connecting the exiting Greenbelt pipeline to the proposed pump station east of Fire Road;
- 2,500 linear feet of 12-inch pipeline from the proposed horizontal directional drilling (HDD) launching pit to the HDD receiving pit near the proposed recycled water storage tank;
    - HDD is being used because trenching or excavating is not practical since it would result in significant biological and aesthetic impacts.
    - With use of HDD, most of the ground surface remains undisturbed, lessening the environmental impact of placing pipeline.
    - Trenchless technology protects natural resources such as sensitive habitats by drilling underneath the resources.
- 1,400 linear feet of 12-inch pipeline from the HDD receiving pit to the proposed recycled water storage tank;
- 700 linear feet of 12-inch pipeline from the proposed recycled water tank to the existing 1,200 linear feet 8-inch steel pipeline, connecting to the Roosevelt Golf Course;

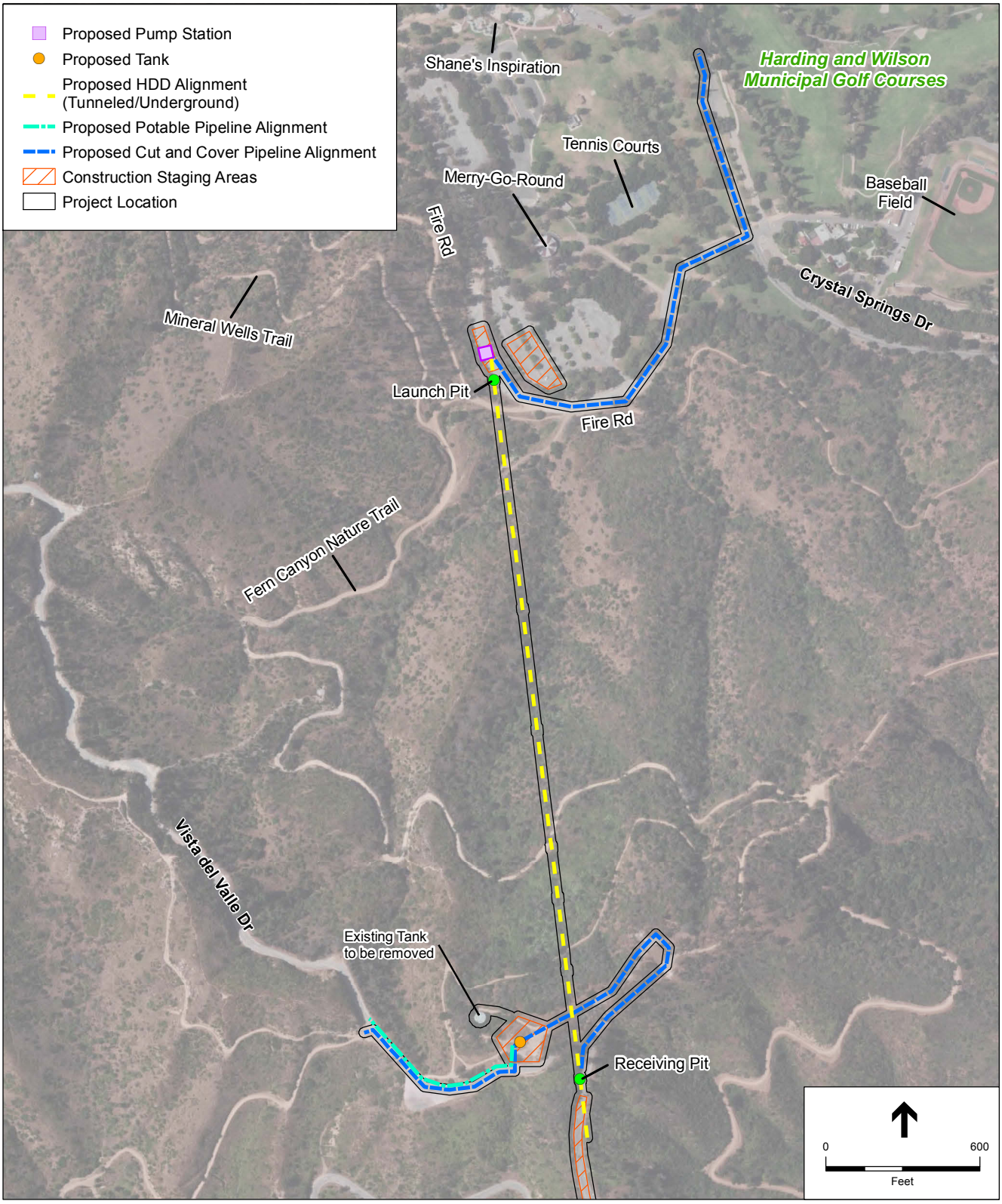
- 700 linear feet of 12-inch pipeline from the proposed recycled water tank to the existing 1,544 foot Grade Potable System to be used as a potable back-up pipeline;
- Regulator Valve and Relief Valve System located adjacent to the pump station;
- Bolt-up steel recycled water pumping station located on the east side of Fire Road within LADWP easement;
- Steel recycled water storage tank with a capacity of 1 million gallons to be located southeast of the existing Tank 114;
- Removal of the steel structure and wooden roof of the existing Tank 114 and;
- Appurtenant facilities for the pipelines.

The proposed project would begin at the existing Greenbelt Water Recycling pipeline located near the Park Center Picnic Area ~~Merry-Go-Round area along Crystal Spring Drive in~~ of Griffith Park~~; located in Park Center between the Los Angeles Zoo and the Los Feliz park entrance~~. The Park Center is located on Crystal Spring Drive between Griffith Park Drive and the Fire Road adjacent to the Ranger Station and Griffith Park Visitor Center. Approximately 2,100 linear feet of a 12-inch pipeline would connect to an existing 8-inch recycled water pipeline located southwest of the intersection of Griffith Park Drive and Crystal Springs Drive. The pipeline would be installed along Crystal Springs Drive, commencing in the area in front of the park center. The pipe would head south bound on Crystal Springs Drive, continue east along the Fire Road, and terminate near the entrance to Fern Canyon Trail above the Merry-go-round where it will connect with the proposed Griffith Park South Pump Station ~~within the existing roadway and connect north of the proposed recycled water pump station located on the east side of Fire Road~~. ~~The pipeline would connect to a new pump station.~~ From the pump station, the pipeline would continue for approximately 2,500 feet and would be installed using the HDD construction method (~~tunneling~~ trenchless drilling method beneath the surface) to avoid aesthetic, biological, and recreational (on the public) impacts within the park. Approximately 1,400 linear feet of 12-inch pipeline would be constructed from the HDD receiving pit to a new recycled water storage tank, to be located southeast of existing Tank 114.

The existing 8-inch service main for the Roosevelt Golf Course would be severed and split into two separate pipelines. A new 12-inch ductile iron pipeline would be connected to the downstream portion of the severed 8-inch pipeline and extend approximately 700 linear feet to the new recycled water storage tank. This pipeline would supply the Roosevelt Golf Course with recycled water.

A new 12-inch welded steel pipeline would connect to the upstream portion of the severed location and extend approximately 700 linear feet to the proposed recycled water storage tank. This pipeline would serve as a potable water back-up to the proposed storage tank.

A recycled water pump station would be located on the east side of Fire Road within a LADWP easement. It would be located on a 40-foot by 50-foot pad. The proposed pump station would consist of two operating pumps and one back-up pump. A minimum flow of 1,400 gallons per minute (gpm) would be required to fill the proposed recycled water tank in 12 hours. The base



Source: ESRI

Griffith Park South Water Recycling Project. 211490.27

Figure 3
Project Site

elevation of the pump station would be at approximately 525 feet. ~~to~~ The base elevation of the recycled water tank is approximately 1,110 feet, the tank fill elevation would be at ~~of~~ approximately 1,136 ~~1,140~~ feet and the top of the tank would at 1,140 feet; the head required to lift the water would be 615 feet. The pumps ~~station would be approximately 10 feet high and~~ would be enclosed within a one-story small housing structure to protect and secure the pump station. The pump station (e.g., small one-story housing structure) would be approximately 10 feet high.

The recycled water storage tank would replace the existing steel Tank 114 and would be approximately 30 feet high. The existing Tank 114 would be demolished, aboveground appurtenances removed, and the existing foundation abandoned. The proposed recycled water storage tank would have a holding capacity of 1 million gallons that would provide additional capacity for future customers that have been identified in the Recycled Water Master Planning Documents. ~~The proposed recycled water storage tank would be partially buried 10 feet below the existing ground elevation and would have a base elevation of approximately 1,110 feet.~~ The proposed recycled water storage tank would also have a potable water back-up ~~supplied from the existing 1,544 foot grade potable water system~~ supplied from the existing 1,544 service zone.

Appurtenant facilities such as valves, vaults, air gaps, flow meters, discharge systems and mechanical equipment would be developed to support the new system. The new system would also include disinfection monitoring systems, a corrosion control system, provisions for water treatment, and provisions for security standards.

1.4.1 Project Construction

The proposed cut and cover pipelines would be installed using trenching construction techniques, except for the segment extending from Fern Canyon Nature Trailhead to the top of the hill near Cedar Grove ~~proposed recycled water tank~~. This segment would be installed using HDD method, which is a trenchless method of installing underground pipeline and has minimal impact on the surrounding area. HDD is being proposed to avoid closing of the Fern Canyon Nature Trail and to prevent adverse visual impacts at Griffith Park.

The construction of the proposed project would commence on ~~January~~ March ~~02,~~ 2014 and is anticipated to be completed by March ~~October 09,~~ 2017~~5~~. The project would be constructed in ~~three~~ four separate phases, including the cut and cover pipeline phase, the HDD pipeline phase, and tank and pump station phase. The cut and cover pipeline phase will include two separate segments or phases; Phase 1 along Crystal Springs Drive and Fire Road and Phase 2 at the top of the hill on Vista Del Valle Drive from Cedar Grove to Vista View point where the proposed tank would be located. Each phase ~~component~~ is described separately below. Regional access to the construction site would be via I-5. Construction access to the various parts of the alignment would be via Crystal Springs Drive from the I-5, Western Heritage Way from SR-134, and Fire Road adjacent to Crystal Springs Drive in Griffith Park. The proposed project would prepare a traffic control plan that would be reviewed and approved by the Los Angeles Department of Transportation.

Cut and Cover Pipelines

Construction activities would avoid disrupting activities at Griffith Park. The cut and cover pipeline phase will include two separate segments or phases; Phase 1 along Crystal Springs Drive and Fire Road, and Phase 2 at the top of the hill on Vista Del Valle Drive from Cedar Grove to Visa View point where the proposed tank would be built. The construction staging and parking area for Phase 1 of the cut and cover pipeline installation would be located near the Merry-Go-Round parking area, with access from Fire Road (Figure 3). Construction staging and parking area for Phase 2 of the cut and cover pipeline installation would be located at near the proposed tank and the exiting Tank 114, with access from Vista Del Valle Drive (Figure 3). Construction would occur five days a week, between the hours of 8:00 a.m. to 3:00 p.m.

Construction equipment needed for installation of the cut and cover pipeline would include air compressors, backhoes, concrete/ industrial saws, cranes, dumpers/ tenders, haul trucks, off-highway trucks, pavers and paving equipment, signal boards, and a welding truck. Approximately a total of 18 workers per day would be required for the construction of Phase 1, and a total of 21workers for the construction of Phase 2. ~~In addition, a total of 18 truck trips per day is required for Phase 1 and 2 construction.~~ A total of 36-39 trucks trips per day for cut and cover pipeline construction would occur.

Phase 1 of cut and cover pipeline ~~phase~~ along Crystal Springs Drive/Fire Road would commence on ~~January 02,~~ March 2014 and is anticipated to be completed by ~~February 28,~~ May 2014. Phase 2 of the cut and cover pipeline ~~phase~~ along Vista Del Valle Drive would commence on ~~August 3,~~ March 2015 and is anticipated to be completed by ~~October 09,~~ June 2015. The construction is phased to avoid early summer park activities.

Tank and Pump Station

Construction activities for the recycled water storage tank and pump station would avoid disrupting Griffith Park activities. The construction staging and parking areas would be located along Fire Road near the proposed pump station and on Vista Del Valle near the proposed tank. Construction would occur five days a week, between the hours of 7:00 a.m. to 4:00 p.m.

Construction equipment needed for installation of the recycled water storage tank, and pump station would include backhoes, cement and mortar mixers, cranes, dumpers/ tenders, an excavator, loaders, pavers, pumps, rollers, rubber tired dozers, a gas engine vibrator, and a welder. It is anticipated that the maximum number of construction truck trips required per day is 91 trips for tank construction and 12 trips for pump station construction. Approximately 145 workers per day would be required for construction of the proposed project; this includes approximately 91 workers for construction of the tank and 54 workers for construction of the pump station.

The recycled water storage tank phase would commence on August 2014 and is anticipated to be completed by March 2017. The ~~and~~ pump station phase would commence on ~~March 02,~~ August 2015 and is anticipated to be completed by June ~~24,~~ 2016~~5~~.

Horizontal Directional Drilling (HDD) Pipeline

Construction activities for the HDD pipeline would avoid disrupting Griffith Park activities. There would be three construction staging areas for the HDD pipeline construction, with one staging area for the proposed HDD launching pit located near the Merry-Go-Round parking area, with access from Fire Road (Figure 3). The other two staging areas would be located near the proposed HDD receiving pit, with one staging area located closer to existing Tank 114 and one staging area located closer to the proposed receiving pit (Figure 3). Both HDD receiving pit staging areas would have access from Vista Del Valle Drive. Parking areas for the HDD pipeline construction phase would be located along Fire Road near the pump station and on Vista Del Valle Drive near the existing tank site. Construction would occur five days a week, between the hours of 7:00 a.m. to 4:00 p.m.

Construction equipment needed for installation of the HDD pipeline construction phase would include air compressors, backhoes, bore/ drill rigs, forklifts, haul trucks, pavers, sweepers/ scrubbers, vacuum excavator, flatbed truck, and a slurry pump. It is anticipated that a maximum of 15 construction truck trips would be required per day. Approximately seven workers per day would be required for the proposed HDD pipeline construction phase.

The ~~proposed project~~ HDD pipeline construction phase would commence on January ~~6,~~ 2015 and is anticipated to be completed by March ~~02,~~ 2015.

1.4.2 Project Operation

Operation and maintenance activities for the proposed project would be minimal and limited to intermittent pipeline, pump station and recycled water storage tank maintenance, generally not to exceed once per month. The proposed project would require minimal maintenance and monitoring related to periodic inspection for possible leaks and repairs. I~~i~~nfrequent routine maintenance activities would occur on average once per quarter.

1.5 Alternatives Considered but Withdrawn

LADWP has been working collaboratively with ~~LA~~RAP to find and implement the best possible project with the least disruptive impacts to Griffith Park environment and operations. Alternatives considered included two alternatives for the tank, four alternative pipeline alignments, and one alternative pump station location. The proposed project was found to have the least impact to Griffith Park and surrounding areas, as well as minimized the impact to park visitors and park operations.

Retrofitting existing Tank ~~1~~114, rather than complete replacement, was considered. However, structural and corrosion testing led to the conclusion that this alternative was not suitable, as extensive retrofitting was required. An alternative new tank location was also considered at the footprint of existing Tank 114. However, due to the large size of the tank and the proximity of several oak trees, it was decided that the proposed site was more suitable, since removal of oaks would ~~not~~ be ~~required~~ avoided.

Four alternate pipeline alignments were considered. Two alternative pipeline routes were considered for the segment of pipeline between the Recycled Water Greenbelt line and the foot of Fern Canyon Nature Trailhead where a pump station was proposed. These were not chosen as the preferred alternative due to construction difficulties (impacts to park operations) and increased costs. Two alternative pipeline routes were considered for the segment of pipeline between the foot of Fern Canyon Nature Trail and tank. These alternatives were not chosen as the preferred alternative due to complexities in construction and potential disruptive impacts on park visitors.

An alternative location for the pump station at the foot of Fern Canyon Nature Trail was considered. This was not chosen as the preferred alternative since the pipeline would have required alignment segments of a larger 16 inch pipeline size.

1.6 Discretionary Approvals Required for the Project

Table 1 presents a preliminary list of the agencies and entities with discretionary approval over the GPSWRP.

TABLE 1
DISCRETIONARY PERMITS POTENTIALLY REQUIRED

Agency	Permits and Authorizations Required	Activities Subject to Regulations
California State Division of Occupational Safety and Health	• Permit for trench construction	• Any excavation activity five feet or deeper
State Water Resources Control Board, Division of Water Quality	• State Wide Construction General Permit	• Construction on a site of more than one acre
County of Los Angeles Department of Public Works	• Discharge Permit	• Construction dewatering and hydrostatic test water discharge into the storm system and channels
City of Los Angeles Department of Public Works, Bureau of Engineering	• Excavation Permit • Class 'A' Permanent Resurfacing Permit	• Any trench excavation activities within public right-of-way • Excavations of pipeline construction and substructure investigation (potholing)
City of Los Angeles Department of Public Works, Bureau of Sanitation	• Industrial Waste Permit	• Pump or chlorine discharge water
City of Los Angeles Department of Public Works, Bureau of Street Services, Street Tree Division	• Permit for removal or trimming of trees	• Removal of any tree on City streets or public property. Removal of more than three trees may require review and approval by the Board of Public Works.
City of Los Angeles Department of Recreation and Parks, Board of Recreation and Parks Commission	• Memorandum of Understanding	• Between LADWP and ~~LA~~RAP concerning ownership of facilities; and easements and right-of-entry permit for facilities to be installed

Agency	Permits and Authorizations Required	Activities Subject to Regulations
California Department of Public Health	• Submittal of design drawings	• Submittal of design drawings
County of Los Angeles Department of Public Health	• Submittal of on-site drawings	• Coordinate with LACDPH to conduct cross-connection inspection during construction and testing prior to going into service
Los Angeles Department of Transportation	• Traffic Control Plan	• Permit oversized vehicles • Construction Traffic

Environmental Factors Potentially Affected

The proposed project could potentially affect the environmental factor(s) checked below. The following pages present a more detailed checklist and discussion of each environmental factor.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology, Soils and Seismicity
☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials	☐ Hydrology and Water Quality
☐ Land Use and Land Use Planning	☐ Mineral Resources	☐ Noise
☐ Population and Housing	☐ Public Services	☐ Recreation
☐ Transportation and Traffic	☐ Utilities and Service Systems	☐ Mandatory Findings of Significance

DETERMINATION: (To be completed by Lead Agency)

On the basis of this initial study:

☐ 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 revisions in the project have been made by or agreed to by the project proponent. 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.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, no further environmental documentation is required.

Signature _____ Date _____

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Manager of Environmental Assessment and Planning
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SECTION 2
Environmental Checklist

2.1 Aesthetics

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
1.	**AESTHETICS — Would the project:**				
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d)	Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	☐	☐	☐	☒

Discussion

a) **Less than Significant Impact.** The proposed project would be located within Griffith Park, which is located at the eastern tip of the Santa Monica Mountain Range. Although the project area and immediate project vicinity is open space, it has not been designated as a scenic vista by the Los Angeles General Plan or the Griffith Park Master Plan. Additionally, there are no designated scenic vistas identified in the City of Los Angeles General Plan or Hollywood Community Plan. Construction of the proposed project would be located entirely onsite within Griffith Park and would not impact the surrounding area. At the end of construction, the pipelines would be located entirely underground. The pump station housing facility would have a maximum height of 10 feet and recycled water storage tank would have a maximum height of ~~2~~30 feet above grade~~, because the tank would be partially buried 10 feet below the existing ground elevation~~. The base elevation of the recycled water tank is approximately 1,110 feet, the tank fill elevation would be at approximately 1,136 feet and the top of the tank would at 1,140 feet; the head required to lift the water would be 615 feet. Because there are no designated scenic vistas in the project vicinity, the proposed project would not adversely impact scenic vistas. The impacts to scenic vistas would be less than significant.

b) **No Impact.** There are no officially-designated State Scenic Highways in the vicinity of the project site, nor are there any known scenic resources, rock outcroppings, or historic buildings in proximity to the project site. State Route 210 (SR-210), located

approximately eight miles east of the project site, is an Eligible State Scenic Highway, but is not an officially designated as Caltrans scenic highway. State Route 110 (SR-110), also known as the Arroyo Seco Parkway, is located approximately six miles south from the project site and is designated by the City of Los Angeles General Plan as a Historic Parkway. Due to the proposed project's distance from the SR-210 and the SR-110, proposed project would not be visible. Therefore, the proposed project would not impact scenic resources within a designated State Scenic Highway corridor. No impacts would occur.

c) **Less than Significant Impact.** The existing visual character of the proposed project and surrounding area is characterized as open park space on hilly terrain with dense vegetation. Construction activities and installation of the proposed pump station and proposed recycled water storage tank would alter the visual character of the proposed project site. In order to reduce impacts to the utilization of the Fern Canyon Nature Trail segments and the aesthetics of the open space scenery, the proposed pipeline would be installed using the HDD method. This would ensure the nature trail impacts, although short-term, would not negatively impact the trail during and after construction and. At the end of construction, the proposed pipeline would be located entirely underground and would not impact the visual character of the Fern Canyon Nature Trail and surrounding area. The proposed aboveground pump station would be housed in an enclosed structure that would be painted and finished to complement the existing area. The proposed recycled water storage tank would also be painted and finished to complement the existing area and would replace the older existing tank structure. At the end of construction, the project site would be returned to pre-construction conditions, with exception of the new aboveground facilities. As a result, the proposed project would not substantially degrade or change the existing visual character or quality of the site and its surroundings. Therefore, impacts to visual character of the site and its surroundings would be less than significant.

d) **No Impact.** Construction activities would occur during permitted daylight hours between 7:00 a.m. and 6:00 p.m. and no nighttime construction is anticipated. The use of external night lighting would not be required. At the end of construction, the proposed pipeline would be located entirely underground and the aboveground structures would be painted and finished to complement the existing area. No security lighting is proposed for project operations. The proposed storage tank would be painted with non-reflective material. Therefore, implementation of the proposed project would not result in a substantial new source of light or glare that could affect nighttime views in the area. No impact would occur.

2.2 Agricultural and Forest Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
2. AGRICULTURAL AND FOREST RESOURCES — In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. **Would the project:**				
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?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) 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?	☐	☐	☐	☒

Discussion

a) **No Impact.** According to the City of Los Angeles General Plan, the project site has a land use designation of OS (Open Space) and is zoned as OS (Open Space). The OS zooming identifies uses for open space including parks and recreation facilities, nature reserves, closed sanitary landfill sites, public water supply reservoirs, and water conservation areas. Areas near the proposed project site are also designated and zoned OS. The project area was not previously used as agricultural land. According to the California Resources Agency Farmland Mapping and Monitoring Program, there is no Prime Farmland, Unique Farmland, or Farmland of Statewide Important within or adjacent to the project site.[1] Therefore, no impacts would occur.

b) **No Impact.** The project site is designated and zoned as Open Space. No agricultural uses are identified on site and the site is not under a Williamson Act contract. Therefore, the

[1] Source: Farmland Mapping and Monitoring Program , http://www.conservation.ca.gov/dlrp/fmmp/Pages/Index.aspx. Accessed 6/18/13.

proposed project would not conflict with agricultural zoning or a Williamson Act contract and no impact would occur.

c) **No Impact.** The project site is designated and zoned as Open Space. The project site and adjacent lands are not zoned for forest land, timberland, or timberland zoned for timberland production. The project area was not previously used for forest land or timberland. Thus, no impacts would occur to lands zoned for forest land or timberland.

d) **No Impact.** The project site is designated and zoned as Open Space. The project site is not located on forest land or zoned as forest land. Construction and installation of the pipeline, recycled water storage tank, and pump station would not convert forest land to non-forest land. Therefore, no impacts to forest land would occur.

e) **No Impact.** See responses 3.2 (a) and (d) above. The proposed project would not convert potential farmland or forest land to non-agriculture/non-forestry use. Therefore, no impacts would occur to agriculture or forestry resources.

2.3 Air Quality

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
3.	**AIR QUALITY —** Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. **Would the project:**				
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☒	☐	☐
b)	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒	☐	☐
c)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e)	Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

Discussion

a) **Less than Significant Impact with Mitigation Incorporated.** The proposed project is located in the South Coast Air Basin, which is under the jurisdiction of the South Coast Air Quality Management District. The purpose of SCAQMD is to enforce federal, state, and local air quality regulations to ensure federal and state air quality standards are met. The South Coast Basin has been designated by the State and the United States Environmental Protection Agency (USEPA) as a non-attainment area with respect to the state and federal standards for ozone, particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$) and lead. Additionally, the basin is designated as a nonattainment area with respect to the state standard for nitrogen dioxide. In 2012, SCAQMD prepared the 2012 Air Quality Management Plan (AQMP) as a blueprint for actions to improve air quality within the basin.

The proposed project would involve short-term construction activities that include trenching, which could generate emissions of particulate matter and ozone precursors. However, the proposed project would comply with applicable rules, ordinances, plans, and policies that would minimize emissions during the short-term construction activities, such as SCAQMD Rule 403 that requires fugitive dust emission control measures to be implemented to adequately prevent visible dust from leaving the property and to reduce PM_{10} and $PM_{2.5}$ emissions consistent with the AQMP. In addition, Mitigation Measures AQ-1 through AQ-4 would be implemented to reduce impacts to less than significant levels. As a result, implementation of the proposed project would not interfere with or obstruct implementation of the applicable air quality plan.

b) **Less than Significant Impact with Mitigation Incorporated.** The SCAQMD has established numerical air quality significance thresholds to quantitatively evaluate air quality impacts.

The proposed project construction emissions would result in a significant impact if regional emissions from both direct and indirect sources would exceed any of the threshold levels in Table 2. The thresholds in Table 2 include localized emission thresholds for emission located near sensitive land uses such as residences and hospitals where people may be assumed to be present for many hours over time or have weaken respiratory systems and therefore at risk for exposure to substantial pollutant concentrations. The propose project pipeline alignments, pump station and tank would not be located within 1,000 feet of sensitive land uses and therefore temporary localized pollution exposure from construction activity is not a concern and these localized emission thresholds would not be applicable to this analysis.

TABLE 2
SCAQMD DAILY CONSTRUCTION EMISSIONS THRESHOLDS

Criteria Pollutant	Regional Emissions (pounds per day)	Localized Emissions (pounds per day)[a]
Volatile Organic Compounds (VOC)	75	--
Nitrogen Oxides (NOX)	100	80
Carbon Monoxide (CO)	550	498
Sulfur Oxides (SOX)	150	--
Fine Particulates (PM2.5)	55	3
Particulates (PM10)	150	4

[a]Localized thresholds based on 25-meter receptor distance and a one-acre project site.

SOURCE: SCAQMD, 2013.

The proposed project includes installation of 12-inch pipeline using open trench techniques as well as HDD. The project would also install a proposed pump station and replace a water storage tank. Construction equipment would include an air compressor, backhoes, saws, cranes dump trucks, excavators, haul trucks, pavers, signal boards and accessory vehicles. Construction activities for pipeline ~~and pipeline~~ installation and pump and tank improvements would create short-term temporary air quality impacts resulting from construction equipment, worker trips, and truck hauling trips. Approximately ~~18~~ 36-39 haul truck round-trips would occur per day during ~~Phase 1 and 2~~ cut and cover pipeline installation and approximately 21 roundtrip per day generated by construction workers. ~~HDD activities and pump station and tank replacement would generate 48 haul truck round-trips per day and approximately 122 round trips per day generated by construction workers.~~ Approximately 15 haul truck round-trips would occur per day during HDD pipeline installation and approximately 7 roundtrip per day generated by construction workers. Approximately 103 haul truck round-trips would occur per day during tank replacement and pump station construction and approximately 145 roundtrip per day generated by construction workers. **Table 3** presents the

worst case daily emissions which would occur during phase 1 pipeline installation in 2014 due to overlapping pipeline installation and paving activities. As shown in **Table 3**, projected emissions from vehicles and construction equipment and truck and worker trips would be below significance thresholds and would therefore not result in a significant impact. In addition, SCAQMD Rule 403 requires that fugitive dust emission control measures be implemented to adequately prevent visible dust from leaving the property and to reduce PM_{10} emissions. LADWP contractors would be required to comply with Rule 403. Implementation of Mitigation Measures **AQ-1** through **AQ-4** would further reduce air quality dust emissions during construction.

TABLE 3
MAXIMUM DAILY EMISSIONS FROM PROJECT CONSTRUCTION
(pounds per day)

	Estimated Emissions (lbs/day)					
Activity	**VOC**	**NO_x**	**SO_2**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Pipeline Trenching and Paving	8.8	68.3	0.06	41.5	6.1	4.5
SCAQMD Significance Thresholds	*75*	*100*	*150*	*550*	*150*	*55*
Significant Impact (Yes or No)	No	No	No	No	No	No

Project construction emissions estimates for off-road equipment were calculated using CalEEMod Version 2013.2. See **Appendix A C** for data emission sheets.

SOURCE: ESA, 2013.

Upon completion of construction activities, operation of the proposed project would not include components that would generate emissions that would impact the air quality of the area. Operations and maintenance activities including pipeline inspection, maintenance, and/or repairs would be minimal resulting in negligible emissions that would not exceed significance thresholds. Therefore, operational impacts related to air quality would be less than significant.

Mitigation Measures

AQ-1: Construction areas in unpaved easements and staging areas shall be sprayed with water as necessary during construction to prevent excessive amounts of dust; preferably in the late morning and after work is done for the day.

AQ-2: Construction vehicles shall be limited to 15 mph on unpaved roads and construction areas.

AQ-3: All dust generating activities (e.g., trenching and excavation) shall cease during periods of high winds (i.e., greater than 25 mph averaged over one hour) or during Stage 1 or Stage 2 dust episodes.

AQ-4: Construction vehicles shall limit and minimize idling time whenever possible.

Significance after Mitigation: Less Than Significant

c) **Less than Significant Impact.** Proposed project construction would result in both dust and exhaust emissions from trenching activities during the construction and installation of the water pipeline and ancillary facilities. SCAQMD Rule 403 requires that fugitive dust emission control measures be implemented to adequately prevent visible dust from leaving the property and to minimize $PM_{2.5}$ and PM_{10} emissions. LADWP would be required to comply with Rule 403. As discussed above in 3.3 (b), the proposed project would not significantly increase emissions of criteria pollutants or its precursors. Implementation of Mitigation Measures AQ-1 through AQ-4 would further reduce project-related emissions. As the proposed project would not exceed the maximum daily emissions of criteria pollutants (Table 3), would comply with all applicable rules and regulation, and implement recommended mitigation measures, the proposed project would not result in a cumulative considerable net increase of any criteria pollutant. Therefore, impacts would be less than significant.

d) **Less than Significant Impact.** The proposed project would not emit air pollutants in substantial concentrations that would affect nearby sensitive receptors. The proposed project would be located over 500 meters (1,640 feet) from the nearest sensitive receptor. As shown in Table 3, projected emissions for vehicles and construction equipment would be substantially below significance thresholds and would therefore not result in a significant impact. No sensitive receptors are located in proximity to the project area. In addition, operational emissions would be negligible. Because no sensitive receptors are located in proximity to the project area and construction emissions would be short-term, temporary, and well below significance thresholds, impacts would be less than significant.

e) **Less than Significant Impact.** Project construction could result in construction-related emissions that could generate detectable odors. However, these odors would be short-term and temporary and no sensitive receptors are located in proximity to the project area. Operation of the proposed project would not emit odors that would affect a substantial number of people. Therefore, the proposed project would not result in significant sources of odor during construction or operation and impacts would be less than significant.

2.4 Biological Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
4. BIOLOGICAL RESOURCES — Would the project:				
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 Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
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 Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
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?	☐	☐	☐	☒
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?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
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?	☐	☐	☐	☒

Discussion

A Biological Resource Technical Report was prepared for the proposed project and can be found in Appendix A of this document. A biological field reconnaissance survey was conducted for the proposed project to gather baseline data on the potential for sensitive biological resources to occur within or adjacent to the project site (ESA, 2013). ESA biologists conducted a biological resource reconnaissance survey (or habitat assessment) to identify natural resources present or with the potential to occur on and adjacent to the Project site. Due to the extensive urban setting surrounding Griffith Park, the ESA biologist queried the CNDDB within a standard United States Geologic Survey 7.52Quadrangle, nine quad search and then assessed existing scientific data on whether populations of special status species are currently within Griffith Park. During the habitat assessment, biologists characterized and quantified on-site and adjacent plant communities and noted any wildlife species present during the site evaluation. The information obtained during the habitat assessment along with information gathered in the literature and database reviews were used to determine the potential for sensitive biological resources to occur within the Project site.

Plant Communities and Habitats

Three native plant communities are found within the limits of the Project site: Southern California black walnut woodland, undifferentiated chaparral scrub, and coast live oak woodland (**Figure 4**). Ornamental landscaping, as well as developed and urban-agriculture areas also exists within the Project area. The three native plant communities within the Project area show similar species composition, although dominance and cover vary significantly. The Southern California black walnut woodland and the undifferentiated chaparral scrub were impacted by the 2007 Griffith Park fire. The vegetation burned in 2007 is in varying degrees of recovery within the Project site, with the trees and shrubs recovering through epicormic or basal burl shoots.

Wildlife

Wildlife species observed or expected to occur on the Project site are typical for the coastal range foothills. Reptile species common to the area include western whiptail (*Aspidoscelis tigris*), western fence lizard (Sceloporus occidentalis), side-blotched lizard (*Uta stansburiana*), gopher snake (*Pituophis catenifer*), coachwhip (*Masticophis flagellum*), and western diamondback (*Crotalus atrox*). Mammals species typically found within or adjacent to the Project site include California ground squirrel (*Spermophilus beechyi*), Audubon's cottontail (*Sylivagus audubonii),* mule deer (*Odocoileus hemionus*), gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), and coyote (*Canis latrans*). Bird species typically associated with the habitat types found within the Project area include mourning dove (*Zenaida macroura*), California quail (*Callipepla californica*), common raven (*Corvus corax*), red tailed hawk (*Buteo jamaicensis*), and wrentit (*Chamaea fasciata*); however, dozens of other resident and migratory bird species are expected to occur within the project vicinity. The only amphibian expected to occur within the Project area is the arboreal salamander (*Aneides lugubris*), a species not dependent on a seasonal body of water for reproduction.

Natural Communities of Special Concern

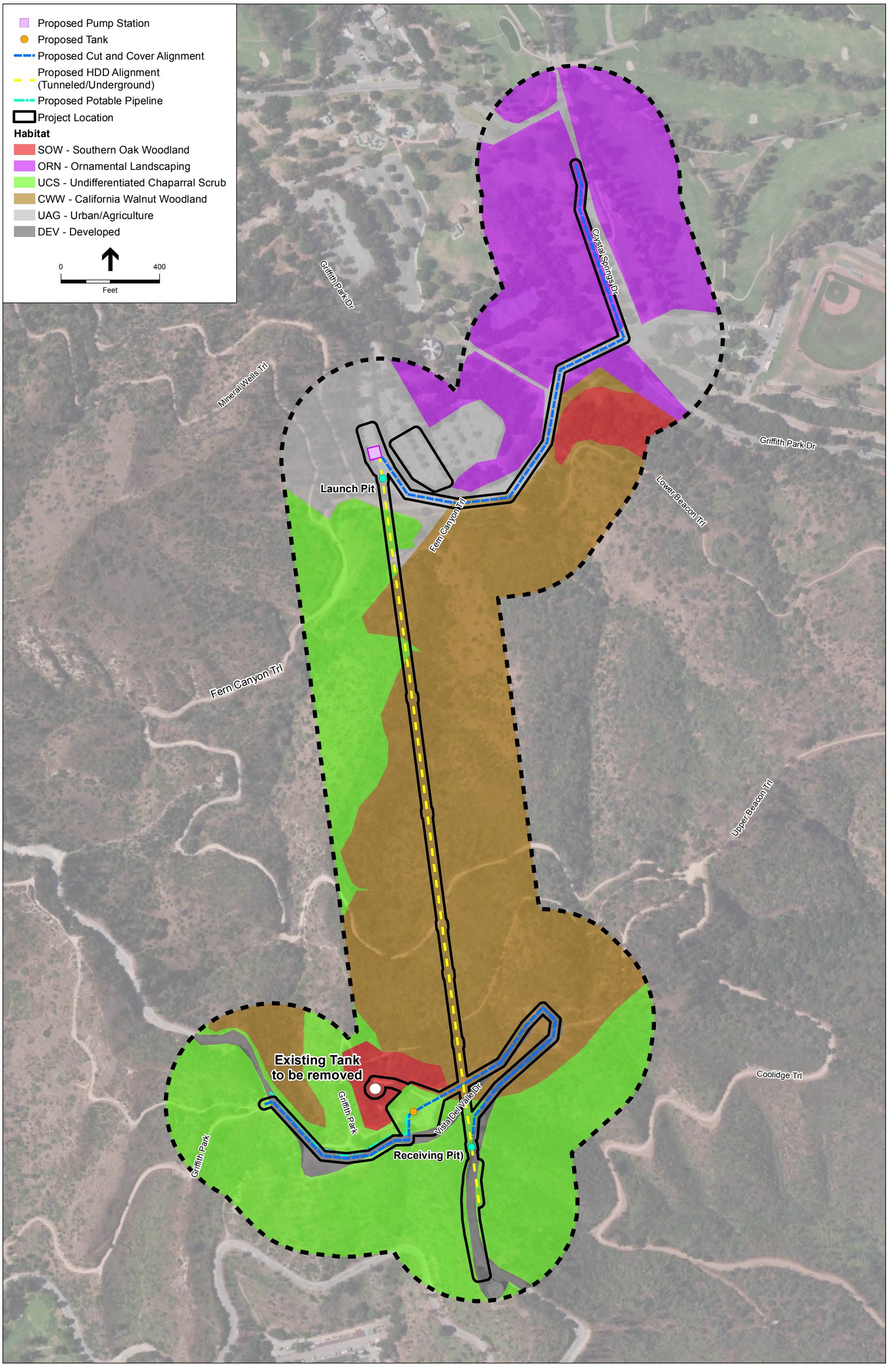
Certain natural communities are afforded special status as identified in local or regional plans, policies, or regulations, or designated by the CDFG and USFWS. A literature review and CNDDB 9 quad search revealed that the only natural community within the Project area is Southern California Black Walnut Woodland.

Special-Status Wildlife Species

Several common wildlife species have been recorded on the project site while the coast horned lizard, silvery legless lizard, coastal whiptail, western mastiff bat, and the silver haired bat are special-status species with a moderate or greater potential to occur within the project site.

Coast Horned Lizard, Coastal Whiptail, and Silvery Legless Lizard

According to a biological inventory report prepared for the Trust for Public Land (Cooper, 2009), the coast horned lizard has recently (2009) been confirmed as a rare resident on high ridges of Griffith Park and Cahuenga Peak, where it formerly (until the 1970s) occurred throughout the park's lower slopes and canyons. The coast horned lizard has become extremely rare in the greater Los Angeles metropolitan region, having been extirpated from the entire coastal plain and most of the San Fernando and San Gabriel Valleys. A combination of broad scale habitat



SOURCE: Bing; CalVeg, 2013.

Griffith Park South Water Recycling Project . 211490.27

Figure 4
Habitat Types

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modification and the displacement of native harvester ants by non-native Argentine ants have been implicated in declines within Los Angeles County. The coastal whiptail has been found in the upper portions of Griffith Park in open, sparsely vegetated areas. Suitable habitat for the silvery legless lizard is present within the oak woodland and chaparral communities, particularly where there is a layer of leaf litter present. ~~Both~~ All reptile species have the potential to occupy portions of the project site.

Bats

The western mastiff, silver haired, and hoary bat were found to have moderate potential to utilize the Project site for foraging while the silver haired and hoary bat have potential to utilize the trees within the project site for breeding. The western mastiff bat is typically considered a cliff-dwelling species, and is known to roost in large maternal colonies. The species is widespread throughout much of western North America, with declines concentrated in the Los Angeles basin. Western mastiff bats will utilize large boulders and buildings as roosting habitat. The species typically forages at a much higher altitude than other species, and is known to range considerable distances from roosting locations during evening foraging. Potentially suitable foraging habitat exists within the general vicinity of the Project site, particularly in the mixed scrub and walnut woodland. No roosting habitat is present within the Project site. The silver-haired and hoary bats are solitary species that roost in a variety of tree species for both roosting and reproduction. These tree roosting species have a moderate potential for roosting on oak, walnut, and Australian silk oak trees within the Project Site.

Special-Status Plants

Rare and special-status plants have been recorded in the region of the project site and have a potential to be present. This includes Nevin's barberry *(Berberis nevinii)*, Slender mariposa lily *(Calochortus clavatus var.gracilis)*, Plummer's mariposa lily *(Calochortus plummerae)*, Southern tarplant *(Centromadiaparryi ssp. Australis)*, Many stemmed dudleya *(Dudleya multicaulis)*, Mesa horkelia *(Horkelia cuneata ssp. Puperula)*, and Davidson's bush-mallow *(Malacothamnus davidsonii)*. Of these potential rare and special-status plants that may have a potential to occur, five species are perennial species. Two species are perennial herbs; two are bulbiferous perennials, and one a semideciduous shrub. Plummer's mariposa lily and the slender mariposa lily are two bulbiferous perennials that have known occurrences in Griffith Park (Cooper, 2009). Davidsons' bush mallow is a rare semideciduous perennial shrub that has a moderate potential to occur within the project site; however, no bush mallow was observed during the site reconnaissance. The precipitation levels for the 2012-2013 rainy season were below average in Southern California and all the plants with a moderate or greater potential to occur would be either drought deciduous or would have bloomed earlier in the season under these drier than average environmental conditions.

a) **Less than Significant Impact with Mitigation.**

Habitat

Project construction activities would occur primarily on developed access roads and previously disturbed areas. However, areas within the construction footprint contain

native plant communities. The proposed project would result in the permanent removal and the temporary disturbance of native vegetation that is utilized by both common and rare wildlife. In addition, construction activities would also result in an increase noise level that could directly impact the existing habitat. Indirect impacts to habitat could include alterations to hydrological regimes such as runoff and percolation, increased erosion and sediment transport, and the introduction of non-native and invasive weeds. Nonetheless, project-related construction activities are not expected to result in a substantial loss of habitat that would significantly affect the ability of species to disperse and persist throughout the project area and the surrounding habitats due to the project primarily utilizing existing roads and developed/urban-agriculture areas for the installation of project components. The Project will potentially impact 0.59 acres of Southern California black walnut woodland, 1.29 acres of chaparral scrub, and 0.24 acres of coast live oak woodland. **Table 4** below provides a breakdown of anticipated impacts to habitat from Project activities.

TABLE 4
PROJECT IMPACTS TO HABITAT

Plant Community/Habitat type	Impacts (acres)
Southern California black walnut woodland	0.59
Undefined coastal chaparral	1.29
Coast live oak woodland	0.24
Ornamental landscaping	0.64
Developed/Urban-Agriculture	1.80/2.38
TOTAL	**6.94**

As shown in Table 4, project activities are not expected to result in a substantial loss of sensitive habitat that would affect the ability of species to disperse and persist throughout the Project area and the surrounding habitats. This is due to the Project primarily utilizing existing roads and developed/urban-agriculture areas for the installation of Project components. In addition, use of the HDD method for the construction of the proposed HDD pipeline significantly reduces impacts to sensitive biological resources by avoid direct impacts to the habitat. Implementation of Mitigation Measures **BIO-1** and **BIO-2** would reduce potential impacts to natural habitats during construction activities.

Special-Status Wildlife Species

Reptiles

The Project site contains suitable scrub and woodland habitat for the coast horned lizard, coastal whiptail, and the silvery legless lizard. However, no impacts would likely occur to these species during Project activities because the majority of habitat impact is to disturbed and/or developed areas where they are less like to be present. In addition, during mobilization of construction equipment, reptile species within the area would

likely disperse due to increased noise level. Direct impacts to special status reptile species could produce direct impacts to reptile species due to project implementation. These impacts would be reduced to less than significant levels with the implementation of M~~m~~itigation M~~m~~easure **BIO-3**, which requires preconstruction clearance surveys.

Bats

Although the Project site contains suitable roosting habitat for hoary and silver-haired bats, it is unlikely that these species would be impacted by Project implementation because the Project would limit any potential tree trimming activities during the bat breeding season from March to August. Additionally, potential roosting sites may occur within the trees found within the Project site; however, no direct impact to oak, walnut, and Australian silk oak trees are anticipated to be removed by the proposed project. Potential roosting habitat for the western mastiff bat can be found within existing buildings and crags adjacent to the Project site in Griffith Park. Potential roost sites would not be impacted by Project activities because no existing buildings and crags would be impacted by the project. The project includes removal of the existing water tank and replacement with a larger recycled water tank in the same general area. Therefore, if the existing water tank was used as a potential roosting site, the tank would be replaced for a similar use at project completion. Direct impacts to the tree roosting species (hoary, silver-haired bat) will be minimized by conducting any pruning activities outside of the breeding season for bats as specified by CDFW. Implementation of mitigation would reduce impacts to less than significant levels. With implementation of ~~m~~Mitigation ~~m~~Measure~~s~~ BIO-3, these potential roosting sites will be identified prior to project implementation and implementation of mitigation would reduce impacts to less than significant levels.

Special-Status Plant Species, Protected Trees, and Natural Communities

No special-status plant species were found within the Project site during the habitat assessment. However, focused surveys for special status plants were not conducted. Due to the below average rainfall in 2012-2013 rainfall season, the drought deciduous species (multistemmed dudleya, mesa horkelia, and Plummer's mariposa lily) may not have been prevalent during the habitat assessment. Southern California black walnut woodland was identified within the Project site during the habitat assessment. The Southern California black walnut woodland within and adjacent to the Project site contained two tree species protected by the City Tree Protection Ordinance; coast live oak and southern California black walnut. Project elements as well as the access roads contain or are adjacent to suitable habitat for five special status plants as well as an undetermined number of City protected trees. Coast live oaks and Southern California black walnut are found surrounding the existing water tank proposed to be removed. An evaluation of each individual tree was not conducted during the habitat assessment. However, the Project would not remove these trees as part of the tank removal; no impact to these protected trees would occur during Project implementation. Implementation of Mitigation Measures **BIO-45** and **BIO-~~5~~6** would reduce these impacts to a level less than significant. Therefore, impacts would be less than significant with mitigation.

Nesting Birds

A number of resident and seasonal bird species have the potential to nest on the project site in trees and adjacent vegetation. Direct mortality of small to medium sized avian species would not likely occur during construction of the proposed project. However depending on the timing of construction, eggs and nestlings of bird species with small, well-hidden nests could be subject to loss, which would result in a violation of the Migratory Bird Treaty Act (MTBA) and Fish and Game Code. Impacts to nesting birds would result primarily through direct and indirect disturbances such as through habitat clearing, earth removal, grading, digging, and equipment movement. Implementation of Mitigation Measure **BIO-~~5~~6** would reduce the potential for injury or mortality of nesting birds during construction through construction timing, establishment of nesting buffers, and worker environmental training. Therefore, impacts to nesting birds would be less than significant with mitigation.

Mitigation Measures

BIO-1: Worker Environmental Awareness Program. Prior to construction, a Worker Environmental Awareness Program shall be implemented that shall include the following:

- The Project proponent should provide Worker Environmental Awareness Program (WEAP) training to all personnel working on the site during Project construction with a qualified biologist. The training shall include a pre-construction meeting that would review all special-status plants, protected wildlife and protected trees within the Project site to promote their awareness and to review mitigation measures for avoiding impacts, and all responsible parties.

BIO-2: Habitat Revegetation. Project construction activities will occur primarily on developed access roads and previously disturbed areas, and will disturb approximately 0.59 acres of California walnut woodland, 1.29 acres of chaparral scrub, and 0.24 acres of coast live oak woodland. Because there are specific areas within the construction footprint that contain native plant communities, the following mitigation measure is recommended to reduce potential impacts from the removal of native habitat during construction activities:

- Prior to the clearing or removal of native habitat, the first six inches of soil shall be salvaged or stockpiled for reuse once construction activities are completed. Once construction is completed, areas within the project footprint that clear or remove native habitat and that are no longer required to be kept clear of vegetation shall be revegetated with salvaged soil and locally sourced material, as approved by the project biologist. The restored habitat areas will be monitored for one year subsequent to the cessation of project activities to ensure the reestablishment of native habitat.

BIO-~~2~~3: Special-status Wildlife. Special-status wildlife species such as the coast horned lizard, coastal whiptail, the silvery legless lizard, hoary and silver-haired bats may occur

within scrub and woodland habitat and within the trees. Therefore, the following mitigation measures are recommended:

- Construction activities shall be minimized to the greatest extent feasible in the construction area to minimize potential impacts to special status wildlife species including, reptiles and roosting bats.
- Prior to ground disturbing activities within scrub and woodland habitat, a qualified biologist shall conduct pre-construction clearance surveys. If any ground dwelling species are identified within proposed construction zones, they shall be captured and/or moved beyond the construction zone in neighboring scrub and woodland habitat.
- Tree trimming activities shall be conducted during the non-breeding season for hoary and silver-haired bats (March – August). If tree trimming activities need to be conducted during bat breeding season, a qualified biologist shall conduct a bat survey of the affected trees. Tree trimming shall not be allowed if trees have active bat roosts.

BIO-~~3~~4: Special-Status Plants. Special-status plant species such as the Mesa horkelia may occur in openings within black walnut woodland. Additionally, Slender mariposa lily and Plummer's lily may occur along exposed ridgelines and clearings in undifferentiated chaparral scrub. There is a potential for Davidson's bush mallow to occur in clearings on mesic slopes and canyon bottoms. Therefore, the following mitigation measures are recommended:

- Every effort should be made to minimize vegetation removal and permanent loss at the Project construction site. In order to minimize disruption to special-status plant habitat, the construction contractor shall utilize existing parking lots and disturbed roadways for construction staging areas.
- Prior to the implementation of Project construction activities, a qualified botanist shall identify whether any mesa horkelia or other sensitive plant species are present within the proposed Project footprint. If any plant or suitable habitat for the plant is present, the biologist will assist in avoiding impacts to the greatest extent feasible, by staking and flagging areas to be avoided by construction activities.

BIO-~~4~~5: Protected Trees. The presence of protected trees shall be considered during Project construction activities including the creation of staging areas, as well as trenching, staging areas and demolition. The following mitigation measures are recommended to avoid impacts to protected trees with the project area:

- A qualified arborist shall be present to identify and demarcate protected trees (and its protected zones [~~i.e., driplines~~ 1 ½ feet times the diameter of the trunk at breast height]) within the entire Project site that have the potential to be impacted by construction activities and to assist in guiding construction activities to avoid or minimize impacts to protected trees.

- Situate all project elements including trenching paths, on existing access routes or within the clearing outside of the ~~drip lines~~ protection zones of protected trees ~~to the greatest extent feasible~~ to prevent damage to protected trees.
- If any impacts to city protected trees are unavoidable, then the qualified arborist shall assist in processing a permit application with the City of Los Angeles Urban Forestry Division. In such circumstances, a permit shall be obtained prior to performing any project activities that may impact a protected tree.

BIO-~~5~~6: Nesting Birds. A number of resident and seasonal bird species have the potential to nest on the Project site in trees and adjacent vegetation. The following mitigation measures are ~~recommended~~ required to reduce potential impacts to nesting birds during construction activities:

- If construction is scheduled to occur during the non-nesting season (September through January 31), no preconstruction surveys or additional measures are recommended. If construction is scheduled to occur during the breeding season (February 1–August 31), ~~it is recommended that~~ a qualified wildlife biologist shall conduct preconstruction surveys of all potential nesting habitats within 500 feet of construction activities. At least one surveys should be conducted no more than 3 days prior to construction activities.
- If active nests are found, no-disturbance buffers shall be implemented around each nest based on the species and location of the nest as determined by a qualified biologist. A general buffer distance generally includes 500-feet around any confirmed active raptor nest and a 250-foot buffer around nests of passerine bird species protected in accordance with the MBTA and/or Fish and Game Code. The buffers should be implemented until it is determined by a qualified wildlife biologist that young have fledged and the nest is determined to be inactive.

b) **Less than Significant Impact with Mitigation.** The proposed project is not located within or adjacent to any riparian habitat and no impacts would occur to riparian habitats. As previously discussed, the proposed project is located within a Southern California Black Walnut Woodlands in which two tree species, coast live oak, southern California black walnut, are protected by the City Tree Protection Ordinance. As previously discussed, the proposed project could impact protected trees and natural communities, though impacts are anticipated to be minimal as no tree removal is expected. Implementation of Mitigation Measures BIO-2 through BIO-4 would ensure impacts to habitats and natural communities are minimized to less than significant level.

c) **No Impact.** The proposed project is not located within or in the vicinity of federally protected wetlands. Therefore, no impact would occur.

d) **Less than Significant Impact with Mitigation.** The proposed project would not substantially interfere with the movement of native resident or migratory fish or wildlife species, or with established native or migratory wildlife corridors, or impede the use of native wildlife nursery sites. However, as previously discussed, a number of resident and

seasonal bird species have the potential to nest on the project site in trees and adjacent vegetation. Direct mortality of small to medium sized avian species would not likely occur during construction of the proposed project. However depending on the timing of construction, eggs and nestlings of bird species with small, well-hidden nests could be subject to loss. Therefore implementation of Mitigation Measures BIO-4 and BIO-5 would reduce the potential for injury or mortality of nesting birds during construction through construction timing, establishment of nesting buffers, and worker environmental training. Impacts would be less than significant with mitigation.

e) **Less than Significant Impact with Mitigation.** The proposed project would be subject to federal, state and local regulations. These include the Federal Endangered Species Act, Migratory Bird Treaty Act, Clean Water Act, Porter-Cologne Water Quality Control Act, CDFW Streambed Alteration Agreement, California Endangered Species Act, Native Plant Protection Act, County of Los Angeles General Plan, and the City of Los Angeles Protected Tree Ordinance. The proposed project would adhere to all related regulations to ensure that the proposed project would not conflict with existing regulation. Therefore, impacts would be less than significant.

f) **No Impact.** The proposed project is not located within an adopted Habitat Conservation Plan, Natural Community Conservation Plan (HCP/NCCP) or other approved local, regional, or state HCPs. However, the project area is located within the Griffith Park Significant Ecological Area (SEA) as defined by the County of Los Angeles. The SEA is described as an extensive, relatively undisturbed island of natural vegetation in an urbanized, metropolitan area. The SEA supports the coastal sage scrub, chaparral, riparian, and southern oak woodland plant communities typical for the interior mountain ranges of Southern California. The proposed project is also located within the Griffith Park Wildlife Management Plan area as defined by the Los Angeles Department of Recreation and Parks. While this plan is not an official designation, the ~~This~~ plan establishes a baseline in terms of known threats to wildlife and includes Best Management Practices (BMPs) that help assist the Los Angeles Department of Recreation and Parks staff in making land management decisions in Griffith Park and the surrounding open space areas. The proposed project would follow the recommended BMPs whenever applicable. In addition, the project would not alter land use and would not conflict with the provisions of the Griffith Park Wildlife Management Plan, and no impacts would occur.

2.5 Cultural Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
5. CULTURAL RESOURCES — Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Discussion

ESA cultural resources staff conducted a Phase I Cultural Resources Study (ESA, 2013) in order to identify and evaluate the potential for any historical or archaeological resources to be impacted as a result of the proposed project. The study included: (1) archival research; (2) a California Native American Heritage Commission (NAHC) Sacred Lands File (SLF) search; and (3) a pedestrian survey. As a result of the study, two historical resources were identified within the project area: Griffith Park (P-19-175297), and Vista Del Valle Drive. These two resources are described in detail below. In addition, the SLF search indicated that Native American cultural resources are known to be located within the project area; however, no specific location information was provided. No archaeological resources were identified within the project area.

An archival-level paleontological investigation was conducted for the proposed project (Paleo Solutions, 2013) and can be found in Appendix B of this document. The investigation included: Natural History Museum of Los Angeles County (NHMLAC) records search; geologic map review; and literature search. No fossil localities were identified in the project area; however, sensitive fossil-bearing formations were found to underlie some portions of the project site.

Identified Historical Resources

As a result of the study, two historical resources were identified within the project area: Griffith Park (P-19-175297) and Vista Del Valle Drive.

Griffith Park (P-19-175297) is the largest urban park in the City of Los Angeles, as well as in the Unites States, and includes approximately 4,000 acres of natural and landscaped features. The park opened in 1898 on land donated to the City of Los Angeles by Griffith J. Griffith, a successful land speculator. Griffith Park was previously determined eligible for listing in the National Register of Historic Places under Criterion A, is listed in the California Register of Historical Resources, and is therefore considered a historical resource under CEQA. The park was identified as a National Register-eligible district under the theme of Parks and Recreation. The park has figured prominently in the history of Los Angeles and has provided recreational

space for the surrounding community since its inception. The period of significance was identified as 1896-1944. Contributing features include Fern Dell, Mount Hollywood, Bird Sanctuary, Griffith Park Observatory and Planetarium, Los Feliz Adobe, Merry-Go-Round, Harding Golf Course Clubhouse, Swimming Pool and Building, Boys' Camp, and Mulholland Fountain. Non-contributing features include Los Angeles Zoo, Greek Theatre, Girls' Camp, Travel Town, and Autry National Center. Griffith Park (19-175297) encompasses the project area. Griffith Park is also designated as a Los Angeles Historic-Cultural Monument (No. 942).

Vista Del Valle Drive is a 3.8-mile two-lane scenic roadway completed in 1933. A segment of the roadway was documented in the project area. The road segment is composed of asphalt and measures approximately 2,150 feet in length by 35 feet wide. While Vista Del Valle Drive does not appear to be individually eligible for the National Register or California Register under Criteria A/1 through D/4, it does appear to be a contributor to Griffith Park as an integral part of the park. The roadway was constructed in 1933 (within the period of significance for Griffith Park) to provide a scenic route along the high line of Mount Hollywood, offering spectacular views of the San Fernando Valley, which is consistent with the theme of Parks and Recreation. Vista Del Valle Drive also appears to retain a sufficient degree of integrity to convey its significance. Therefore, Vista Del Valle Drive appears to be eligible as a contributing element to Griffith Park and is considered a historical resource under CEQA.

Unidentified Historical Resources

While no archaeological resources were identified within the project area, the SLF search did indicate that Native American cultural resources are known to be located within the project area; however no specific location information was provided. There remains the possibility that as yet unidentified archaeological resources that might be buried or otherwise obscured could be encountered as a result of project-related ground-disturbing activities. The project would involve cut-and-cover trenching up to two feet deep and three feet wide and excavation of launching/receiving pits up to a total of 189 cubic yards. These actions have the potential to unearth, expose, or disturb subsurface significant archaeological resources. Should archaeological resources be discovered, they may qualify as historical resources under CEQA.

a) **Less than Significant Impact with Mitigation:** Two historical resources, Griffith Park (P-19-175297) and Vista Del Valle Drive, were identified within the project area and will be impacted by the project. Modifications to Griffith Park and Vista Del Valle Drive could constitute a significant effect on the environment under CEQA. In general, a significant effect would occur if the project results in a substantial adverse change in the significance of a historical resource.

Significant impacts to Griffith Park are not anticipated as a result of the project. The project involves limited ground disturbance (primarily installation of pipelines within existing roadways or through the use of HDD) and construction of a new pump station and water tank. The water system has been continuously added to and improved over the years and project activities are consistent with previous actions within the park. These new actions will not materially alter the character of the park or change the use of the

park, nor will it impact any of the identified contributors to this resource. At the conclusion of the investigation, the park grounds will be largely unaltered and the park will continue to be used for public recreation. The physical aspects of integrity of Griffith Park would remain much as they do currently. Therefore, the project would not affect the resource's integrity and would not result in a substantial adverse change in the significance of Griffith Park. Consequently, the impacts anticipated to Griffith Park are considered less than significant.

Significant impacts to Vista Del Valle Drive are not anticipated as a result of the project. While the project would impact the road during construction through cut-and-cover trenching and installation of below-ground pipelines, these impacts would not result in changes to the character of the road or diminish its significance as a contributor to the Griffith Park. The project would not alter the alignment of the roadway and it would be returned to its pre-construction condition. The physical aspects of integrity of Vista Del Valle Drive would remain much as they do currently. Therefore, the project would not affect the roadway's integrity and would not result in a substantial adverse change in the significance of the roadway as a contributor to Griffith Park. Consequently, the impacts anticipated to Vista Del Valle Drive are considered less than significant.

While unlikely, there remains the possibility that as yet unidentified archaeological resources that may qualify as historical resources could be encountered as a result of project-related ground-disturbing activities. Impacts to unidentified archaeological resources that qualify as historical resources could constitute a substantial adverse change in the significance of a historical resource. With the incorporation of Mitigation Measures **CUL-1** and **CUL-2**, potential impacts to archaeological resources that qualify as historical resources would be reduced to less than significant.

Mitigation Measures

CUL-1: Pre-Construction Training. Prior to earthmoving activities, a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (U.S. Department of the Interior, 2008) shall conduct cultural resources sensitivity training for all construction personnel. Construction personnel shall be informed of the types of cultural resources that may be encountered, and of the proper procedures to be enacted in the event of an inadvertent discovery of archaeological resources or human remains (see CUL-6). LADWP shall ensure that construction personnel are made available for and attend the training and shall retain documentation demonstrating attendance.

CUL-2: Inadvertent Discoveries. In the event of the discovery of archaeological materials, the construction foreman shall immediately halt all work activities in the vicinity (within approximately 100 feet) of the discovery until it can be evaluated by a qualified archaeologist. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or tool-making debris; culturally darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish

remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-period materials might include stone or concrete footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. After cessation of earthmoving activities, the construction foreman shall immediately contact LADWP. Work shall not resume until authorized by LADWP and the qualified archaeologist.

If the qualified archaeologist determines that the discovery constitutes a significant resource under CEQA, preservation in place is the preferred manner of mitigation. In the event preservation in place is demonstrated to be infeasible, a detailed Cultural Resources Treatment Plan shall be prepared and implemented by a qualified archaeologist in consultation with LADWP. LADWP shall consult with appropriate Native American representatives in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric or Native American in nature. Archaeological materials recovered during any investigation shall be curated at an accredited facility. The report(s) documenting implementation of the Cultural Resources Treatment Plan shall be submitted to LADWP and to the SCCIC.

b) **Less than Significant with Mitigation:** No archaeological resources were identified within the project area as a result of the cultural resources study, therefore no impacts to resources qualifying as unique archaeological resources are anticipated. However, as mentioned above, the project involves ground-disturbing activities that could uncover resources qualifying as unique archaeological resources. With the incorporation of Mitigation Measures **CUL-1** and **CUL-2**, potential impacts to archaeological resources that qualify as unique archaeological resources would be reduced to less than significant.

c) **Less than Significant with Mitigation:** The paleontological investigation found that sensitive fossil-bearing formations underlie some portions of the project area (Aron and Kelly, 2013). The paleontological investigation can be found in Appendix B of this document. Earthmoving activities in any area identified as moderate to very high paleontological sensitivity has the potential to adversely impact paleontological resources. Implementation of Mitigation Measures **CUL-3** through **CUL-5** would reduce potential impacts to paleontological resources to less than significant.

Mitigation Measures

CUL-3: Preparation of Paleontological Resource Monitoring and Mitigation Plan and Pre-Construction Training. Prior to start of earthmoving activities associated with sensitive fossil-bearing formations located in the southern portion of the project site (includes portions of the proposed cut and cover pipeline, proposed potable pipeline, and proposed and existing water tanks), a qualified paleontologist shall prepare a Paleontological Resource Monitoring and Mitigation Plan (PRMMP) based on and consistent with information provided in *Paleontological Investigation Report of the Los Angeles Department of Water and Power Griffith Park South Water Recycling Project, Los Angeles, California* (Aron and Kelly, 2013). The PRMMP shall outline:

sensitive areas within the limits of the project that require paleontological resources monitoring and paleontological monitoring protocols; inadvertent discovery procedures; recovery and salvage measures for potentially significant fossil and microfossil discoveries; laboratory methods; and reporting and curation requirements.

The qualified paleontologist shall also conduct pre-construction worker environmental awareness training prior to construction activities associated with sensitive fossil-bearing formations located in the southern portion of the project site (includes portions of the proposed cut and cover pipeline, proposed potable pipeline, and proposed and existing water tanks). This training shall include information on what to do in case an unanticipated discovery is made by a worker. All construction personnel shall be informed of the possibility of encountering fossils, and instructed to immediately inform the construction foreman if any bones or other potential fossils are unexpectedly unearthed in an area where paleontological monitoring is not required. LADWP shall ensure that construction personnel are made available for and attend the training and shall retain documentation demonstrating attendance. This training may be conducted in coordination with training required under Mitigation Measure CUL-1.

CUL-4: Paleontological Monitoring. Full-time monitoring shall be conducted for all earthmoving activities associated with construction activities in areas of sensitive geologic formations, specifically the Miocene Monterey Formation and Topanga Formation in the southern portion of the project site (includes portions of the proposed cut and cover pipeline, proposed potable pipeline, and proposed and existing water tanks). The qualified paleontologist or his/her assignee shall have the authority to reduce monitoring once he/she determines the probability of encountering fossils has dropped below an acceptable level. Monitoring protocols shall be outlined in the PRMMP.

CUL-5: Inadvertent Discoveries. In the event of unanticipated discovery of paleontological resources associated with construction activities in areas of sensitive geologic formations, workers shall immediately cease all activity within a 20 foot radius of the discovery site and notify the construction foreman. The qualified paleontologist shall be called to assess the find, implement recovery measures if necessary, and determine if paleontological monitoring is warranted once work resumes. Inadvertent discovery measures shall be outlined in the PRMMP.

d) **Less than Significant with Mitigation:** No known cemeteries or other burial places are known to exist within the project area and the proposed project is unlikely to disturb human remains. However, because the proposed project would involve earthmoving activities, it is possible that such actions could unearth, expose, or disturb previously unknown human remains. With the incorporation of Mitigation Measure **CUL-6**, which requires compliance with State Health and Safety Code Section 7050.5 and PRC Section 5097.98, potential impacts to human remains would be less than significant.

Mitigation Measure

CUL-6: If human remains are encountered, LADWP shall halt work in the vicinity (within 100 feet) of the find and contact the Los Angeles County Coroner in accordance with Public Resources Code (PRC) Section 5097.98 and Health and Safety Code Section 7050.5. If the County Coroner determines that the remains are Native American, the NAHC shall be notified, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC Section 5097.98 (as amended by AB 2641). The NAHC shall designate a Most Likely Descendant (MLD) for the remains per PRC Section 5097.98. Until RAP as the landowner has conferred with the MLD regarding their recommendations, as prescribed in PRC Section 5097.98, taking into account the possibility of multiple human remains, LADWP shall ensure that the immediate vicinity where the Native American human remains are located is not damaged or disturbed by further development activity, according to generally accepted cultural or archaeological standards or practices~~, until the landowner has discussed and conferred with the MLD regarding their recommendations, as prescribed in PRC Section 5097.98, taking into account the possibility of multiple human remains~~.

2.6 Geology, Soils, and Seismicity

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
6. GEOLOGY, SOILS, AND SEISMICITY — Would the project:				
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.)	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☒	☐	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☒	☐	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☐	☒

Discussion

a.i) **Less than Significant Impact.** ~~The project area is located in the eastern Santa Monica Mountains, which is an east-west trending range. Geological formations in the proposed project area are of Cenozoic age, chiefly Neogene and Quaternary.~~ The proposed project is not located within an Alquist-Priolo Earthquake Fault Zone. The easternmost part of the Santa Monica Mountains ~~is~~ includes~~d~~ ~~within~~ Griffith Park, which straddles the southern boundary of the Burbank Quadrangle. The Verdugo Mountains extend across the northeastern third of the Burbank Quadrangle.The nearest fault line is the Hollywood Fault, located approximately 0.6 miles south of the project area. The Hollywood Fault is considered a westward extension of the Raymond fault and is located relatively parallel to the Santa Monica fault. The fault line extends in an east-northeast direction for approximately nine miles through Beverly Hills, West Hollywood, and Hollywood to the Los Angeles River and I-5 Freeway. The most recent surface rupture along this fault was during the Holocene period (SCEDC, 2013).The proposed project is not located in a City of Los Angeles designated Fault Rupture Study Zone.

The proposed project facilities would be designed and constructed in compliance with the City of Los Angeles Bureau of Engineering Standard Project Specifications. Compliance with applicable regulations would ensure safe and ~~efficient~~ effective project implementation within areas subject to seismic movement. Per standard practice, site-specific geotechnical and geological investigations that focus on these potential hazards are performed as part of project design studies. No habitable structures would be developed, and implementation of the proposed project would not result in an increase in population ~~on the project site~~ subject to seismic standards. Construction activities would be short-term and operational activities would be limited to infrequent maintenance activities. The project designs would be subject to Special Publication 117, "Guidelines for Evaluating and Mitigating Seismic Hazards in California." Conformance with ~~this publication~~ these guidelines in addition to the California Building Code (CBC) requirements would provide for protection from fault rupture. Therefore, the proposed project would not substantially expose people or structures to adverse effects related to ground rupture, and impacts would be less than significant.

a.ii) **Less than Significant Impact with Mitigation.** As stated above in 2.6(a)(i), the proposed project is not located within an established Alquist-Priolo Earthquake Fault Zone. The Hollywood Fault is the nearest active fault approximately 0.6 miles south of the project site. The project site is within a seismically active region and earthquakes in the region could produce strong ground shaking on the project site. However, the proposed project would not develop habitable structures and proposed facilities would comply with applicable CBC requirements and development regulations. Operational activities would be limited to infrequent maintenance and exposure to substantial adverse effects involving seismic ground shaking on site would be limited.

The pipelines and recycled water tank would be designed to accommodate site-specific ground motions. Standard geotechnical and structural design criteria required in the CBC would reduce excessive earthquake ~~response~~ effects and minimize potential damage or collapse of the pipelines and recycled water tank. CBC requirements for the pipelines may include flexible pipe joints, shortened pipe lengths, automatic isolation valves, installation of the pipelines inside a protective casing, and shallow or above-ground installation of the pipelines. Any and all of these requirements will be used in the final design of the pipeline. Compliance with the CBC would minimize the potential for damage from strong ground shaking. Therefore, with the incorporation of Mitigation Measure **GEO-1**, the proposed project would result in a less-than-significant impact with mitigation related to groundshaking.

Mitigation Measures

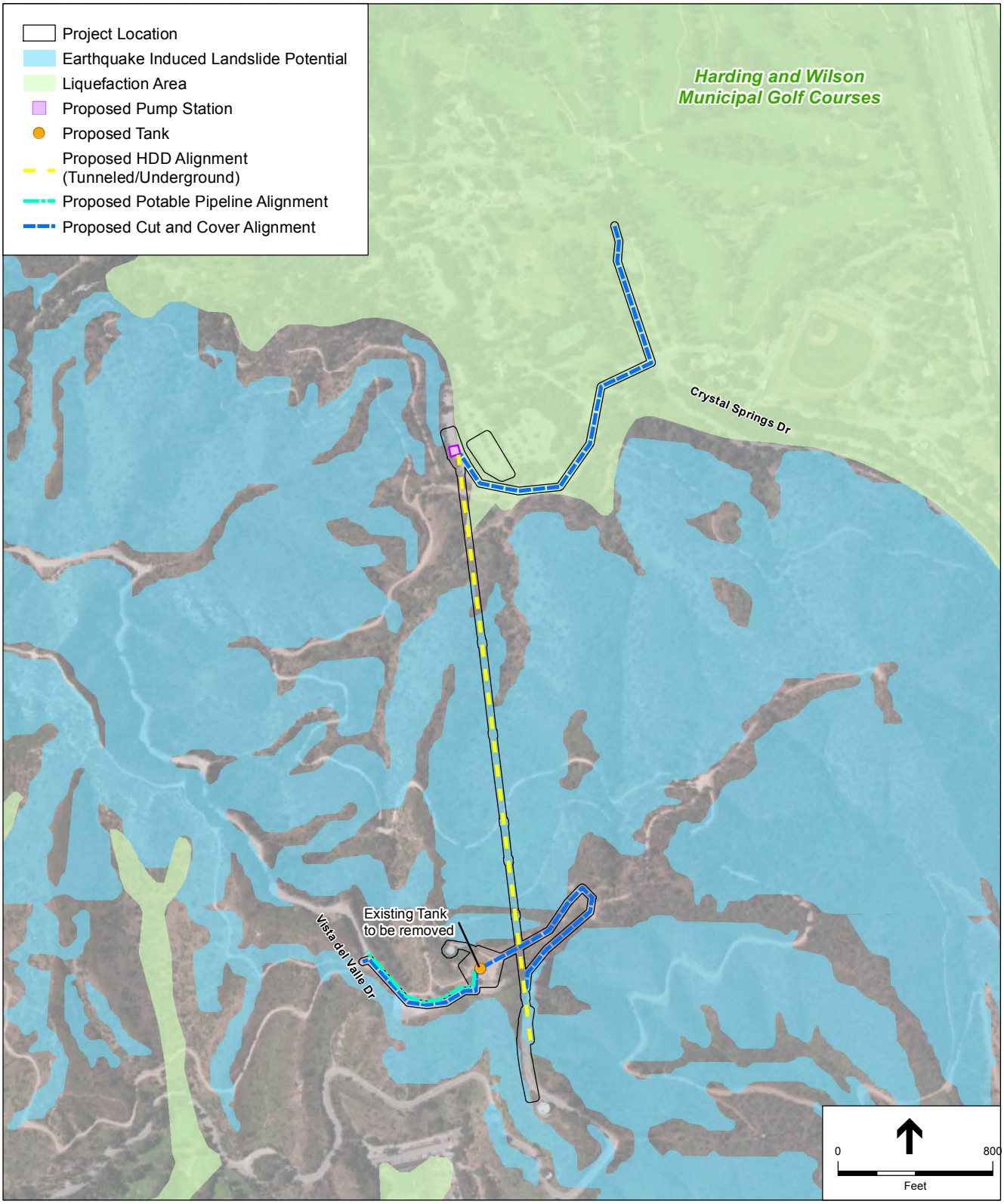
GEO-1: Prior to the approval of construction plans for the project, including pipelines, pump station, and storage tank, LADWP shall complete a design-level geotechnical investigation. The geotechnical evaluation shall identify soil properties needed for the development of site-specific design criteria. R~~ecommendations made as a r~~esults of the~~se~~

investigations will require specific design elements to protect new structures from seismic hazards ~~shall become incorporated into the proposed project final design~~.

a.iii) **Less than Significant Impact.** Liquefaction occurs in saturated and loose soils in areas where the groundwater table is 50 feet or less below ground surface (bgs). During an earthquake, a sudden increase in high core water pressure can cause soils to lose strength and behave as a liquid. As shown on **Figure 5,** the proposed recycled water storage tank and pump station, and HDD tunneling would not be located within an area identified with the potential for liquefaction ~~area~~. However, segments of the proposed pipeline up to the pump station. ~~are located in areas designated as having liquefaction potential.~~ The pump station would also be ~~adjacent to this~~ potentially at risk. All infrastructure improvements in the State of California must comply with the seismic design parameters contained in the CBC seismic requirements. Compliance with the CBC standards in the design and construction of the proposed project would reduce potential damage to the new infrastructure from liquefaction. Therefore, the proposed project would not expose people or structures to potential substantial adverse effects related to liquefaction and impacts would be less than significant.

a.iv) **Less than Significant Impact with Mitigation.** Landslides are characterized as deep-seated ground failures, in which a large section of a slope detaches and slides downhill. As shown on Figure 5, the proposed HDD pipeline is partially located within an area that has earthquake induced landslide potential. The proposed recycled water storage tank and pump station and HDD tunneling would not be located directly in landslide potential areas. Construction of the proposed pipeline would be through HDD method underground. As previously stated, the Hollywood Fault is approximately 0.6 miles south of the project site and the proposed project is located within a seismically active area of California. ~~Nonetheless~~ So, all infrastructure improvements ~~in the State of California~~ must comply with the seismic design parameters contained in the CBC seismic requirements. Compliance with the CBC standards in the design and construction of the proposed project would reduce potential damage to the new infrastructure from landslides. ~~Construction of the pipeline would be located underground and would be constructed and designed in compliance with applicable building codes and standards of the CBC and the Bureau of Engineering.~~

The HDD pipeline alignment would be designed to accommodate landslides. Standard geotechnical and structural design criteria required in the CBC would reduce excessive landslide ~~response~~ effects and minimize potential damage or collapse of the pipeline. Compliance with the CBC would minimize the potential for damage from landslides. With the incorporation of Mitigation Measure **GEO-1**, the proposed project would result in a less-than-significant impact with mitigation related to landslides.



Source: State of California Seismic Hazard Zones

Griffith Park South Water Recycling Project . 211490.27

Figure 5

Landslide and Liquefaction Potential in the Project Area

b) **Less than Significant Impact.** The proposed project would include trenching activities within the 30-foot construction corridor primarily within the existing roadway right-of-ways. The trench would be approximately 2 feet below surface and 3 feet wide. Approximately 1,520 total cubic yards of dirt and topsoil would be excavated and reused as backfill after the pipeline installation. The proposed project would not contribute to soil erosion or loss of topsoil. Construction of the proposed project would require ~~compliance with the Construction General Permit and~~ the preparation of a Stormwater Pollution Prevention Plan (SWPPP) ~~for the construction phase of the proposed project~~ in accordance with the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges associated with Construction and Land Disturbance Activities (Construction General Permit). The SWPPP shall list all practicable and applicable Best Management Practices (BMPs) in order to reduce soil erosion during construction. Compliance with the NPDES Construction General Permit will ensure that ~~no substantial adverse~~ construction related erosion impacts ~~would occur, and impacts~~ would be less than significant. As described further in Section 3.9 Hydrology and Water Quality, the proposed project would implement BMPs to minimize the occurrence of soil erosion or loss of topsoil. Therefore, impacts related to soil erosion or the loss of topsoil would be less than significant.

c) **Less than Significant Impact.** Refer to discussions in responses ~~3~~2.6(a)(i) through ~~3~~2.6(a)(iv). The project site is located within an area that is subject to landslides or liquefaction. Thus, impacts from landslides, liquefaction and lateral spreading may occur. Subsidence occurs when a void is located or created underneath the ground surface causing the surface to collapse. Subsidence can be created through tunnels, wells, covered quarries, and caves beneath a surface. In addition, subsidence usually occurs as a result of excessive groundwater pumping or oil extraction. The proposed project would not expose people to seismic-related ground failure because the on-site facilities would be unmanned, and no habitable structures would be built as part of the proposed project. Furthermore, on-site activities would be limited to infrequent maintenance activities. As previously stated, all infrastructure improvements in the State of California must comply with the seismic design parameters contained in the CBC seismic requirements. Compliance with the CBC standards in the design and construction of the proposed project would reduce potential damage to the new infrastructure from on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. As a result, the proposed project would not expose people or structures to potential substantial adverse effects related to unstable soils, and impacts would be less than significant.

d) **Less than Significant Impact.** The proposed project is located in areas identified as having quaternary alluvium, stream channel gravel and sand sediments. These soils typically have low expansive potential. As described above, the proposed project would provide unmanned equipment and facilities and no habitable structures are proposed as part of the proposed project. All infrastructure improvements in the State of California must comply with the seismic design parameters contained in the CBC seismic requirements. Compliance with the CBC standards in the design and construction of the

proposed project would reduce potential damage to the new infrastructure from ground movement, including movement from expansive soils. Therefore, proposed project impacts related to expansive soils are less than significant.

e) **No Impact.** The proposed project would include construction of a pipeline, a pump station, and a recycled water storage tank. No septic tanks or alternative wastewater disposal systems exist or proposed. No impact would occur.

2.7 Greenhouse Gas Emissions

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
7. GREENHOUSE GAS EMISSIONS — Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

Discussion

a) **Less than Significant Impact.** Greenhouse gas (GHG) impacts are considered exclusively cumulative impacts. Greenhouse gasses include but are not limited to CO_2, CO, NO_X, hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF6). Construction-related GHG emissions ~~of GHG~~ would be temporary and would not be an on-going burden to the states GHG inventory. Construction related emissions would total 103 metric tons of carbon dioxide equivalents (CO2e) in 2014 and 113 metric tons in 2015. These emissions are less than the 10,000 metric ton per day of CO2e threshold established by SCAQMD for industrial projects, were it to apply to construction-related emissions. There would be no~~t be any~~ sources of operational emissions associated with the proposed pipelines, tank and pump station. Operation of the pump station would require intermittent electrical demand which would be associated with indirect GHG emissions if electricity used were from non-renewable resources. These electricity-related operational GHG emissions would be negligible. Therefore, impacts regarding the generation of GHG emissions would be less than significant.

b) **No Impact.** The proposed project would not markedly increase emissions of GHGs and is not anticipated to conflict with applicable GHG plans, policies, or regulations. State of California Assembly Bill 32 (AB 32) requires that the California Air Resource Board (CARB), in coordination with state agencies, adopt regulations to require the reporting and verification of statewide GHG emissions and monitor and enforce compliance with the program. State of California Senate Bill 375 (SB 375) requires the reduction of GHG emissions by discouraging sprawl development and dependence on car travel. SB 375 assists in the implementation of AB 32 by integrating land use, regional transportation, and house~~e~~ing plan~~nings~~. ~~The proposed project involves installation of a water pipeline installation that would require minimal and infrequent operational activities. In addition,~~ ~~t~~The proposed project would not generate GHG emissions that would significantly impact the environment~~.~~, and therefore, ~~The proposed project~~ would not conflict with AB 32 or SB 375 ~~and no impacts would occur~~.

2.8 Hazards and Hazardous Materials

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
8. HAZARDS AND HAZARDOUS MATERIALS — Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
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?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
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?	☐	☐	☒	☐

Discussion

a) **Less than Significant Impact.** The short-term construction activities of the proposed project would require transportation and use of limited quantities of fuel, oil, sealants, and other hazardous materials related to construction. Construction activities would occur intermittently over ~~22~~ 36 months. Thus, the proposed project's use of hazardous materials would be short-term in minimal quantities and within a limited area. Additionally, the use of hazardous materials and substances during construction would be subject to federal, state, and local health and safety requirements for handling, storage, and disposal.

Operation of the pipeline and well equipment would not require the use of chemicals that could create a hazard through routine transport, use, or disposal of hazardous materials. Because the use of hazardous materials would be minimal and temporary, hazards to the

public or the environment related to the transport, use, or disposal of hazardous materials would be less than significant.

b) **Less than Significant Impact.** As discussed above in 2.8(a), the use of hazardous materials would be minimal during construction activities that would occur intermittently over ~~22~~ 36 months. However, hazardous materials may accidently be spilled or otherwise released into the environment. To minimize potential impacts from release of hazardous materials, use of such substances during construction would be subject to federal, state, and local health and safety requirements for handling, storage, and disposal. Furthermore, vehicles would not be fueled or maintained on-site and a limited volume of hazardous materials would be stockpiled. Therefore, impacts related to upset and accident conditions involving the release of hazardous materials into the environment would be less than significant.

c) **No Impact.** The proposed project is located in Griffith Park and is not located within one-quarter mile of an existing or proposed school. The nearest school is the Los Feliz Nursery School located at 3401 Riverside Drive, Los Angeles, approximately 1.2 miles south of the project site. The proposed project would not impact an existing or proposed elementary school with hazardous materials.

d) **No Impact.** An environmental radius report was prepared using NETROnline, which searches 20 environmental databases, including but limited to federal hazardous waste database such as the National Priorities List (NPL), US Environmental Protection Agency (US EPA) superfund databases, Resources Conservation and Recovery Act (RCRA) databases; and State of California databases such as leaking underground storage tanks, (CA LUST), and hazardous waste sites. The proposed project is not located on a site listed as a hazardous materials site nor is it within a quarter mile of an identified hazardous materials site. Two sites were identified as being within a one-mile radius were identified as hazardous materials site. The Griffith Observatory is a small quantity generator of hazardous waste per month per the US RCRA Generators database, and the Toyon Canyon Landfill was identified as part of the Spills, Leaks, Investigation & Cleanup Program. As the project site is not included on a list of hazardous materials site, nor within close proximity to a hazardous material site, the proposed project would not create a significant hazard to the public or the environment. No impacts would occur.

e) **No Impact.** The proposed project is not located within an airport land use plan or within two miles of a public airport or public use airport. The nearest public airport is Bob Hope Airport located at 2627 N. Hollywood Way in the City of Burbank, and is approximately four miles north of the project area. Therefore, no airport related hazardous impacts would occur.

f) **No Impact.** The proposed project is not located within the vicinity of a private airstrip. The nearest private airport is Porter Ranch Airport located approximately 10 miles west of the project area. No airstrip related hazardous impacts would occur.

g) **No Impact.** The proposed project is not located within an adopted emergency response plan or emergency evacuation plan. Construction activities would not impede access to roads adjacent to the project site. Further, the proposed project-related vehicles would not block existing street access to the site. Therefore, no impacts related to an emergency evacuation plan would occur.

h) **Less than Significant Impact.** The project area is located in a Very High Hazard Severity Zone, as identified by the City of Los Angeles Bureau of Engineering. The Griffith Park Fire of 2007 burned over 800 acres, including portions of the project site. However, the proposed project would not expose people or structures to significant injury or death as construction activities would be short-term and operational activities would be limited and infrequent. No habitable structures would be developed for the proposed project. As described in 2.8(b), proper handling, storage, and disposal of fuels and other flammable materials in accordance with local safety requirements would minimize the risk of fires. Therefore, the proposed project is not anticipated to impact people or structures from wildland fires, and impacts would be less than significant.

2.9 Hydrology and Water Quality

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
9. HYDROLOGY AND WATER QUALITY — Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
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)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, in a manner that would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☐	☒	☐
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?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
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?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
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?	☐	☐	☒	☐
j) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Discussion

a) **Less than Significant Impact.** The proposed project would not violate any water quality standards or waste discharge requirements as the proposed project would consist of a new pipeline to convey recycled water, a pump station, and a new recycled water storage tank. Construction-related soil activities would be limited to removal of asphalt/pavement, trenching, stockpiling, and backfilling the trench after installation of the pipe with the excavated soils. The proposed project would prepare a SWPPP in accordance with the NPDES Construction General Permit. The SWPPP is required to list and implement all

practicable BMPs in order to protect water quality during construction. Compliance with the NPDES standards through preparation and implementation of a SWPPP would ensure that no substantial adverse impacts would occur. Therefore, impacts would be less than significant.

b) **Less than Significant Impact.** The proposed project would expand the use of recycled water produced at the Los Angeles-Glendale Water Reclamation Plant and would not utilize existing groundwater resources nor would it interfere with groundwater recharge. Instead, the proposed project provides an alternative water supply for irrigation to Roosevelt Golf Course, which currently uses potable water. Average customer demand of groundwater at the course is 310 AFY. Implementation of the proposed project would replace the use of potable water with recycled water at Roosevelt Golf Course. Thus, the proposed project would not deplete groundwater supplies or interfere substantially with groundwater recharge. Impacts would be less than significant.

c) **Less than Significant Impact.** Construction and operation of the proposed project facilities would be located within Griffith Park and would not alter the existing drainage pattern of the project site. The proposed pipeline would be located underground and would not change the existing drainage pattern throughout its alignment. The recycled water storage tank and pump station would be located on concrete ~~cement~~ pads ~~and adjacent to existing structures~~, which may slightly alter the drainage pattern of that area. However, ~~there are no streams or rivers within the project area and~~ the proposed project is not anticipated to increase runoff, and would adhere to all NPDES regulations and implement BMPs to ensure that construction does not result in erosion impacts. Therefore, the proposed project would not substantially alter the existing drainage pattern of the site or area and substantial erosion o~~f~~r siltation would not occur. Impacts would be less than significant.

d) **Less than Significant Impact.** Construction of the proposed project would be located within Griffith Park. The proposed pipeline would be located underground and upon completion of installation would not change the existing drainage pattern throughout its alignment. The recycled water storage tank and pump station would be located on concrete ~~cement~~ pads and adjacent to existing structures; the introduction of the concrete ~~cement~~ pads would slightly alter the drainage patterns of the project area and it is anticipated the proposed project would not increase the rate or amount of surface runoff, and the proposed project would not result in on- or off-site flooding. Impacts would be less than significant.

e) **Less than Significant Impact.** The proposed project would slightly increase impervious surfaces within the project vicinity, by developing concrete ~~cement~~ pads to support the recycled water tank and pump station. However, the increase of the amount of impervious surfaces would not generate a significant amount of additional runoff, and would not change the course of stormwater runoff. Additionally, construction-related activities involving earth moving during installation of the pipeline would be limited to trenching and backfilling the pipeline alignment. The proposed project would adhere to

all regulations and implement BMPs pursuant to the project specific SWPPP ~~which~~ that would ensure that construction activities do not result in polluted runoff. As a result, the proposed project would not create or ~~contribute to polluted~~ increase the amount of runoff ~~water or runoff~~ that would exceed the existing ~~drainage~~ capacity of the ~~project area~~ stormwater drainage systems, and impacts would be less than significant.

f) **Less than Significant Impact.** The proposed project would involve short-term construction and minimal maintenance activities that would not substantially degrade water quality. The proposed project would be required to comply with the Construction General Permit and implement a project specific SWPPP that identifies BMPs to minimize impacts to water quality. Therefore, impacts related to the degradation of water quality would be less than significant.

g) **No Impact.** The proposed project is not located within a 100-year flood hazard area as mapped on the Federal Emergency Management Agency (FEMA) 100-year Flood Insurance Rate Map. In addition, the proposed project does not include housing or other habitable structures that would expose people property to flood hazards. Therefore, no impact would occur.

h) **No Impact.** The proposed project is not located within a 100-year flood hazard area and would not include the construction of structures that would impede or redirect flood flows. Therefore, no impact would occur.

i) **Less than Significant Impact.** The Mulholland Dam and Hollywood Reservoir, owned and operated by LADWP, are located in the Hollywood Hills approximately three miles west of the project site. The Mulholland Dam was built in 1924 and has a capacity of 4,036 acre feet, creating the Hollywood Reservoir. The dam has a height of approximately 195 feet and a crest elevation of 756 feet. The depth of the reservoir is approximately 183 feet. The proposed project is not within the dam inundation area and would not result in construction of any structures that may be affected in the event of catastrophic dam failure. ~~In the event of catastrophic dam failure, proposed project facilities could be reinstalled and constructed.~~ In addition, no levees or dams are located on the project site and no off-site levees or dams would be modified as part of the proposed project. The proposed tank would be maintained on a regular routine to ensure the tank is repaired as necessary reducing the potential for tank failure. As a result, the proposed project would not expose people or structures to a significant risk of loss as a result of the failure of a levee or dam.

j) **No Impact**. Tsunamis are usually caused by displacement of the ocean floor causing large waves and are typically generated by seismic activity. The project site is located approximately 19 miles from the Pacific Ocean, therefore a tsunami hazard is not present for project site. A seiche is a standing wave in an enclosed or partly enclosed body of water. Seiches are normally caused by earthquake activity, and can affect harbors, bays, lakes, rivers, and canals. The Hollywood Reservoir is located approximately three miles west of the project site, which is too far to be impacted by a seiche event at the reservoir.

Should an earthquake onsite generate a seiche within the tank, the seiche would remain contained within the tank because there is no opening to allow the water to escape, as in a lake or open reservoir setting. Lastly, mudflow is a mixture of soil and water that runs like a river of mud down a hillside and is usually generated by heavy rainfall. The project site is located adjacent to a hillside that would not expose the project to potential mudflow as the hillside is large vegetated and would slow the flow water should water escape rapidly. The proposed tank would be maintained on a regular routine to ensure the tank is repaired as necessary reducing the potential for tank failure. Therefore, impacts related to seiche, tsunami, or mudflow mudflows would not occur.

2.10 Land Use and Land Use Planning

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
10. LAND USE AND LAND USE PLANNING — Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Discussion

a) **No Impact.** The proposed project would be located in Griffith Park and would consist of the construction of underground pipelines, a pump station, and a recycled water storage tank. There are no established communities located within Griffith Park or in close proximity to the project site. No impacts would occur.

b) **No impact.** The project site has a land use designation and zoned as of OS (Open Space). The adjoining areas are also designated OS and zoned OS. The proposed water pipeline would be located underground and would not constrain or change the existing land uses within the project area. Construction of the aboveground facilities would not conflict with the existing land use and zoning designations. As a result, no impacts related to conflicts with applicable land use plans, policies, or regulations related to avoiding or mitigating an environmental effects would occur.

c) **No Impact.** As discussed in section ~~3~~2.4(f), the proposed project is not located within a HCP or NCCP. However, the project area is located within the Griffith Park Wildlife Management Plan area. This plan establishes a baseline in terms of known threats to wildlife and includes BMPs that help assist the Los Angeles Department of Recreation and Parks staff in making land management decisions in Griffith Park and the surrounding open space areas. The proposed project would follow the recommended BMPs whenever applicable. In addition, the project would not alter land use and therefore would not conflict with the plan.

2.11 Mineral Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
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?	☐	☐	☐	☒

Discussion

a) **No Impact.** According to the California Department of Conservation , the project area is identified as a Mineral Resource Zone (MRZ)-3, which are areas containing mineral deposits that cannot be evaluated from available data. The project site has not been identified as a known mineral resource area and does not have a history of mineral extraction uses. In addition, according to the State of California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR), no oil wells exists on the project site. Therefore, the proposed project would not result in the loss of availability of a known mineral resource and no impacts would occur.

b) **No Impact.** The project area is not used for mineral extraction and is not known as a locally important mineral resource recovery site. Further, the project area is not delineated on any plan for mineral resource recovery uses, and no impacts would occur.

2.12 Noise

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
12. NOISE — Would the project:				
a) Result in 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) Result in exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) Result in 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 area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?	☐	☐	☐	☒
f) For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion

a) **Less than Significant Impact.** The City of Los Angeles has established policies and regulations concerning the generation and control of noise that could adversely affect its citizens and noise sensitive land uses. Section 41.40 (Noise Due to Construction, Excavation Work – When Prohibited) of the Los Angeles Municipal Code (LAMC) indicates that no construction or repair work shall be performed between the hours of 9:00 p.m. and 7:00 a.m., since such activities would generate loud noises and disturb persons occupying sleeping quarters in any adjacent dwelling, hotel, apartment or other place of residence. No person, other than an individual home owner engaged in the repair or construction of his/her single-family dwelling, shall perform any construction or repair work of any kind or perform such work within 500 feet of land so occupied before 8:00 a.m. or after 6:00 p.m. on any Saturday or on a federal holiday, nor at any time on any Sunday. Under certain conditions, the City may grant a waiver to allow limited construction activities to occur outside of the limits described above.

Section 112.05 (Maximum Noise Level of Powered Equipment or Powered Hand Tools) of the LAMC also specifies the maximum noise level of powered equipment or powered hand tools. Any powered equipment or hand tool that produces a maximum noise level exceeding 75 dBA at a distance of 50 feet is prohibited. However, this noise limitation does not apply where compliance is technically infeasible. Technically infeasible means the above noise limitation cannot be met despite the use of mufflers, shields, sound

barriers and/or any other noise reduction device or techniques during the operation of equipment.

Construction of the proposed project would include the use of a backhoe to excavate the pipeline trench, a flat bed truck to transport the new pipe material, and accessory vehicles (i.e., pick-up trucks) to take the construction crew to and from the project site. Construction activities would occur 7:00 a.m. to 4:00 p.m., Monday through Friday. There are no sensitive receptors located within 500 meters~~t~~ (1,640 feet) of the project pipeline alignment, pump station or water tank sites. Additionally, construction-related noise would be short-term and would not expose sensitive receptors to noise. Noise generated by truck travel to and from the project area would also be short-term and temporary and would not produce substantial increases in traffic that could result in a significant increase in noise levels. Operation of the proposed water pipeline and equipment would generate minimal noise. The proposed pump station would include an enclosure around the pump which would attenuate operational noise. The onsite facilities would be unmanned with exception of infrequent maintenance activities on the equipment that would not exceed noise standards. As a result, the proposed project would not generate noise levels in excess of adopted standards and noise impacts would be less than significant.

b) **Less than Significant Impact.** Proposed project construction would not include the use of construction equipment that would generate excessive groundborne vibration or groundborne noise levels. Construction equipment includes backhoes, excavators trucks, and accessory vehicles that would not generate substantial groundborne vibration from activities on the soil surface of the project area. In addition, there are no sensitive receptors in proximity to the project area. Furthermore, operation of the proposed water pipeline and equipment would not generate groundborne vibrations or groundborne noise levels. The onsite facilities would be unmanned with exception of infrequent maintenance activities on the equipment that are not anticipated to generate vibration. Therefore, impacts related to groundborne vibration and noise would be less than significant.

c) **No Impact.** Construction noise would be short-term and temporary and would not result in a permanent increase in ambient noise levels. At the end of construction, the water pipeline would be located underground and would not create an increase in ambient noise levels. The pump station would be enclosed and would also not generate a noticeable permanent increase in ambient noise levels at any sensitive land use. The onsite facilities would be unmanned with exception of infrequent maintenance activities on the equipment that would not create a permanent increase in ambient noise levels. Therefore, no impacts related to permanent increases in noise would occur from the proposed project.

d) **Less than Significant Impact.** See responses 12. a through c above. Construction noise would be short-term (intermittently over ~~22~~ 36 months) and would result in a temporary increase in ambient noise levels. However, the project area is open space and there are no permanent sensitive receptors located in proximity to the project site that could be

affected by the temporary construction noise increase. Thus, construction-related noise is not considered to be substantial. Operation of the pipeline and well equipment would be unmanned with exception of infrequent maintenance events, and would not result in a substantial increase in ambient noise. Therefore, impacts related to substantial temporary or periodic increases in ambient noise levels would be less than significant.

e) **No Impact.** The proposed project is not located within an airport land use plan or within two miles of a public airport or public use airport that would expose people residing or working in the area to experience noise levels The nearest public airport is Bob Hope Airport located at 2627 N. Hollywood Way in the City of Burbank, and is approximately four miles north of the project area. The nearest private airport is Porter Ranch Airport located approximately 10 miles west of the project area. Therefore, noise impacts related to airport uses would not occur.

f) **No Impact.** The proposed project is not located within the vicinity of a private airstrip. The nearest private airport is Porter Ranch Airport located approximately 10 miles west of the project area. As a result, noise impacts related to private airstrip uses would not occur.

2.13 Population and Housing

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
13. POPULATION AND HOUSING — Would the project:				
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)?	☐	☐	☒	☐
b) Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

a) **Less than Significant Impact.** The proposed project does not include housing or commercial development that would directly affect the number of residents or employees in the area and would not contribute to the creation of additional housing or jobs in the Los Feliz area of the City of Los Angeles. Instead, the proposed project would provide a recycled water source to the Roosevelt Golf Course to replace the use of potable water. The proposed project would not directly or indirectly induce growth or remove an obstacle to growth as the proposed project would be implemented to meet demands of the existing population that would occur based on the City's approved build-out and growth control policies. The proposed project's potential to induce population growth is considered to be less than significant.

b) **No Impact.** The project area is primarily undeveloped open space. The proposed project would not involve the construction or demolition of housing. Therefore, the proposed project would not displace people or housing, and no impact would occur.

c) **No Impact.** The proposed project includes the installation of a recycled water pipeline, recycled water storage tank and pump station. The project area is undeveloped open space. No housing is located in proximity to the project area and the proposed project would not displace people or require the construction of replacement housing. No impact would occur.

2.14 Public Services

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
14. PUBLIC SERVICES — Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of, or the 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 following public services:				
i) Fire protection?	☐	☐	☐	☒
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Discussion

a.i) **No Impact.** Construction activities related to the proposed project would be short-term and would not result in adverse impacts that would require the need for additional fire protective services beyond what is already provided. Project operation would consist of unmanned operation and infrequent maintenance activities that would not require additional fire protection services. Therefore, no impacts to fire services would occur.

a.ii) **No Impact.** Construction activities related to the proposed project would be short-term and would not result in adverse impacts that would require the need for additional police protective services beyond what is already provided. Project operation would consist of unmanned operation and infrequent maintenance activities that would not require additional police protective services. Therefore, no impacts to police services would occur.

a.iii) **No Impact.** The proposed project involves the installation of unmanned water facilities and would not introduce inhabitants to the project area that would require additional schools. No impacts would occur.

a.iv) **No Impact.** The proposed project involves the installation of unmanned water facilities and would not introduce inhabitants to the project area that would require construction of parks. No impacts would occur.

a.v) **No Impact.** The proposed project involves the installation of unmanned water facilities and would not introduce inhabitants to the project area that would require additional public facilities. No impacts would occur.

2.15 Recreation

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
15. RECREATION — Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	☐	☐	☒	☐
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☒	☐

Discussion

a) **Less than Significant Impacts.** The proposed project would be located within Griffith Park which is frequently used by visitors. The proposed project would involve the construction and installation of a recycled water pipeline, recycled water storage tank, and a pump station. The proposed project includes the use of HDD method at Fern Canyon Nature Trailhead to avoid impacts to trail users. The proposed project would not increase the use of the park facilities. Operation of the proposed project would not create population growth that would increase the use of the park such that substantial physical deterioration of the facilities would occur. Therefore, less than significant impacts would occur.

LADWP has coordinated extensively with ~~LA~~RAP for implementation of the proposed project. As discussed in Section 2.5 Alternatives Considered but Withdrawn, several alternatives were evaluated with cooperation from both departments before concluding on the proposed project. During discussions for the proposed project, concerns were raised regarding construction impacts during the summers of 2014 and 2015 due to the 2015 Special Olympics World Summer Games will be held partly in Griffith Park. Los Angeles Memorial Coliseum will serve as the main venue, with event locations staged in several other locations in the city, including Griffith Park. Preparation and activities for the event in Griffith Park would take place over the summers of 2014 and 2015. Construction activities have been phased to avoid project construction during the Special Olympics over the summers of 2014 and 2015. Therefore, less than significant impacts would occur to park operations.

b) **Less than Significant Impacts.** The proposed project would involve the construction of a recycled water pipeline, a recycled water storage tank and a water pump station in Griffith Park. The development of these facilities would not displace recreational users from the park which would require the construction or expansion of recreational facilities elsewhere. Additionally, the proposed project includes the use of HDD at Fern Canyon Nature Trail to avoid impacts to trail users. Therefore, less than significant impacts would occur.

2.16 Transportation and Traffic

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
16. TRANSPORTATION AND TRAFFIC — Would the project:				
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	~~☒~~
e) Result in inadequate emergency access?	☐	☐	☒	☐
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?	☐	☐	☒	~~☒~~

Discussion

a) **Less than Significant Impact.** Construction of the proposed project would temporarily increase local traffic due to the transport and delivery of construction equipment and materials as well as from daily worker trips. Construction would occur in three separate ~~sections~~ phases, including the cut and cover pipeline phases (2), the HDD pipeline, and tank and pump station construction.

Cut and cover pipeline construction would occur in two phases between ~~January 02,~~ March 2014 and ~~October 09,~~ June 2015. Phase 1 of cut and cover pipeline phase would commence on ~~January 02,~~ March 2014 and is anticipated to be completed by ~~February 28,~~ May 2014. Phase 2 of cut and cover pipeline phase would commence the following year on ~~August 3,~~ March 2015 and is anticipated to be completed by ~~October 09,~~ June 2015. The construction is phased to avoid early summer park activities, when park attendance is higher. Approximately 18 haul truck round-trips would occur per day during pipeline installation and approximately 21 roundtrip per day generated by construction workers. HDD pipeline construction would occur between January ~~6,~~ 2015 and March ~~02,~~ 2015. Tank and pump station construction would occur between ~~March 02, 2015~~ August 2014 and June ~~24,~~ 2016~~5~~. ~~HDD activities and pump station and tank~~

~~replacement would generate 48 haul truck round-trips per day and approximately 122 round trips per day generated by construction workers.~~ Approximately 15 haul truck round-trips would occur per day during HDD pipeline installation and approximately 7 roundtrip per day generated by construction workers. Approximately 103 haul truck round-trips would occur per day during tank replacement and pump station construction and approximately 145 roundtrip per day generated by construction workers.

Construction access to the various parts of the alignment would be via Crystal Springs Drive from I-5, Western Heritage Way from SR-134, and Fire Road adjacent to Crystal Springs Drive in Griffith Park. All construction activities would occur within the 30-foot construction corridor, and no roadway or lane closures are anticipated. Construction-related truck trips would be ~~minimal and~~ short-term and are not anticipated to significantly impact the existing circulation system performance. As a result, traffic impacts to the roadway system from construction would be less than significant.

Operation-related traffic would include infrequent maintenance and repair activities on the pipeline and aboveground facilities. This would result in minimal and limited truck trips. Therefore, the operation of the proposed project would not result in significant operational traffic increases. Therefore, impacts would be less than significant.

b) **Less than Significant.** The 2010 Congestion Management Program (CMP) for Los Angeles County addresses the impact of local growth on the regional transportation system. The goal of the CMP is to comply with statutory requirements of the CMP, including monitoring level of service (LOS) on the CMP Highway and Roadway network, measuring frequency and routing of public transit, implementation the Transportation Demand Management and Land Use Analysis Program Ordinances, and helping local jurisdictions meet their responsibilities under the CMP. The proposed construction truck route would utilize I-5 and SR-134, which are CMP highways. The truck route would also utilize Crystal Springs Drive from I-5, Western Heritage Way from SR-134, and Fire Road adjacent to Crystal Springs Drive in Griffith Park roadways. These roadways ~~are~~/are not designated as CMP roadways. Construction related traffic would consist of a maximum of 103 vehicular roundtrips during the tank and pump station construction phase and approximately 145 roundtrip per day generated by construction workers. The temporary addition of ~~170~~ 248 truck trips to the roadways during the ~~HDD pipeline and~~ pump station and tank replacement phase~~s~~ would be minimal. No additional traffic analysis is required as the proposed project does not fit the following criteria requiring further analysis:

- The proposed project will add 50 or more trips during AM or PM weekday peak hours to CMP arterial monitoring intersections
- The proposed project will add 50 or more peak hour trips to CMP arterial segments
- The proposed project will add 150 or more trips to mainline freeways during AM or PM weekday peak hours

Construction-related truck trips would be short-term and minimal and is not anticipated to permanently impact the existing LOS or conflict with the existing roadway conditions. In addition, construction deliveries and departures would be timed to avoid mainline freeways during AM and PM weekday peak hours. Operational truck trips would be limited and infrequent and would not impact the existing LOS or conflict with the existing roadway conditions. Additionally, the proposed project would be required to prepare a traffic control plan that would be reviewed and approved by the Los Angeles Department of Transportation. Therefore impacts would be less than significant.

c) **No Impact.** The proposed project is not located in the immediate vicinity of an airport or private airstrip. The nearest public airport is Bob Hope Airport located at 2627 N. Hollywood Way in the City of Burbank, and is approximately three miles north of the project area. The nearest private airport is Porter Ranch Airport located approximately 10 miles west of the project area. Project activities would not alter the existing air traffic patterns, levels, or locations that result in safety risks. No impact would occur.

d) ~~No~~ **Less than Significant Impact.** The proposed project would not alter existing roadways nor include any hazardous design features such as sharp curves or dangerous intersections. No incompatible uses such as farm equipment are proposed. As stated in response 2.16 a), construction access to the various parts of the alignment would be via Crystal Springs Drive from I-5, Western Heritage Way from SR-134, and Fire Road adjacent to Crystal Springs Drive in Griffith Park. All construction activities would occur within the 30-foot construction corridor, and no roadway or lane closures are anticipated. Construction-related truck trips would be minimal and short-term and are not anticipated to impact the existing circulation system performance. As a result, traffic impacts to the roadway system from construction would be less than significant. ~~As such, no impacts would occur.~~

e) **Less than Significant.** Access to the project area would be via I-5 and Crystal Springs Road. Construction activities would be located within the project area and would not impede access to roads adjacent to the project site. Additional construction activities would not be located within roadways and are not anticipated to interfere with traffic flow or emergency response access to the project area. Operational activities would involve minimal and infrequent maintenance operations and would not result in interference with emergency response access. Impacts would be less than significant.

f) ~~No~~ **Less than Significant Impact.** Segments of the proposed pipeline would be located in proximity to the Fern Canyon Nature Trail, which is used frequently by local residents and visitors as a walking and hiking path. To avoid permanent adverse impacts to the existing Fern Canyon Nature Trail, installation of the pipeline would be completed using the HDD method. ~~This would ensure the nature trail impacts, although short-term, would not adversely impact the trail during construction and operation.~~ Construction activities would be staged near the trailhead and located along portions of Nature Fern Canyon Trail (refer to Figure 3). However, access to the trail would remain unimpeded and use of the trail would continue during construction activities. Construction activities would not

conflict with the Griffith Park Master Plan and other policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities within the project area. At the end of construction, the project area would return to pre-construction conditions, with the exception of the new above ground structures. In addition, the proposed project would not propose any activities that would conflict with policies, plans, or programs support alternative transportation. ~~No i~~Impacts would be less than significant ~~occur~~.

2.17 Utilities and Service Systems

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
17. UTILITIES AND SERVICE SYSTEMS — Would the project:				
a) Conflict with wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e) Result in a determination by the wastewater treatment provider that would serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

Discussion

a) **No Impact.** The proposed project involves the construction and installation of a recycled water pipeline, pump station, and recycled water storage tank. The proposed project is an extension of the water recycling system at the Los Angeles-Glendale Reclamation Plant. The proposed project would not produce wastewater and would not require a discharge permit from the Regional Water Quality Board (RWQCB). No impact would occur.

b) **No Impact.** The proposed project involves the construction and installation of a recycled water pipeline, recycled water storage tank, and a pump station that would provide recycled water produced at the Los Angeles-Glendale Reclamation Plant to the Roosevelt Golf Course. The proposed project does not involve construction of wastewater infrastructure and the proposed project would not generate wastewater. Therefore, the proposed project would not require or result in the need for water or wastewater treatment facilities. No impact would occur.

c) **No Impact.** The proposed project would install a new recycled water pipeline to convey recycled water to the Roosevelt Golf Course and construct a new recycled water storage tank and pump station. Construction of the proposed project is not anticipated to affect stormwater drainage in the project area. The pipeline would be located underground and

the aboveground facilities would be located on pads. Although the proposed project would increase impervious surfaces in the project vicinity and may generate additional runoff, the proposed project would be required to comply with all components of the City's NPDES permit (including controlling stormwater runoff). As a result, no new stormwater drainage infrastructure would be required from implementation of the proposed project. Thus, no impacts would occur.

d) **Less than Significant Impact.** The proposed project would expand the use of recycled water produced at the Los Angeles-Glendale Water Reclamation Plant and provide an alternative water supply for irrigation to the Roosevelt Golf Course, which currently uses potable water for irrigation. Future connections with the recycled water expansion are also anticipated. The proposed project would supply the Roosevelt Golf Course with recycled water for irrigation and meet the anticipated average demand of 310 AFY. Construction of the recycled water storage tank and pump station would not require the need for additional water supply. By using recycled water for irrigation, the proposed project would recover potable water supplies for potable uses. Therefore, the proposed project would not result in the need for additional water resources or expanded entitlements. Impacts related to water supply are less than significant.

e) **No Impact.** The proposed project would install a new pipeline to convey recycled water to the Roosevelt Golf Course and construct a new recycled water storage tank and pump station. The proposed project would not produce wastewater and would not receive wastewater service. Thus, no impacts to wastewater treatment capacity would occur.

f) **Less than Significant Impact.** The proposed project anticipates that a maximum of 1,520 cubic yards of dirt and topsoil would be excavated and used as backfill. No excavated soils would be hauled offsite to the local landfill. The nearest landfill serving the project area would be Scholl Canyon Landfill located at 3001 Scholl Canyon Road in the City of Glendale. The landfill has a remaining capacity of 9.9 million cubic yards and a maximum permitting daily of 3,400 tons per day. The landfill will cease to operate in April 2030. Solid waste generated from the construction activities would not be substantial and would not place a great demand on the land fill. Operation of the facilities would be unmanned with the exception of infrequent maintenance activities, which would not generate substantial volumes of solid waste. Therefore, impacts to solid waste facilities would be less than significant.

g) **No Impact.** Construction and operation of the proposed project would result in minimal solid waste that would be hauled offsite to a local landfill in compliance with federal, state, and local statues related to solid waste. No impacts would occur.

2.18 Mandatory Findings of Significance

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
18. MANDATORY FINDINGS OF SIGNIFICANCE — Would the project:				
a) 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, 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?	☐	☒	☐	☐
b) 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)?	☐	☐	☒	☐
c) Have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Discussion

a) **Less than Significant with Mitigation**. The proposed project would have the potential to impact sensitive wildlife species and natural communities during construction activities. However, with the incorporation of Mitigation Measures BIO-1 through BIO-5, potential impacts to biological resources would be reduced to less than significant levels.

The project would involve excavation and grading activities which could potentially unearth prehistoric archaeological resources. Such actions could unearth, expose, or disturb subsurface paleontological, archaeological, historical, or Native American resources that were not observable on the surface. However, with the incorporation of Mitigation Measures CUL-1 through CUL-6, potential impacts to paleontological or cultural resources that represent major periods of California history or prehistory would be reduced to less than significant levels.

b) **Less Than Significant Impact.** A cumulative impact could occur if the project would result in an incrementally considerable contribution to a significant cumulative impact in consideration of past, present, and reasonably foreseeable future projects for each resource area. Because the project impacts are generally construction related, the cumulative study area is generally confined to the areas adjacent to the project site, which include open spaces, residential areas, and Griffith Park. There are several past, present, and reasonably foreseeable projects identified in the Griffith Park area that are listed in Table 4. Several of the listed projects are located adjacent to the project site. The closest project is located approximately 0.5 miles east of the project site. The projects identified

in the following table are characterized as mainly roadways and public recreational in nature.

TABLE 4
CUMULATIVE PROJECTS LIST

Project	Location	Land Use
River Supply Conduit Improvement Project Lower Reach	Zoo Drive, north of Griffith Park	Roadway; Park
Riverside Drive Bridge Widening and Rehabilitation Project	Bette Davis picnic area on the northern boundary of Griffith park	Park; Public Facility
Headworks Reservoir Project	6001 West Forest Lawn Drive	Park
North Atwater Non-Motorized Bridge Project	3900 Chevy Chase Dr	Park
LADWP Power Reliability Improvement Project	Along Los Feliz Blvd	Roadway; Commercial
Griffith Park Baseball Fields	Crystal Springs Picnic Area of Griffith Park	Park; Public Facility
~~LA~~RAP ~~Shakespeare in the Park New Permanent Stage~~ Griffith Park Performing Arts Center	Old Zoo	Park; Public Facility
BOE Interceptor Sewer	Intersection of Crystal Springs Rd and the 5 freeway exit	Roadway; Park
2014/15 Special Olympics Games	Griffith Park	Park; Public Facility

The project's proposed facilities, pipelines, pump station, and water tank would not impact any scenic vistas, state scenic highways, or generate any light and glare; and cumulative aesthetic impacts would not occur. The project area does not include any agricultural or mineral resources that could be impacted; and the project would have no effect on land use, population, housing, public services, and utilities. As a result, cumulative impacts related to these resources would not occur.

In addition, air quality, greenhouse gas, noise, hazardous material, recreation, water quality and traffic impacts that are generated by construction activities would be short-term and limited by construction phasing and the overall short construction period for each phase. The minimal emissions, noise, hazardous materials, traffic and water pollutants generated by the project would also be less than cumulatively considerable due to the location of the project being away from permanent sensitive receptors and the limited construction activities and duration. Furthermore, impacts related to biological resources and cultural resources would be less than cumulatively considerable with implementation of identified Mitigation Measures. Therefore, the proposed project would not result in any impacts that would be individually limited, but cumulatively considerable resulting from the proposed project. When the potential impacts of the proposed project are viewed in connection with past and ongoing projects, its impacts would not be considered cumulatively considerable.

c) The proposed project has the potential to degrade the quality of the park visitor's experience during project construction activities. However, construction activities would be temporary visual impacts and would not restrict visitor use. Construction activities have been phased to avoid project construction during the Special Olympics over the summers of 2014 and 2015. Therefore, less than significant impacts would occur to park operations and would not have environmental effects that have the potential to cause substantial adverse effects on human beings, either indirectly or directly.

SECTION 3
Clarifications and Modifications

The following clarifications and modifications are intended to update the MND in response to the comments received during the public review period and as a result of minor modifications to the description of the proposed project made by LADWP since the Draft MND was made available for public review. These changes constitute the Final MND, to be presented to the City of Los Angeles Board of Water and Power Commissioners for adoption and project approval. None of the changes to the MND would require recirculation. Revisions made to the MND have not resulted in new significant impacts or mitigation measures, nor has the severity of an impact increased. None of the CEQA criteria for recirculation have been met, and recirculation of the MND is not warranted.

The changes to the MND are listed by page number and paragraph number if applicable. Text which has been removed is shown with a strikethrough line, while text that has been added is shown as underlined. All of the changes described in this section have also been made in the corresponding Final MND sections. Please refer to Section 4, Response to Comments, for referenced comment letters and corresponding comments.

Final MND Page	Clarification/Revision
3	*In response to Comment 2-A, an editorial addition has been made to Section 1.2.1,* Project Background, *of this Final MND as follows*: The Los Angeles Department of Water and Power (LADWP) proposes to expand its existing recycled water system within the Central Los Angeles area with the Griffith Park South Water Recycling Project ("GPSWRP" or "proposed project").
3	*In response to Comment 2-B, an editorial addition has been made to Section 1.3,* Project Location, *of this Final MND as follows*: Griffith Park is owned and operated by the City of Los Angeles Department of Recreation and Parks (~~LA~~RAP).

Final MND Page	Clarification/Revision
5	*In response to Comment 2-C, an editorial addition has been made to Figure 2 of this Final MND as follows*: Crystal Springs Dr. and Griffith Park Dr. have been added as reference landmarks to Figure 2.

Source: ESRI

Griffith Park South Water Recycling Project. 211490.27

Figure 2

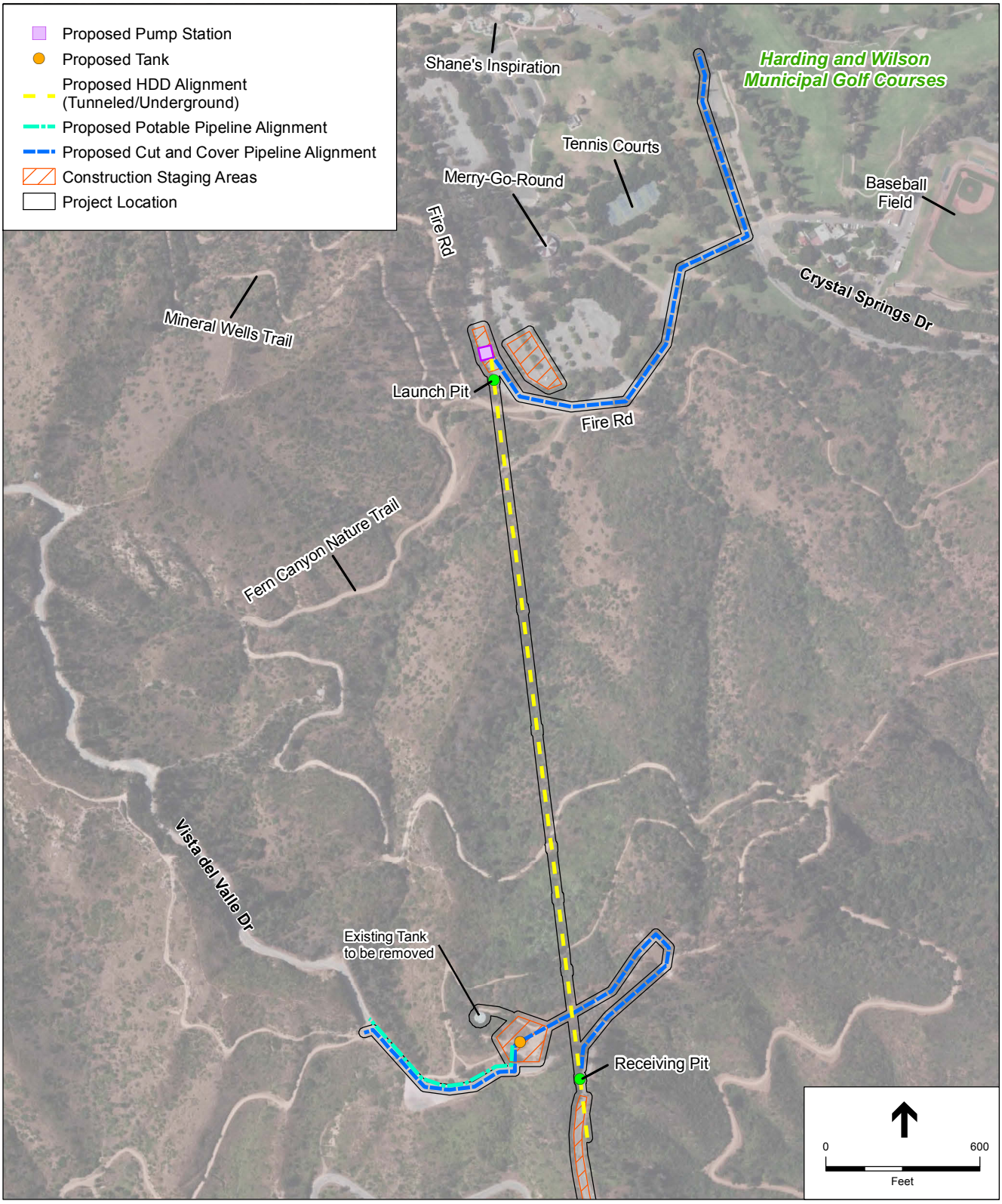
Project Vicinity

Final MND Page	Clarification/Revision
6	*In response to Comment 2-D, an editorial addition has been made to Section 1.4,* Project Description *of this Final MND as follows*:

Proposed project facilities include:

- Proposed recycled water pump house station to be located on the east side of Fire Road. There would be one pump house, two operating pumps and one back-up pump. A minimum flow of 1,400 gallons per minute (gpm) would be required to fill the proposed recycled water tank in 12 hours. Each pump would have 150 horsepower.
- 2,100 linear feet of 12-inch pipeline, connecting the exiting Greenbelt pipeline to the proposed pump station east of Fire Road;
- 2,500 linear feet of 12-inch pipeline from the proposed horizontal directional drilling (HDD) launching pit to the HDD receiving pit near the proposed recycled water storage tank;
    - HDD is being used because trenching or excavating is not practical since it would result in significant biological and aesthetic impacts.
    - With use of HDD, most of the ground surface remains undisturbed, lessening the environmental impact of placing pipeline.
    - Trenchless technology protects natural resources such as sensitive habitats by drilling underneath the resources.
- 1,400 linear feet of 12-inch pipeline from the HDD receiving pit to the proposed recycled water storage tank;
- 700 linear feet of 12-inch pipeline from the proposed recycled water tank to the existing 1,200 linear feet 8-inch steel pipeline, connecting to the Roosevelt Golf Course;
- 700 linear feet of 12-inch pipeline from the proposed recycled water tank to the existing 1,544 foot Grade Potable System to be used as a potable back-up pipeline;
- Regulator Valve and Relief Valve System located adjacent to the pump station;
- Bolt-up steel recycled water pumping station located on the east side of Fire Road within LADWP easement;
- Steel recycled water storage tank with a capacity of 1 million gallons to be located southeast of the existing Tank 114;
- Removal of the steel structure and wooden roof of the existing Tank 114 and;
- Appurtenant facilities for the pipelines.

Final MND Page	Clarification/Revision
7	*In response to Comment 2-E, an editorial addition has been made to Section 1.4,* Project Description *of this Final MND as follows:* The proposed project would begin at the existing Greenbelt Water Recycling pipeline located near the Park Center Picnic Area ~~Merry-Go-Round area along Crystal Spring Drive in~~ of Griffith Park~~; located in Park Center between the Los Angeles Zoo and the Los Feliz park entrance~~. The Park Center is located on Crystal Spring Drive between Griffith Park Drive and the Fire Road adjacent to the Ranger Station and Griffith Park Visitor Center.
7	*In response to Comment 2-F, an editorial addition has been made to Section 1.4,* Project Description *of this Final MND as follows:* Approximately 2,100 linear feet of a 12-inch pipeline would connect to an existing 8-inch recycled water pipeline located southwest of the intersection of Griffith Park Drive and Crystal Springs Drive. The pipeline would be installed along Crystal Springs Drive, commencing in the area in front of the park center. The pipe would head south bound on Crystal Springs Drive, continue east along the Fire Road, and terminate near the entrance to Fern Canyon Trail above the Merry-go-round where it will connect with the proposed Griffith Park South Pump Station ~~within the existing roadway and connect north of the proposed recycled water pump station located on the east side of Fire Road. The pipeline would connect to a new pump station~~. From the pump station, the pipeline would continue for approximately 2,500 feet and would be installed using the HDD construction method (~~tunneling~~ trenchless drilling method beneath the surface) to avoid aesthetic, biological, and recreational (on the public) impacts within the park. Approximately 1,400 linear feet of 12-inch pipeline would be constructed from the HDD receiving pit to a new recycled water storage tank, to be located southeast of existing Tank 114.
9	*In response to Comments 2-G and 2-M, the following changes have been made to Figure 3 of this Final MND as follows:* Fire road has been shown on the figure for reference to the text. In addition, Griffith Park land marks used in the text such as the Merry-Go-Round and Fern Canyon Nature Trail have been added to the Figure. See revised Figure 3.



Source: ESRI

Griffith Park South Water Recycling Project. 211490.27

Figure 3
Project Site

Final MND Page	Clarification/Revision
8	*In response to Comment 2-H and 2-I, an editorial addition has been made to Section 1.4,* Project Description *of this Final MND as follows:* A recycled water pump station would be located on the east side of Fire Road within a LADWP easement. It would be located on a 40-foot by 50-foot pad. The proposed pump station would consist of two operating pumps and one back-up pump. A minimum flow of 1,400 gallons per minute (gpm) would be required to fill the proposed recycled water tank in 12 hours. The base elevation of the pump station would be at approximately 525 feet. ~~to~~ The base elevation of the recycled water tank is approximately 1,110 feet, the tank fill elevation would be at ~~of~~ approximately 1,136 ~~1,140~~ feet and the top of the tank would at 1,140 feet; the head required to lift the water would be 615 feet. The pumps ~~station would be approximately 10 feet high and~~ would be enclosed within a one-story small housing structure to protect and secure the pump station. The pump station (e.g., small one-story housing structure) would be approximately 10 feet high.
10	*In response to Comment 2-J, an editorial addition has been made to Section 1.4,* Project Description *of this Final MND as follows:* The recycled water storage tank would replace the existing steel Tank 114 and would be approximately 30 feet high. The existing Tank 114 would be demolished, aboveground appurtenances removed, and the existing foundation abandoned.
10	*In response to Comment 2-L, an editorial change has been made to Section 1.4,* Project Description *of this Final MND as follows:* The proposed recycled water storage tank would have a holding capacity of 1 million gallons that would provide additional capacity for future customers that have been identified in the Recycled Water Master Planning Documents. ~~The proposed recycled water storage tank would be partially buried 10 feet below the existing ground elevation and would have a base elevation of approximately 1,110 feet.~~ The proposed recycled water storage tank would also have a potable water back-up ~~supplied from the existing 1,544 foot grade potable water system~~ supplied from the existing 1,544 service zone.
10	*In response to Comment 2-O, an editorial change has been made to Section 1.4.1,* Project Construction *of this Final MND as follows:* The proposed cut and cover pipelines would be installed using trenching construction techniques, except for the segment extending from Fern Canyon Nature Trailhead to the top of the hill near Cedar Grove ~~proposed recycled water tank~~. This segment would be installed using HDD method, which is a trenchless method of installing

Final MND Page	Clarification/Revision

underground pipeline and has minimal impact on the surrounding area. HDD is being proposed to avoid closing of the Fern Canyon Nature Trail and to prevent adverse visual impacts at Griffith Park.

10 *In response to Comment 2-P, an editorial change has been made to Section 1.4.1,* Project Construction *of this Final MND as follows:*

The construction of the proposed project would commence on ~~January~~ March ~~02,~~ 2014 and is anticipated to be completed by March ~~October 09,~~ 2017~~5~~. The project would be constructed in ~~three~~ four separate phases, including the cut and cover pipeline phase, the HDD pipeline phase, and tank and pump station phase. The cut and cover pipeline phase will include two separate segments or phases; Phase 1 along Crystal Springs Drive and Fire Road and Phase 2 at the top of the hill on Vista Del Valle Drive from Cedar Grove to Vista View point where the proposed tank would be located. Each phase ~~component~~ is described separately below. Regional access to the construction site would be via I-5. Construction access to the various parts of the alignment would be via Crystal Springs Drive from the I-5, Western Heritage Way from SR-134, and Fire Road adjacent to Crystal Springs Drive in Griffith Park. The proposed project would prepare a traffic control plan that would be reviewed and approved by the Los Angeles Department of Transportation.

10 *In response to Comment 2-Q, an editorial change has been made to Section 1.4.1,* Project Construction *of this Final MND as follows:*

Cut and Cover Pipelines

Construction activities would avoid disrupting activities at Griffith Park. The cut and cover pipeline phase will include two separate segments or phases; Phase 1 along Crystal Springs Drive and Fire Road, and Phase 2 at the top of the hill on Vista Del Valle Drive from Cedar Grove to Visa View point where the proposed tank would be built. The construction staging and parking area for Phase 1 of the cut and cover pipeline installation would be located near the Merry-Go-Round parking area, with access from Fire Road (Figure 3). Construction staging and parking area for Phase 2 of the cut and cover pipeline installation would be located at near the proposed tank and the exiting Tank 114, with access from Vista Del Valle Drive (Figure 3). Construction would occur five days a week, between the hours of 8:00 a.m. to 3:00 p.m.

Final MND Page	Clarification/Revision

12 *In response to Comment 2-X, an editorial change has been made to Section 1.4.2,* Project Operation *of this Final MND as follows:*

1.4.2 Project Operation

Operation and maintenance activities for the proposed project would be minimal and limited to intermittent pipeline, pump station and recycled water storage tank maintenance, generally not to exceed once per month. The proposed project would require minimal maintenance and monitoring related to periodic inspection for possible leaks and repairs. I~~i~~nfrequent routine maintenance activities would occur on average once per quarter.

12 *In response to Comment 2-Y, an editorial change has been made to Section 1.5,* Alternatives Considered but Withdrawn *of this Final MND as follows:*

LADWP has been working collaboratively with ~~LA~~RAP to find and implement the best possible project with the least disruptive impacts to Griffith Park environment and operations.

12 *In response to Comment 2-Z, an editorial change has been made to Section 1.5,* Alternatives Considered but Withdrawn *of this Final MND as follows:*

Retrofitting existing Tank ~~1~~114, rather than complete replacement, was considered. However, structural and corrosion testing led to the conclusion that this alternative was not suitable, as extensive retrofitting was required. An alternative new tank location was also considered at the footprint of existing Tank 114. However, due to the large size of the tank and the proximity of several oak trees, it was decided that the proposed site was more suitable, since removal of oaks would ~~not~~ be ~~required~~ avoided.

12 *In response to Comment 2-AA, an editorial change has been made to Section 1.5,* Alternatives Considered but Withdrawn *of this Final MND as follows:*

Four alternate pipeline alignments were considered. Two alternative pipeline routes were considered for the segment of pipeline between the Recycled Water Greenbelt line and the foot of Fern Canyon Nature Trailhead where a pump station was proposed. These were not chosen as the preferred alternative due to construction difficulties (impacts to park operations) and increased costs.

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13 *In response to Comment 2-AC, an editorial change has been made to Section 1.6,* Discretionary Approvals Required for the Project *of this Final MND as follows:*

Table 1 presents a preliminary list of the agencies and entities with discretionary approval over the GPSWRP.

TABLE 1
DISCRETIONARY PERMITS POTENTIALLY REQUIRED

Agency	Permits and Authorizations Required	Activities Subject to Regulations
California State Division of Occupational Safety and Health	• Permit for trench construction	• Any excavation activity five feet or deeper
State Water Resources Control Board, Division of Water Quality	• State Wide Construction General Permit	• Construction on a site of more than one acre
County of Los Angeles Department of Public Works	• Discharge Permit	• Construction dewatering and hydrostatic test water discharge into the storm system and channels
City of Los Angeles Department of Public Works, Bureau of Engineering	• Excavation Permit • Class 'A' Permanent Resurfacing Permit	• Any trench excavation activities within public right-of-way • Excavations of pipeline construction and substructure investigation (potholing)
City of Los Angeles Department of Public Works, Bureau of Sanitation	• Industrial Waste Permit	• Pump or chlorine discharge water •
City of Los Angeles Department of Public Works, Bureau of Street Services, Street Tree Division	• Permit for removal or trimming of trees	• Removal of any tree on City streets or public property. Removal of more than three trees may require review and approval by the Board of Public Works.
City of Los Angeles Department of Recreation and Parks<u>, Board of Recreation and Parks Commission</u>	• Memorandum of Understanding •	• Between LADWP and ~~LA~~RAP concerning ownership of facilities; and easements <u>and right-of-entry permit</u> for facilities to be installed
California Department of Public Health	• Submittal of design drawings	• Submittal of design drawings
County of Los Angeles Department of Public Health	• Submittal of on-site drawings	• Coordinate with LACDPH to conduct cross-connection inspection during construction and testing prior to going into service

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Agency	Permits and Authorizations Required	Activities Subject to Regulations
Los Angeles Department of Transportation	• Traffic Control Plan	• Permit oversized vehicles • Construction Traffic

21 *In response to Comment 2-AG and 2-AH, an editorial change has been made to Section 2.3,* Air Quality*, letter c) of this Final MND as follows:*

c) **Less than Significant Impact.** Proposed project construction would result in both dust and exhaust emissions from trenching activities during the construction and installation of the water pipeline and ancillary facilities. SCAQMD Rule 403 requires that fugitive dust emission control measures be implemented to adequately prevent visible dust from leaving the property and to minimize $PM_{2.5}$ and PM_{10} emissions.

26 *In response to Comment 2-AH, an editorial change has been made to Section 2.4,* Biological Resources*, of the Final MND as follows:*

Coast Horned Lizard, Coastal Whiptail, and Silvery Legless Lizard

According to a biological inventory report prepared for the Trust for Public Land (Cooper, 2009), the coast horned lizard has recently (2009) been confirmed as a rare resident on high ridges of Griffith Park and Cahuenga Peak, where it formerly (until the 1970s) occurred throughout the park's lower slopes and canyons. The coast horned lizard has become extremely rare in the greater Los Angeles metropolitan region, having been extirpated from the entire coastal plain and most of the San Fernando and San Gabriel Valleys. A combination of broad scale habitat modification and the displacement of native harvester ants by non-native Argentine ants have been implicated in declines within Los Angeles County. The coastal whiptail has been found in the upper portions of Griffith Park in open, sparsely vegetated areas. Suitable habitat for the silvery legless lizard is present within the oak woodland and chaparral communities, particularly where there is a layer of leaf litter present. ~~Both~~ All reptile species have the potential to occupy portions of the project site.

30 *In response to Comment 2-AL, an editorial change has been made to Section 2.4,* Biological Resources*, of the Final MND as follows:*

Reptiles

The Project site contains suitable scrub and woodland habitat for the coast horned lizard, coastal whiptail, and the silvery legless lizard. However, no impacts would

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likely occur to these species during Project activities because the majority of habitat impact is to disturbed and/or developed areas where they are less like to be present. In addition, during mobilization of construction equipment, reptile species within the area would likely disperse due to increased noise level. Direct impacts to special status reptile species could produce direct impacts to reptile species due to project implementation. These impacts would be reduced to less than significant levels with the implementation of M~~m~~itigation M~~m~~easure BIO-3, which requires preconstruction clearance surveys.

30 *In response to Comment 2-AM, an editorial change has been made to Section 2.4,* Biological Resources*, of the Final MND as follows:*

Bats

Although the Project site contains suitable roosting habitat for hoary and silver-haired bats, it is unlikely that these species would be impacted by Project implementation because the Project would limit any potential tree trimming activities during the bat breeding season from March to August. Additionally, potential roosting sites may occur within the trees found within the Project site; however, no direct impact to oak, walnut, and Australian silk oak trees are anticipated to be removed by the proposed project. Potential roosting habitat for the western mastiff bat can be found within existing buildings and crags adjacent to the Project site in Griffith Park. Potential roost sites would not be impacted by Project activities because no existing buildings and crags would be impacted by the project. The project includes removal of the existing water tank and replacement with a larger recycled water tank in the same general area. Therefore, if the existing water tank was used as a potential roosting site, the tank would be replaced for a similar use at project completion. Direct impacts to the tree roosting species (hoary, silver-haired bat) will be minimized by conducting any pruning activities outside of the breeding season for bats as specified by CDFW. Implementation of mitigation would reduce impacts to less than significant levels. With implementation of ~~m~~Mitigation ~~m~~Measure~~s~~ BIO-3, these potential roosting sites will be identified prior to project implementation and implementation of mitigation would reduce impacts to less than significant levels.

31 *In response to Comment 2-AO, an editorial change has been made to Section 2.4,* Biological Resources*, of the Final MND as follows:*

However depending on the timing of construction, eggs and nestlings of bird species with small, well-hidden nests could be subject to loss, which would result in a violation of the Migratory Bird Treaty Act (MTBA) and Fish and Game Code.

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33 *In response to Comment 2-AP and 2-AQ, an editorial change has been made to Section 2.4,* Biological Resources*, of the Draft MND as follows:*

BIO-4: Protected Trees. The presence of protected trees shall be considered during Project construction activities including the creation of staging areas, as well as trenching, staging areas and demolition. The following mitigation measures are recommended to avoid impacts to protected trees with the project area:

- A qualified arborist shall be present to identify and demarcate protected trees (and its protected zones [~~i.e., driplines~~ 1 ½ feet times the diameter of the trunk at breast height]) within the entire Project site that have the potential to be impacted by construction activities and to assist in guiding construction activities to avoid or minimize impacts to protected trees.
- Situate all project elements including trenching paths, on existing access routes or within the clearing outside of the ~~drip lines~~ protection zones of protected trees ~~to the greatest extent feasible~~ to prevent damage to protected trees.
- If any impacts to city protected trees are unavoidable, then the qualified arborist shall assist in processing a permit application with the City of Los Angeles Urban Forestry Division. In such circumstances, a permit shall be obtained prior to performing any project activities that may impact a protected tree.

33 *In response to Comment 2-AR, an editorial change has been made to Section 2.4,* Biological Resources*, of the Final MND as follows:*

BIO-5: Nesting Birds. A number of resident and seasonal bird species have the potential to nest on the Project site in trees and adjacent vegetation. The following mitigation measures are ~~recommended~~ required to reduce potential impacts to nesting birds during construction activities:

- If construction is scheduled to occur during the non-nesting season (September through January 31), no preconstruction surveys or additional measures are recommended. If construction is scheduled to occur during the breeding season (February 1–August 31), ~~it is recommended that~~ a qualified wildlife biologist shall conduct preconstruction surveys of all potential nesting habitats within 500 feet of construction activities. At least one surveys should be conducted no more than 3 days prior to construction activities.
- If active nests are found, no-disturbance buffers shall be implemented around each nest based on the species and location of the nest as determined by a qualified biologist. A general buffer distance generally includes 500-feet around any confirmed active raptor nest and a 250-foot buffer around nests of passerine bird species protected in accordance with the MBTA and/or Fish and Game Code. The buffers should be implemented until it is determined by a qualified wildlife biologist that young have fledged and the nest is determined to be inactive.

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34 *In response to Comment 2-AS, an editorial change has been made to Section 2.4,* Biological Resources*, of the Final MND as follows:*

f) No Impact. The proposed project is not located within an adopted Habitat Conservation Plan, Natural Community Conservation Plan (HCP/NCCP) or other approved local, regional, or state HCPs. However, the project area is located within the Griffith Park Significant Ecological Area (SEA) as defined by the County of Los Angeles. The SEA is described as an extensive, relatively undisturbed island of natural vegetation in an urbanized, metropolitan area. The SEA supports the coastal sage scrub, chaparral, riparian, and southern oak woodland plant communities typical for the interior mountain ranges of Southern California. The proposed project is also located within the Griffith Park Wildlife Management Plan area as defined by the Los Angeles Department of Recreation and Parks. While this plan is not an official designation, the ~~This~~ plan establishes a baseline in terms of known threats to wildlife and includes Best Management Practices (BMPs) that help assist the Los Angeles Department of Recreation and Parks staff in making land management decisions in Griffith Park and the surrounding open space areas. The proposed project would follow the recommended BMPs whenever applicable. In addition, the project would not alter land use and would not conflict with the provisions of the Griffith Park Wildlife Management Plan, and no impacts would occur.

39 *In response to Comment 2-AU, an editorial change has been made to Section 2.5,* Cultural Resources*, of the Final MND as follows:*

CUL-3: Preparation of Paleontological Resource Monitoring and Mitigation Plan and Pre-Construction Training. Prior to start of earthmoving activities associated with sensitive fossil-bearing formations located in the southern portion of the project site (includes portions of the proposed cut and cover pipeline, proposed potable pipeline, and proposed and existing water tanks), a qualified paleontologist shall prepare a Paleontological Resource Monitoring and Mitigation Plan (PRMMP) based on and consistent with information provided in *Paleontological Investigation Report of the Los Angeles Department of Water and Power Griffith Park South Water Recycling Project, Los Angeles, California* (Aron and Kelly, 2013). The PRMMP shall outline: sensitive areas within the limits of the project that require paleontological resources monitoring and paleontological monitoring protocols; inadvertent discovery procedures; recovery and salvage measures for potentially significant fossil and microfossil discoveries; laboratory methods; and reporting and curation requirements.

The qualified paleontologist shall also conduct pre-construction worker environmental

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awareness training prior to construction activities associated with sensitive fossil-bearing formations located in the southern portion of the project site (includes portions of the proposed cut and cover pipeline, proposed potable pipeline, and proposed and existing water tanks). This training shall include information on what to do in case an unanticipated discovery is made by a worker. All construction personnel shall be informed of the possibility of encountering fossils, and instructed to immediately inform the construction foreman if any bones or other potential fossils are unexpectedly unearthed in an area where paleontological monitoring is not required. LADWP shall ensure that construction personnel are made available for and attend the training and shall retain documentation demonstrating attendance. This training may be conducted in coordination with training required under Mitigation Measure CUL-1.

40 *In response to Comment 2-AV, an editorial change has been made to Section 2.5,* Cultural Resources*, of the Final MND as follows:*

CUL-6: If human remains are encountered, LADWP shall halt work in the vicinity (within 100 feet) of the find and contact the Los Angeles County Coroner in accordance with Public Resources Code (PRC) Section 5097.98 and Health and Safety Code Section 7050.5. If the County Coroner determines that the remains are Native American, the NAHC shall be notified, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC Section 5097.98 (as amended by AB 2641). The NAHC shall designate a Most Likely Descendant (MLD) for the remains per PRC Section 5097.98. Until RAP as the landowner has conferred with the MLD regarding their recommendations, as prescribed in PRC Section 5097.98, taking into account the possibility of multiple human remains, LADWP shall ensure that the immediate vicinity where the Native American human remains are located is not damaged or disturbed by further development activity, according to generally accepted cultural or archaeological standards or practices~~, until the landowner has discussed and conferred with the MLD regarding their recommendations, as prescribed in PRC Section 5097.98, taking into account the possibility of multiple human remains~~.

41 *In response to Comment 2-AW, an editorial change has been made to Section 2.6,* Geology and Soils *of the Final MND as follows:*

a) **Less than Significant Impact.** ~~The project area is located in the eastern Santa Monica Mountains, which is an east-west trending range. Geological formations in the proposed project area are of Cenozoic age, chiefly Neogene and Quaternary.~~ The proposed project is not located within an Alquist-Priolo Earthquake Fault Zone. The easternmost part of the Santa Monica Mountains

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~~is~~ include~~s~~d ~~within~~ Griffith Park, which straddles the southern boundary of the Burbank Quadrangle. The Verdugo Mountains extend across the northeastern third of the Burbank Quadrangle.The nearest fault line is the Hollywood Fault, located approximately 0.6 miles south of the project area. The Hollywood Fault is considered a westward extension of the Raymond fault and is located relatively parallel to the Santa Monica fault. The fault line extends in an east-northeast direction for approximately nine miles through Beverly Hills, West Hollywood, and Hollywood to the Los Angeles River and I-5 Freeway. The most recent surface rupture along this fault was during the Holocene period (SCEDC, 2013).The proposed project is not located in a City of Los Angeles designated Fault Rupture Study Zone.

42 *In response to Comment 2-AX, an editorial change has been made to Section 2.6,* Geology and Soils *of the Final MND as follows:*

The proposed project facilities would be designed and constructed in compliance with the City of Los Angeles Bureau of Engineering Standard Project Specifications. Compliance with applicable regulations would ensure safe and ~~efficient~~ effective project implementation within areas subject to seismic movement. Per standard practice, site-specific geotechnical and geological investigations that focus on these potential hazards are performed as part of project design studies. No habitable structures would be developed, and implementation of the proposed project would not result in an increase in population ~~on the project site~~ subject to seismic standards. Construction activities would be short-term and operational activities would be limited to infrequent maintenance activities. The project designs would be subject to Special Publication 117, "Guidelines for Evaluating and Mitigating Seismic Hazards in California." Conformance with ~~this publication~~ these guidelines in addition to the California Building Code (CBC) requirements would provide for protection from fault rupture. Therefore, the proposed project would not substantially expose people or structures to adverse effects related to ground rupture, and impacts would be less than significant.

42 *In response to Comment 2-AY, an editorial change has been made to Section 2.6,* Geology and Soils*, of the Final MND as follows:*

The pipelines and recycled water tank would be designed to accommodate site-specific ground motions. Standard geotechnical and structural design criteria required in the CBC would reduce excessive earthquake ~~response~~ effects and minimize potential damage or collapse of the pipelines and recycled water tank. CBC requirements for the pipelines may include flexible pipe joints, shortened pipe lengths, automatic isolation valves, installation of the pipelines inside a protective casing, and

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shallow or above-ground installation of the pipelines. Any and all of these requirements will be used in the final design of the pipeline. Compliance with the CBC would minimize the potential for damage from strong ground shaking. Therefore, with the incorporation of Mitigation Measure **GEO-1**, the proposed project would result in a less-than-significant impact with mitigation related to groundshaking.

42 *In response to Comment 2-AZ, an editorial change has been made to Section 2.6,* Geology and Soils*, of the Final MND as follows:*

GEO-1: Prior to the approval of construction plans for the project, including pipelines, pump station, and storage tank, LADWP shall complete a design-level geotechnical investigation. The geotechnical evaluation shall identify soil properties needed for the development of site-specific design criteria. R~~ecommendations made as a r~~esults of the~~se~~ investigation~~s~~ will require specific design elements to protect new structures from seismic hazards ~~shall become incorporated into the proposed project final design~~.

43 *In response to Comment 2-BA, an editorial change has been made to Section 2.6,* Geology and Soils*, of the Final MND as follows:*

a.iii) **Less than Significant Impact.** Liquefaction occurs in saturated and loose soils in areas where the groundwater table is 50 feet or less below ground surface (bgs). During an earthquake, a sudden increase in high core water pressure can cause soils to lose strength and behave as a liquid. As shown on Figure 5, the proposed recycled water storage tank and pump station, and HDD tunneling would not be located within an area identified with the potential for liquefaction ~~area,~~. H~~h~~owever, segments of the proposed pipeline up to the pump station. ~~are located in areas designated as having liquefaction potential.~~ The pump station would also be ~~adjacent to this~~ potentially at risk. All infrastructure improvements in the State of California must comply with the seismic design parameters contained in the CBC seismic requirements. Compliance with the CBC standards in the design and construction of the proposed project would reduce potential damage to the new infrastructure from liquefaction. Therefore, the proposed project would not expose people or structures to potential substantial adverse effects related to liquefaction and impacts would be less than significant.

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43 *In response to Comment 2-BB, an editorial change has been made to Section 2.6,* Geology and Soils*, of the Final MND as follows:*

a.iv) **Less than Significant Impact with Mitigation.** Landslides are characterized as deep-seated ground failures, in which a large section of a slope detaches and slides downhill. As shown on Figure 5, the proposed HDD pipeline is partially located within an area that has earthquake induced landslide potential. The proposed recycled water storage tank and pump station and HDD tunneling would not be located directly in landslide potential areas. Construction of the proposed pipeline would be through HDD method underground. As previously stated, the Hollywood Fault is approximately 0.6 miles south of the project site and the proposed project is located within a seismically active area of California. ~~Nonetheless~~ So, all infrastructure improvements ~~in the State of California~~ must comply with the seismic design parameters contained in the CBC seismic requirements. Compliance with the CBC standards in the design and construction of the proposed project would reduce potential damage to the new infrastructure from landslides. ~~Construction of the pipeline would be located underground and would be constructed and designed in compliance with applicable building codes and standards of the CBC and the Bureau of Engineering.~~

The HDD pipeline alignment would be designed to accommodate landslides. Standard geotechnical and structural design criteria required in the CBC would reduce excessive landslide ~~response~~ effects and minimize potential damage or collapse of the pipeline. Compliance with the CBC would minimize the potential for damage from landslides. With the incorporation of Mitigation Measure **GEO-1**, the proposed project would result in a less-than-significant impact with mitigation related to landslides.

45 *In response to Comment 2-BC, an editorial change has been made to Section 2.6,* Geology and Soils*, of the Final MND as follows:*

b) **Less than Significant Impact.** The proposed project would include trenching activities within the 30-foot construction corridor primarily within the existing roadway right-of-ways. The trench would be approximately 2 feet below surface and 3 feet wide. Approximately 1,520 total cubic yards of dirt and topsoil would be excavated and reused as backfill after the pipeline installation. The proposed project would not contribute to soil erosion or loss of topsoil. Construction of the proposed project would require ~~compliance with the Construction General Permit and~~ the preparation of a Stormwater Pollution Prevention Plan (SWPPP) ~~for the construction phase of the~~

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~~proposed project~~ in accordance with the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges associated with Construction and Land Disturbance Activities (Construction General Permit). The SWPPP shall list all practicable and applicable Best Management Practices (BMPs) in order to reduce soil erosion during construction. Compliance with the NPDES Construction General Permit will ensure that ~~no substantial adverse~~ construction related erosion impacts ~~would occur, and impacts~~ would be less than significant. As described further in Section 3.9 Hydrology and Water Quality, the proposed project would implement BMPs to minimize the occurrence of soil erosion or loss of topsoil. Therefore, impacts related to soil erosion or the loss of topsoil would be less than significant.

45 *In response to Comment 2-BD, an editorial change has been made to Section 2.6,* Geology and Soils*, of the Final MND as follows:*

c) **Less than Significant Impact.** Refer to discussions in responses ~~3~~2.6(a)(i) through ~~3~~2.6(a)(iv). The project site is located within an area that is subject to landslides or liquefaction. Thus, impacts from landslides, liquefaction and lateral spreading may occur. Subsidence occurs when a void is located or created underneath the ground surface causing the surface to collapse. Subsidence can be created through tunnels, wells, covered quarries, and caves beneath a surface. In addition, subsidence usually occurs as a result of excessive groundwater pumping or oil extraction. The proposed project would not expose people to seismic-related ground failure because the on-site facilities would be unmanned, and no habitable structures would be built as part of the proposed project. Furthermore, on-site activities would be limited to infrequent maintenance activities. As previously stated, all infrastructure improvements in the State of California must comply with the seismic design parameters contained in the CBC seismic requirements. Compliance with the CBC standards in the design and construction of the proposed project would reduce potential damage to the new infrastructure from on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. As a result, the proposed project would not expose people or structures to potential substantial adverse effects related to unstable soils, and impacts would be less than significant.

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47 *In response to Comment 2-BE, an editorial change has been made to Section 2.7,* Greenhouse Gases*, of the Final MND as follows:*

a) **Less than Significant Impact.** Greenhouse gas (GHG) impacts are considered exclusively cumulative impacts. Greenhouse gasses include but are not limited to CO_2, CO, NO_X, hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF6). Construction-related GHG emissions ~~of GHG~~ would be temporary and would not be an on-going burden to the states GHG inventory. Construction related emissions would total 103 metric tons of carbon dioxide equivalents (CO2e) in 2014 and 113 metric tons in 2015. These emissions are less than the 10,000 metric ton per day of CO2e threshold established by SCAQMD for industrial projects, were it to apply to construction-related emissions. There would be no~~t be any~~ sources of operational emissions associated with the proposed pipelines, tank and pump station. Operation of the pump station would require intermittent electrical demand which would be associated with indirect GHG emissions if electricity used were from non-renewable resources. These electricity-related operational GHG emissions would be negligible. Therefore, impacts regarding the generation of GHG emissions would be less than significant.

47 *In response to Comment 2-BF, an editorial change has been made to Section 2.7,* Greenhouse Gases*, of the Final MND as follows:*

b) **No Impact.** The proposed project would not markedly increase emissions of GHGs and is not anticipated to conflict with applicable GHG plans, policies, or regulations. State of California Assembly Bill 32 (AB 32) requires that the California Air Resource Board (CARB), in coordination with state agencies, adopt regulations to require the reporting and verification of statewide GHG emissions and monitor and enforce compliance with the program. State of California Senate Bill 375 (SB 375) requires the reduction of GHG emissions by discouraging sprawl development and dependence on car travel. SB 375 assists in the implementation of AB 32 by integrating land use, regional transportation, and housing plan~~nings~~s. ~~The proposed project involves installation of a water pipeline installation that would require minimal and infrequent operational activities. In addition, t~~The proposed project would not generate GHG emissions that would significantly impact the environment~~,~~ and therefore, ~~The proposed project~~ would not conflict with AB 32 or SB 375 ~~and no impacts would occur~~.

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50	*In response to Comment 2-BG, an editorial change has been made to Section 2.8, Hazards and Hazardous Materials, of the Final MND as follows:*

h) **Less than Significant Impact.** The project area is located in a Very High Hazard Severity Zone, as identified by the City of Los Angeles Bureau of Engineering. The Griffith Park Fire of 2007 burned over 800 acres, including portions of the project site. However, the proposed project would not expose people or structures to significant injury or death as construction activities would be short-term and operational activities would be limited and infrequent. No habitable structures would be developed for the proposed project. As described in 2.8(b), proper handling, storage, and disposal of fuels and other flammable materials in accordance with local safety requirements would minimize the risk of fires. Therefore, the proposed project is not anticipated to impact people or structures from wildland fires, and impacts would be less than significant.

52 *In response to Comment 2-BH, an editorial change has been made to Section 2.9, Hydrology and Water Quality, of the Final MND as follows:*

a) **Less than Significant Impact.** The proposed project would not violate any water quality standards or waste discharge requirements as the proposed project would consist of a new pipeline to convey recycled water, a pump station, and a new recycled water storage tank. Construction-related soil activities would be limited to removal of asphalt/pavement, trenching, stockpiling, and backfilling the trench after installation of the pipe with the excavated soils. The proposed project would prepare a SWPPP in accordance with the NPDES Construction General Permit. The SWPPP is required to list and implement all practicable BMPs in order to protect water quality during construction. Compliance with the NPDES standards through preparation and implementation of a SWPPP would ensure that no substantial adverse impacts would occur. Therefore, impacts would be less than significant.

52 *In response to Comment 2-BI and 2-BJ, an editorial change has been made to Section 2.9, Hydrology and Water Quality, of the Final MND as follows:*

c) **Less than Significant Impact.** Construction and operation of the proposed project facilities would be located within Griffith Park and would not alter the existing drainage pattern of the project site. The proposed pipeline would be located underground and would not change the existing drainage pattern throughout its alignment. The recycled water storage tank and pump station would be located on concrete ~~cement~~ pads ~~and adjacent to existing structures~~,

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which may slightly alter the drainage pattern of that area. However, ~~there are no streams or rivers within the project area and~~ the proposed project is not anticipated to increase runoff, and would adhere to all NPDES regulations and implement BMPs to ensure that construction does not result in erosion impacts. Therefore, the proposed project would not substantially alter the existing drainage pattern of the site or area and substantial erosion o~~f~~r siltation would not occur. Impacts would be less than significant.

52 *In response to Comment 2-BK, an editorial change has been made to Section 2.9, Hydrology and Water Quality, of the Final MND as follows:*

e) **Less than Significant Impact.** The proposed project would slightly increase impervious surfaces within the project vicinity, by developing concrete ~~cement~~ pads to support the recycled water tank and pump station. However, the increase of the amount of impervious surfaces would not generate a significant amount of additional runoff, and would not change the course of stormwater runoff. Additionally, construction-related activities involving earth moving during installation of the pipeline would be limited to trenching and backfilling the pipeline alignment. The proposed project would adhere to all regulations and implement BMPs pursuant to the project specific SWPPP ~~which~~ that would ensure that construction activities do not result in polluted runoff. As a result, the proposed project would not create or ~~contribute to polluted~~ increase the amount of runoff ~~water or runoff~~ that would exceed the existing ~~drainage~~ capacity of the ~~project area~~ stormwater drainage systems, and impacts would be less than significant.

53 *In response to Comment 2-BL, an editorial change has been made to Section 2.9, Hydrology and Water Quality, of the Final MND as follows:*

g) **No Impact.** The proposed project is not located within a 100-year flood hazard area as mapped on the Federal Emergency Management Agency (FEMA) 100-year Flood Insurance Rate Map. In addition, the proposed project does not include housing or other habitable structures that would expose people property to flood hazards. Therefore, no impact would occur.

53 *In response to Comment 2-BM, an editorial change has been made to Section 2.9, Hydrology and Water Quality, of the Final MND as follows:*

i) **Less than Significant Impact.** The Mulholland Dam and Hollywood Reservoir, owned and operated by LADWP, are located in the Hollywood Hills approximately three miles west of the project site. The Mulholland Dam

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was built in 1924 and has a capacity of 4,036 acre feet, creating the Hollywood Reservoir. The dam has a height of approximately 195 feet and a crest elevation of 756 feet. The depth of the reservoir is approximately 183 feet. The proposed project is not within the dam inundation area and would not result in construction of any structures that may be affected in the event of catastrophic dam failure. ~~In the event of catastrophic dam failure, proposed project facilities could be reinstalled and constructed.~~ In addition, no levees or dams are located on the project site and no off-site levees or dams would be modified as part of the proposed project. The proposed tank would be maintained on a regular routine to ensure the tank is repaired as necessary reducing the potential for tank failure. As a result, the proposed project would not expose people or structures to a significant risk of loss as a result of the failure of a levee or dam.

53 *In response to Comment 2-BN, an editorial change has been made to Section 2.9, Hydrology and Water Quality, of the Final MND as follows:*

j) **No Impact**. Tsunamis are usually caused by displacement of the ocean floor causing large waves and are typically generated by seismic activity. The project site is located approximately 19 miles from the Pacific Ocean, therefore a tsunami hazard is not present for project site. A seiche is a standing wave in an enclosed or partly enclosed body of water. Seiches are normally caused by earthquake activity, and can affect harbors, bays, lakes, rivers, and canals. The Hollywood Reservoir is located approximately three miles west of the project site, which is too far to be impacted by a seiche event at the reservoir. Should an earthquake onsite generate a seiche within the tank, the seiche would remain contained within the tank because there is no opening to allow the water to escape, as in a lake or open reservoir setting. Lastly, mudflow is a mixture of soil and water that runs like a river of mud down a hillside and is usually generated by heavy rainfall. The project site is located adjacent to a hillside that would not expose the project to potential mudflow as the hillside is large vegetated and would slow the flow water should water escape rapidly. The proposed tank would be maintained on a regular routine to ensure the tank is repaired as necessary reducing the potential for tank failure. Therefore, impacts related to seiche, tsunami, or mudflow mudflows would not occur.

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55 *In response to Comment 2-BO, an editorial change has been made to Section 2.10, Land Use and Planning, of the Final MND as follows:*

b) **No impact.** The project site has a land use designation and zoned as of OS (Open Space). The adjoining areas are also designated OS and zoned OS. The proposed water pipeline would be located underground and would not constrain or change the existing land uses within the project area. Construction of the aboveground facilities would not conflict with the existing land use and zoning designations. As a result, no impacts related to conflicts with applicable land use plans, policies, or regulations related to avoiding or mitigating an environmental effects would occur.

55 *In response to Comment 2-BP, an editorial change has been made to Section 2.10, Land Use and Planning, of the Final MND as follows:*

c) **No Impact.** As discussed in section ~~3~~2.4(f), the proposed project is not located within a HCP or NCCP. However, the project area is located within the Griffith Park Wildlife Management Plan area. This plan establishes a baseline in terms of known threats to wildlife and includes BMPs that help assist the Los Angeles Department of Recreation and Parks staff in making land management decisions in Griffith Park and the surrounding open space areas. The proposed project would follow the recommended BMPs whenever applicable. In addition, the project would not alter land use and therefore would not conflict with the plan.

58 *In response to Comment 2-BQ, an editorial change has been made to Section 2.12, Noise, of the Final MND as follows:*

Construction of the proposed project would include the use of a backhoe to excavate the pipeline trench, a flat bed truck to transport the new pipe material, and accessory vehicles (i.e., pick-up trucks) to take the construction crew to and from the project site. Construction activities would occur 7:00 a.m. to 4:00 p.m., Monday through Friday. There are no sensitive receptors located within 500 meters~~t~~ (1,640 feet) of the project pipeline alignment, pump station or water tank sites. Additionally, construction-related noise would be short-term and would not expose sensitive receptors to noise. Noise generated by truck travel to and from the project area would also be short-term and temporary and would not produce substantial increases in traffic that could result in a significant increase in noise levels. Operation of the proposed water pipeline and equipment would generate minimal noise. The proposed pump station would include an enclosure around the pump which would attenuate operational noise. The onsite facilities would be unmanned with exception of

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infrequent maintenance activities on the equipment that would not exceed noise standards. As a result, the proposed project would not generate noise levels in excess of adopted standards and noise impacts would be less than significant.

58 *In response to Comment 2-BR, an editorial change has been made to Section 2.12, Noise, of the Final MND as follows:*

d) **Less than Significant Impact.** See responses 12. a through c above. Construction noise would be short-term (intermittently over ~~22~~ 36 months) and would result in a temporary increase in ambient noise levels. However, the project area is open space and there are no permanent sensitive receptors located in proximity to the project site that could be affected by the temporary construction noise increase. Thus, construction-related noise is not considered to be substantial. Operation of the pipeline and well equipment would be unmanned with exception of infrequent maintenance events, and would not result in a substantial increase in ambient noise. Therefore, impacts related to substantial temporary or periodic increases in ambient noise levels would be less than significant.

62 *In response to Comment 2-BS, an editorial change has been made to Section 2.15, Recreation, of the Final MND as follows:*

a) **Less than Significant Impacts.** The proposed project would be located within Griffith Park which is frequently used by visitors. The proposed project would involve the construction and installation of a recycled water pipeline, recycled water storage tank, and a pump station. The proposed project includes the use of HDD method at Fern Canyon Nature Trailhead to avoid impacts to trail users. The proposed project would not increase the use of the park facilities. Operation of the proposed project would not create population growth that would increase the use of the park such that substantial physical deterioration of the facilities would occur. Therefore, less than significant impacts would occur.

LADWP has coordinated extensively with ~~LA~~RAP for implementation of the proposed project. As discussed in Section 2.5 Alternatives Considered but Withdrawn, several alternatives were evaluated with cooperation from both departments before concluding on the proposed project. During discussions for the proposed project, concerns were raised regarding construction impacts during the summers of 2014 and 2015 due to the 2015 Special Olympics World Summer Games will be held partly in Griffith Park. Los Angeles Memorial Coliseum will serve as the main venue, with event locations staged

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in several other locations in the city, including Griffith Park. Preparation and activities for the event in Griffith Park would take place over the summers of 2014 and 2015. Construction activities have been phased to avoid project construction during the Special Olympics over the summers of 2014 and 2015. Therefore, less than significant impacts would occur to park operations.

64 *In response to Comment 2-BU, an editorial change has been made to Section 2.16, Transportation and Traffic, of the Final MND as follows:*

b) **Less than Significant.** The 2010 Congestion Management Program (CMP) for Los Angeles County addresses the impact of local growth on the regional transportation system. The goal of the CMP is to comply with statutory requirements of the CMP, including monitoring level of service (LOS) on the CMP Highway and Roadway network, measuring frequency and routing of public transit, implementation the Transportation Demand Management and Land Use Analysis Program Ordinances, and helping local jurisdictions meet their responsibilities under the CMP. The proposed construction truck route would utilize I-5 and SR-134, which are CMP highways. The truck route would also utilize Crystal Springs Drive from I-5, Western Heritage Way from SR-134, and Fire Road adjacent to Crystal Springs Drive in Griffith Park roadways. These roadways ~~are/~~are not designated as CMP roadways. Construction related traffic would consist of a maximum of 103 vehicular roundtrips during the tank and pump station construction phase and approximately 145 roundtrip per day generated by construction workers. The temporary addition of ~~170~~ 248 truck trips to the roadways during the ~~HDD pipeline and~~ pump station and tank replacement phase~~s~~ would be minimal. No additional traffic analysis is required as the proposed project does not fit the following criteria requiring further analysis:

- The proposed project will add 50 or more trips during AM or PM weekday peak hours to CMP arterial monitoring intersections
- The proposed project will add 50 or more peak hour trips to CMP arterial segments
- The proposed project will add 150 or more trips to mainline freeways during AM or PM weekday peak hours

Construction-related truck trips would be short-term and minimal and is not anticipated to permanently impact the existing LOS or conflict with the existing roadway conditions. In addition, construction deliveries and departures would be timed to avoid mainline freeways during AM and PM weekday peak hours. Operational truck trips would be limited and infrequent

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and would not impact the existing LOS or conflict with the existing roadway conditions. Additionally, the proposed project would be required to prepare a traffic control plan that would be reviewed and approved by the Los Angeles Department of Transportation. Therefore impacts would be less than significant.

65 *In response to Comment 2-BV, an editorial change has been made to Section 2.16, Transportation and Traffic, of the Final MND as follows:*

d) ~~No~~ **Less than Significant Impact.** The proposed project would not alter existing roadways nor include any hazardous design features such as sharp curves or dangerous intersections. No incompatible uses such as farm equipment are proposed. As stated in response 2.16 a), construction access to the various parts of the alignment would be via Crystal Springs Drive from I-5, Western Heritage Way from SR-134, and Fire Road adjacent to Crystal Springs Drive in Griffith Park. All construction activities would occur within the 30-foot construction corridor, and no roadway or lane closures are anticipated. Construction-related truck trips would be minimal and short-term and are not anticipated to impact the existing circulation system performance. As a result, traffic impacts to the roadway system from construction would be less than significant. ~~As such, no impacts would occur.~~

65 *In response to Comment 2-BW, an editorial change has been made to Section 2.16, Transportation and Traffic, of the Final MND as follows:*

f) ~~No~~ **Less than Significant Impact.** Segments of the proposed pipeline would be located in proximity to the Fern Canyon Nature Trail, which is used frequently by local residents and visitors as a walking and hiking path. To avoid permanent adverse impacts to the existing Fern Canyon Nature Trail, installation of the pipeline would be completed using the HDD method. This would ensure the nature trail impacts, although short-term, would not adversely impact the trail during construction and operation. Construction activities would be staged near the trailhead and located along portions of Nature Fern Canyon Trail (refer to Figure 3). However, access to the trail would remain unimpeded and use of the trail would continue during construction activities. Construction activities would not conflict with the Griffith Park Master Plan and other policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities within the project area. At the end of construction, the project area would return to pre-construction conditions, with the exception of the new above ground structures. In addition, the proposed project would not propose any activities that would

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conflict with policies, plans, or programs support alternative transportation. No i<u>I</u>mpacts would <u>be less than significant</u> occur.

70 *In response to Comment 2-CA, an editorial change has been made to Section 2.18, Mandatory Findings of Significance, of the Final MND as follows:*

TABLE 4
CUMULATIVE PROJECTS LIST

Project	Location	Land Use
River Supply Conduit Improvement Project Lower Reach	Zoo Drive, north of Griffith Park	Roadway; Park
Riverside Drive Bridge Widening and Rehabilitation Project	Bette Davis picnic area on the northern boundary of Griffith park	Park; Public Facility
Headworks Reservoir Project	6001 West Forest Lawn Drive	Park
Project	**Location**	**Land Use**
North Atwater Non-Motorized Bridge Project	3900 Chevy Chase Dr	Park
LADWP Power Reliability Improvement Project	Along Los Feliz Blvd	Roadway; Commercial
Griffith Park Baseball Fields	Crystal Springs Picnic Area of Griffith Park	Park; Public Facility
~~LA~~RAP ~~Shakespeare in the Park New Permanent Stage~~ <u>Griffith Park Performing Arts Center</u>	Old Zoo	Park; Public Facility
BOE Interceptor Sewer	Intersection of Crystal Springs Rd and the 5 freeway exit	Roadway; Park
2014/15 Special Olympics Games	Griffith Park	Park; Public Facility

SECTION 4
Response to Comments on the Mitigated Negative Declaration

4.1 Introduction

The Griffith Park South Water Recycling Project MND was distributed on October 25, 2013 for a 30-day public review period pursuant CEQA and its implementing guidelines. The public review period concluded on December 2, 2013. The MND was distributed to interested or involved public agencies and organizations for review. The MND was made available for general public review at LADWP, Environmental Affairs Division (111 North Hope Street, Room 1044), Los Feliz Library (1874 Hillhurst Avenue), Atwater Village Library (3379 Glendale Boulevard), Silver Lake Library (2411 Glendale Boulevard), and Central Library (630 West Fifth Street). In addition, the MND was available online at: http://www.ladwp.com/envnotices.

During this public review period, a total of four comment letters were received. Each letter has been assigned a number code, and individual comments in each letter have also been coded to facilitate responses. For example, the letter from the Department of Parks and Recreation is identified as Comment Letter 2, with comments noted as 2-A, 2-B, 2-C, etc. Copies of each comment letter are provided prior to the response to each letter. Comments that raise issues not directly related to the substance of the environmental analysis in the MND are noted but, in accordance with CEQA, did not receive a detailed response.

4.2 Responses to Written Comments that Address Environmental Issues in the MND

Letter No.	Agency/Organization/Individual	Date	Page No. of Response
1	State of California, Governor's Office of Planning and Research, State Clearinghouse *Signed: Scott Morgan*	November 22, 2013	104
2	City of Los Angeles Department of Recreation and Parks. *Signed: Paul Davis*	December 2, 2013	114
3	California Department of Transportation (Caltrans), District 7 *Signed: Dianna Watson*	October 29, 2013	142
4	Joyce Dillard	December 2, 2013	146

January 22, 2014

Mr. Scott Morgan
State Clearinghouse and Planning Unit
Governor's Office of Planning and Research
State of California
1400 Tenth Street
Sacramento, CA 95812-3044

Subject: Responses to Comments on the Initial Study/Mitigated Negative Declaration for the Griffith Park South Water Recycling Project

Thank you for your comments (Letter No. 1, enclosed) on the Initial Study/Mitigated Negative Declaration (IS/MND) for the Griffith Park South Water Recycling Project (Project). Your comments and a response to your comments are provided as follows:

Response 1-A

This comment states that the comment letter contains the comments provided by State agencies and also states that the Project has complied with State Clearinghouse review requirements. The comment letter included the Caltrans response letter.

Thank you for your comment. This comment includes introductory remarks and does not state a specific concern or question regarding the adequacy of the environmental impact analysis in the MND. The comment included the letter received from Caltrans; responses to Caltrans' comments are provided in Comment Letter 3. This comment has been forwarded to the City of Los Angeles Board of Water and Power Commissioners (Board) for review. No further response is required.

Adoption of the MND and consideration of the proposed Project by the Board is tentatively scheduled for March 4, 2014 at 11:00 a.m. The meeting location is:

Los Angeles Department of Water and Power
Room 1555-H, 15th Floor
111 North Hope Street
Los Angeles, CA 90012

111 N. Hope Street, Los Angeles, California 90012-2607 *Mailing address:* Box 51111, Los Angeles, CA 90051-5700
Telephone: (213) 367-4211 www.LADWP.com

Regular meeting agendas are available to the public at least 72 hours before the Board meets. The Board Agenda may be viewed on the LADWP website at http://www.ladwp.com/AboutLADWP or the commission office may be contacted at (213) 367-1350. If you have any questions or are in need of additional information, please contact Ms. Irene Paul of my staff at (213) 367-3509.

Sincerely,

Nadia J Paul for

Charles C. Holloway
Manager of Environmental Planning and Assessment

IP:mg
Enclosure
c/enc: Ms. Irene Y. Paul

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

November 22, 2013

Irene Paul
Los Angeles Department of Water and Power
111 North Hope Street, Room 1044
Los Angeles, CA 90012

Subject: Griffith Park South Water Recycling Project
SCH#: 2013101066

Dear Irene Paul:

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on November 21, 2013, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

SCH# 2013101066
Project Title Griffith Park South Water Recycling Project
Lead Agency Los Angeles Department of Water and Power

Type **MND** Mitigated Negative Declaration

Description The proposed project would expand the use of recycled water within Griffith Park and the City of Los Angeles Los Feliz area. Implementation of the proposed project would extend the existing Greenbelt Water Recycling distribution line south to serve the Roosevelt Golf Course. The proposed project would include the construction of a total of approximately 7,400 linear feet of pipeline, a recycled water pump station, and a recycled water storage tank with a capacity of 1 million gallons. Approximately 2,100 linear feet of a 12-inch pipeline would connect with an existing 8-inch recycled water pipeline located southwest of the intersection of Griffith Park Drive and Crystal Springs Drive. The pipeline would be installed within the existing roadway and connect north of the proposed recycled water pump station located on the east side of Fire Road. The pipeline would connect to the proposed pump station. The pipeline would continue for approximately 2,500 feet and would be installed using Horizontal Directional Drilling (HDD) construction method, to avoid impacts to trail users. Approximately 1,400 linear feet of 12-inch pipeline would be constructed from the HDD receiving pit to a new recycled water storage tank, located southeast of existing Tank 114. It is anticipated the golf course would require approximately 310 acre feet per year (AFY) of recycled water for irrigation.

Lead Agency Contact

Name Irene Paul
Agency Los Angeles Department of Water and Power
Phone 213 367 3509 **Fax**
email
Address 111 North Hope Street, Room 1044
City Los Angeles **State** CA **Zip** 90012

Project Location

County Los Angeles
City Los Angeles, City of
Region
Lat / Long 34° 7' 54.67" N / 118° 17' 1.47" W
Cross Streets Crystal Springs Drive, Fire Road, Griffith Park Drive, Vista Del Valle Drive
Parcel No. 5593002906, 5593002905
Township **Range** **Section** **Base**

Proximity to:

Highways Hwy 5, 134
Airports
Railways Metrolink / Amtrak
Waterways Los Angeles River
Schools Los Feliz Nursery School and John Marshall HS
Land Use Open Space (OS-1XL)

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Soil Erosion/Compaction/Grading; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife; Landuse; Cumulative Effects

Reviewing Agencies Resources Agency; Department of Fish and Wildlife, Region 5; Department of Parks and Recreation; Department of Water Resources; Resources, Recycling and Recovery; California Highway Patrol; Caltrans, District 7; CA Department of Public Health; Air Resources Board; Regional Water Quality Control Board, Region 4; Native American Heritage Commission; Public Utilities Commission

Date Received 10/23/2013 **Start of Review** 10/23/2013 **End of Review** 11/21/2013

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, REGIONAL PLANNING
IGR/CEQA BRANCH
100 MAIN STREET, MS # 16
LOS ANGELES, CA 90012-3606
PHONE: (213) 897-9140
FAX: (213) 897-1337

Clear
11/21/13
F

Flex your power!
Be energy efficient!

October 29, 2013

RECEIVED
OCT 31 2013
STATE CLEARING HOUSE

Ms. Irene Paul
Los Angeles Department of Water and Power
Environmental Planning and Assessment
11 North Hope Street, Room 1044
Los Angeles, CA 90012
SCH# 2013101066

RE: Griffith Park South Water, Recycling Project
IGR/CEQA No. 131048/NOI
Vic. LA-5, PM 23.965 to 38.568

Dear Ms. Paul:

Thank you for allowing the California Department of Transportation (Caltrans) to review the proposed Griffith Park South Water Recycling Project. The project is located within Griffith Park at 4730 Crystal Springs Drive in the City of Los Angeles.

The proposed project would expand the use of recycled water within Griffith Park and the Los Feliz area of the City of Los Angeles. When the project is fully implemented, it will extend the existing Greenbelt Water Recycling distribution line south to serve the Roosevelt Golf Course, which is a prime customer for recycled water. Construction of the project will include recycling water pipelines, a water pump station, a regulator valve, and a recycled water storage tank.

The Griffith Park South Water Recycling Project is approximately 2-3 miles from Interstate 5 (I-5). However, because the construction of the project is within Griffith Park, Caltrans does not expect project approval to result in a direct adverse impact to the existing State transportation facility.

Storm water run-off is a sensitive issue for Los Angeles and Ventura counties. Please be mindful that projects should be designed to discharge clean run-off water. Additionally, discharge of storm water run-off is not permitted onto State highway facilities.

Transportation of heavy construction equipment and/or materials, which requires the use of oversized-transport vehicles on State highways, will require a transportation permit from the Department. It is recommended that large size truck trips be limited to off-peak commute periods. In addition, a truck/traffic construction management plan may be needed for this project.

If you have any questions, you may reach Zeron Jefferson, project coordinator at (213) 897-0219 and please refer to IGR number 131048/ZJ.

Sincerely,

DIANNA WATSON
IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse

January 22, 2014

Mr. Paul Davis
City of Los Angeles
Department of Recreation and Parks
221 N. Figueroa Street, First Floor
Mail Stop No. 682
Los Angeles, CA 90012

RESPONSES TO COMMENTS ON THE
INTIAL STUDY/MITIGATED NEGATIVE DECLARATION
FOR THE GRIFFITH PARK SOUTH WATER RECYCLING PROJECT

Thank you for your comments (Letter No. 2) on the Initial Study/Mitigated Negative Declaration (IS/MND) for the Griffith Park South Water Recycling Project. Your comments and a response to your comments are provided as follows:

Comment Letter 2: City of Los Angeles Department of Recreation and Parks

2-A *In response to Comment 2-A, an editorial addition has been made to Section 1.2.1, Project Background, of this Final MND as follows:*

The Los Angeles Department of Water and Power (LADWP) proposes to expand its existing recycled water system within the Central Los Angeles area with the Griffith Park South Water Recycling Project ("GPSWRP" or "proposed project").

2-B *In response to Comment 2-B, an editorial addition has been made to Section 1.3, Project Location, of this Final MND as follows:*

Griffith Park is owned and operated by the City of Los Angeles Department of Recreation and Parks (~~L~~ARAP).

2-C *In response to Comment 2-C, an editorial addition has been made to Figure 2 of this Final MND as follows:*

111 N. Hope Street, Los Angeles, California 90012-2607 *Mailing address:* Box 51111, Los Angeles, CA 90051-5700
Telephone: (213) 367-4211 www.LADWP.com

Crystal Springs Dr. and Griffith Park Dr. have been added as reference landmarks. See revised Figure 2.

2-D *In response to Comment 2-D, an editorial addition has been made to Section 1.4, Project Description of this Final MND as follows:*

Proposed project facilities include:

- Proposed recycled water pump house station to be located on the east side of Fire Road. There would be one pump house, two operating pumps and one back-up pump. A minimum flow of 1,400 gallons per minute (gpm) would be required to fill the proposed recycled water tank in 12 hours. Each pump would have 150 horsepower.
- 2,100 linear feet of 12-inch pipeline, connecting the exiting Greenbelt pipeline to the proposed pump station east of Fire Road;
- 2,500 linear feet of 12-inch pipeline from the proposed horizontal directional drilling (HDD) launching pit to the HDD receiving pit near the proposed recycled water storage tank;
    - HDD is being used because trenching or excavating is not practical since it would result in significant biological and aesthetic impacts.
    - With use of HDD, most of the ground surface remains undisturbed, lessening the environmental impact of placing pipeline.
    - Trenchless technology protects natural resources such as sensitive habitats by drilling underneath the resources.
- 1,400 linear feet of 12-inch pipeline from the HDD receiving pit to the proposed recycled water storage tank;
- 700 linear feet of 12-inch pipeline from the proposed recycled water tank to the existing 1,200 linear feet 8-inch steel pipeline, connecting to the Roosevelt Golf Course;
- 700 linear feet of 12-inch pipeline from the proposed recycled water tank to the existing 1,544 foot Grade Potable System to be used as a potable back-up pipeline;
- Regulator Valve and Relief Valve System located adjacent to the pump station;
- Bolt-up steel recycled water pumping station located on the east side of Fire

Road within LADWP easement;

- Steel recycled water storage tank with a capacity of 1 million gallons to be located southeast of the existing Tank 114;
- Removal of the steel structure and wooden roof of the existing Tank 114 and;
- Appurtenant facilities for the pipelines.

2-E *In response to Comment 2-E, an editorial addition has been made to Section 1.4, Project Description of this Final MND as follows:*

The proposed project would begin at the existing Greenbelt Water Recycling pipeline located near the Park Center Picnic Area ~~Merry-Go-Round area along Crystal Spring Drive in~~ of Griffith Park~~; located in Park Center between the Los Angeles Zoo and the Los Feliz park entrance~~. The Park Center is located on Crystal Spring Drive between Griffith Park Drive and the Fire Road adjacent to the Ranger Station and Griffith Park Visitor Center.

2-F *In response to Comment 2-F, an editorial addition has been made to Section 1.4, Project Description of this Final MND as follows:*

Approximately 2,100 linear feet of a 12-inch pipeline would connect to an existing 8-inch recycled water pipeline located southwest of the intersection of Griffith Park Drive and Crystal Springs Drive. The pipeline would be installed along Crystal Springs Drive, commencing in the area in front of the park center. The pipe would head south bound on Crystal Springs Drive, continue east along the Fire Road, and terminate near the entrance to Fern Canyon Trail above the Merry-go-round where it will connect with the proposed Griffith Park South Pump Station ~~within the existing roadway and connect north of the proposed recycled water pump station located on the east side of Fire Road. The pipeline would connect to a new pump station~~. From the pump station, the pipeline would continue for approximately 2,500 feet and would be installed using the HDD construction method (~~tunneling~~ trenchless drilling method beneath the surface) to avoid aesthetic, biological, and recreational (on the public) impacts within the park. Approximately 1,400 linear feet of 12-inch pipeline would be constructed from the HDD receiving pit to a new recycled water storage tank, to be located southeast of existing Tank 114.

2-G and 2-M *In response to Comments 2-G and 2-M, the following changes have been made to Figure 3 of this Final MND as follows:*

Fire road has been shown on the figure for reference to the text. In addition, Griffith Park

land marks used in the text such as the Merry-Go-Round and Fern Canyon Nature Trail have been added to the Figure. See revised Figure 3.

2-H and 2-I *In response to Comment 2-H and 2-I, an editorial addition has been made to Section 1.4, Project Description of this Final MND as follows:*

A recycled water pump station would be located on the east side of Fire Road within a LADWP easement. It would be located on a 40-foot by 50-foot pad. The proposed pump station would consist of two operating pumps and one back-up pump. A minimum flow of 1,400 gallons per minute (gpm) would be required to fill the proposed recycled water tank in 12 hours. The base elevation of the pump station would be at approximately 525 feet. ~~to~~ The base elevation of the recycled water tank is approximately 1,110 feet, the tank fill elevation would be at ~~of~~ approximately 1,136 ~~1,140~~ feet and the top of the tank would at 1,140 feet; the head required to lift the water would be 615 feet. The pumps ~~station would be approximately 10 feet high and~~ would be enclosed within a one-story small housing structure to protect and secure the pump station. The pump station (e.g., small one-story housing structure) would be approximately 10 feet high.

2-J *In response to Comment 2-J, an editorial addition has been made to Section 1.4, Project Description of this Final MND as follows:*

The recycled water storage tank would replace the existing steel Tank 114 and would be approximately 30 feet high. The existing Tank 114 would be demolished, aboveground appurtenances removed, and the existing foundation abandoned.

2-K *The commenter questions the difference between the 1,140 feet and 1,110 feet in regards to the water tank.*

The first paragraph references the tank fill elevation and the second paragraph references the tank base elevation; a difference of approximately 30 feet, the height of the tank.

2-L *In response to Comment 2-L, an editorial change has been made to Section 1.4,* Project Description *of this Final MND as follows:*

The proposed recycled water storage tank would have a holding capacity of 1 million gallons that would provide additional capacity for future customers that have been identified in the Recycled Water Master Planning Documents. ~~The proposed recycled water storage tank would be partially buried 10 feet below the existing ground elevation and would have a base elevation of approximately 1,110 feet.~~ The proposed recycled

water storage tank would also have a potable water back-up ~~supplied from the existing 1,544 foot grade potable water system~~ supplied from the existing 1,544 service zone.

2-N *Comment 2-N: The commenter state that Section 1.4.1 Project Construction should include cumulative construction activities and states the start date for the project is unlikely since Board of Recreation and Park Commission needs to grant approval for easements and right-of-way.*

Project construction is included in the cumulative analysis for the project found in Section 2.18 Mandatory Findings response b), and includes the projects listed in the comment letter. In addition, Section 1.4.1 list construction activities specific to this project. It is acknowledged the construction start has slipped beyond that estimated in the MND.

2-O *In response to Comment 2-O, an editorial change has been made to Section 1.4.1, Project Construction of this Final MND as follows:*

The proposed cut and cover pipelines would be installed using trenching construction techniques, except for the segment extending from Fern Canyon Nature Trail~~head~~ to the top of the hill near Cedar Grove ~~proposed recycled water tank~~. This segment would be installed using HDD method, which is a trenchless method of installing underground pipeline and has minimal impact on the surrounding area. HDD is being proposed to avoid closing of the Fern Canyon Nature Trail and to prevent adverse visual impacts at Griffith Park.

2-P *In response to Comment 2-P, an editorial change has been made to Section 1.4.1, Project Construction of this Final MND as follows:*

The construction of the proposed project would commence on ~~January~~ March ~~02,~~ 2014 and is anticipated to be completed by March ~~October 09,~~ 2017~~5~~. The project would be constructed in ~~three~~ four separate phases, including the cut and cover pipeline phase, the HDD pipeline phase, and tank and pump station phase. The cut and cover pipeline phase will include two separate segments or phases; Phase 1 along Crystal Springs Drive and Fire Road and Phase 2 at the top of the hill on Vista Del Valle Drive from Cedar Grove to Vista View point where the proposed tank would be located. Each phase ~~component~~ is described separately below. Regional access to the construction site would be via I-5. Construction access to the various parts of the alignment would be via Crystal Springs Drive from the I-5, Western Heritage Way from SR-134, and Fire Road adjacent to Crystal Springs Drive in Griffith Park. The proposed project would prepare a traffic control plan that would be reviewed and approved by the Los Angeles Department

of Transportation.

2-Q *In response to Comment 2-Q, an editorial change has been made to Section 1.4.1, Project Construction of this Final MND as follows:*

Cut and Cover Pipelines

Construction activities would avoid disrupting activities at Griffith Park. The cut and cover pipeline phase will include two separate segments or phases; Phase 1 along Crystal Springs Drive and Fire Road, and Phase 2 at the top of the hill on Vista Del Valle Drive from Cedar Grove to Visa View point where the proposed tank would be built. The construction staging and parking area for Phase 1 of the cut and cover pipeline installation would be located near the Merry-Go-Round parking area, with access from Fire Road (Figure 3). Construction staging and parking area for Phase 2 of the cut and cover pipeline installation would be located at near the proposed tank and the exiting Tank 114, with access from Vista Del Valle Drive (Figure 3). Construction would occur five days a week, between the hours of 8:00 a.m. to 3:00 p.m.

2-R *The commenter states fix Phase I and 2 problem. The commenter further states the math implies only workers will generate truck trips and the potential amount of dirt being removed does not seem to be reflected. On page 18, there are 18 truck trips per day alone quoted for hauling.*

Refer to response to Comment 2-P and 2-Q for a response regarding phases 1 and 2.

2-S *The commenter states fix Phase I problem. The start date for the project is unlikely.*

Refer to response to Comment 2-P and 2-Q for a response regarding phases 1 and 2 and 2-N for response regarding project construction.

2-T *The commenter states to add "Phase 3" and consider rearranging with the HDD Pipeline "Phase 2" section.*

Clarifications have been made consistent with previous comments. The project would be constructed in four separate phases, the cut and cover pipeline phases (2), the HDD pipeline phase, and tank and pump station phase. Each component is described separately in the MND document. The cut and cover pipeline has two subphases, which are identified as Phase 1 and 2. However, no further change is considered necessary.

2-U *The commenter states the same confusion on the number of workers and truck trips*

without explanation of their relationship.

The project would be constructed in four separate phases, including the cut and cover pipeline phases (2), the HDD pipeline phase, and tank and pump station phase. Each component is described separately and provides separate construction details since they will be constructed at different times. However, the analysis assumes the worst case scenario in terms of the maximum amount of construction from each phase on the project site. Approximately 36-39 haul truck round-trips would occur per day during Phase 1 and 2 pipeline installations and approximately 21 roundtrips per day generated by construction workers. Approximately 15 haul truck round-trips would occur per day during HDD pipeline installation and approximately 7 roundtrip per day generated by construction workers. Approximately 103 haul truck round-trips would occur per day during tank replacement and pump station construction and approximately 145 roundtrip per day generated by construction workers.

2-V *Response to Comment 2-V: The commenter states clarify if there are overlapping staging and construction areas.*

Refer to Figure 3 which identifies construction staging areas. Each phase uses the same staging and construction areas, but over different time periods.

2-W *The commenter states the same confusion on the number of workers and truck trips without explanation of their relationship.*

Refer to response to Comment 2-R, 2-T, and 2-U for response regarding project construction.

2-X *In response to Comment 2-X, an editorial change has been made to Section 1.4.2, Project Operation of this Final MND as follows:*

1.4.2 Project Operation

Operation and maintenance activities for the proposed project would be minimal and limited to intermittent pipeline, pump station and recycled water storage tank maintenance, generally not to exceed once per month. The proposed project would require minimal maintenance and monitoring related to periodic inspection for possible leaks and repairs. Iinfrequent routine maintenance activities would occur on average once per quarter.

2-Y *In response to Comment 2-Y, an editorial change has been made to Section 1.5, Alternatives Considered but Withdrawn of this Final MND as follows:*

LADWP has been working collaboratively with ~~LA~~RAP to find and implement the best possible project with the least disruptive impacts to Griffith Park environment and operations.

2-Z *In response to Comment 2-Z, an editorial change has been made to Section 1.5, Alternatives Considered but Withdrawn of this Final MND as follows:*

Retrofitting existing Tank ~~1~~114, rather than complete replacement, was considered. However, structural and corrosion testing led to the conclusion that this alternative was not suitable, as extensive retrofitting was required. An alternative new tank location was also considered at the footprint of existing Tank 114. However, due to the large size of the tank and the proximity of several oak trees, it was decided that the proposed site was more suitable, since removal of oaks would ~~not~~ be ~~required~~ avoided.

2-AA *In response to Comment 2-AA, an editorial change has been made to Section 1.5, Alternatives Considered but Withdrawn of this Final MND as follows:*

Four alternate pipeline alignments were considered. Two alternative pipeline routes were considered for the segment of pipeline between the Recycled Water Greenbelt line and the foot of Fern Canyon Nature Trailhead where a pump station was proposed. These were not chosen as the preferred alternative due to construction difficulties (impacts to park operations) and increased costs.

2-AB *Response to Comment 2-AB: the commenter states the alternative pump station does not make sense because the location of the proposed pump station is location in the same general area and has not differentiated from the same Griffith Park landmark.*

The alternatives to this project are constrained to the same general area given the project's objective to provide the recycled water to the golf course using the existing greenbelt recycled water pipeline. In addition, alternatives for the pump station did include use of the existing restroom building in the park area and the concession stand. However, these options were not considered viable due to future uses associated with those buildings.

2-AC *In response to Comment 2-AC, an editorial change has been made to Section 1.6, Discretionary Approvals Required for the Project of this Final MND as follows:*

Table 1 presents a preliminary list of the agencies and entities with discretionary approval over the GPSWRP.

TABLE 1
DISCRETIONARY PERMITS POTENTIALLY REQUIRED

Agency	Permits and Authorizations Required	Activities Subject to Regulations
California State Division of Occupational Safety and Health	• Permit for trench construction	• Any excavation activity five feet or deeper
State Water Resources Control Board, Division of Water Quality	• State Wide Construction General Permit	• Construction on a site of more than one acre
County of Los Angeles Department of Public Works	• Discharge Permit	• Construction dewatering and hydrostatic test water discharge into the storm system and channels
City of Los Angeles Department of Public Works, Bureau of Sanitation	• Industrial Waste Permit	• Pump or chlorine discharge water
City of Los Angeles Department of Recreation and Parks, Board of Recreation and Parks Commission	• Memorandum of Understanding •	• Between LADWP and ~~LA~~RAP concerning ownership of facilities; and easements and right-of-entry permit for facilities to be installed
California Department of Public Health	• Submittal of design drawings	• Submittal of design drawings
County of Los Angeles Department of Public Health	• Submittal of on-site drawings	• Coordinate with LACDPH to conduct cross-connection inspection during construction and testing prior to going into service
Los Angeles Department of Transportation	• Traffic Control Plan	• Permit oversized vehicles • Construction Traffic

2-AD *Response to Comment 2-AD, the commenter states to explain how the broad vistas of Griffith Park will not be significantly affected by the storage tank.*

Griffith Park Tank No. 114 is a ground-level water storage tank built in 1943. The tank is constructed of riveted steel plates with a timber roof cover supported by the tank wall and a center post. The tank sits on a concrete ring foundation. The tank measures 30 feet in height and 35 feet in diameter, with estimated wall thickness is 7/8 inches, and has a capacity of 215,898 gallons. According to LADWP, the tank was taken out of

service as a result of leakage in 2000. The tank is severely corroded and structural damage has occurred to the floor and wall as a result of pitting corrosion. The lower reaches of the tank wall are covered in graffiti. Construction activities and installation of the proposed recycled water storage tank would alter the visual character of the proposed project site, as identified in Section 2.1.c). However, the proposed recycled water storage tank would be the same height, painted and finished to complement the existing natural area and would replace the older existing tank structure that is currently visible an of similar height. The new tank may appear wider but would not be taller. This change in viewshed is not considered significant.

2-AE *Response to Comment 2-AE: the commenter questions the workers listed.*

Refer to response to Comment 2-P, 2-Q, 2-R, 2-T, 2-U for a response regarding phases and construction workers listed.

2-AF *Response to Comment 2-AF: the commenter questions why Table 3 only shows pipeline trenching and questions about HDD hauling and pump house construction? The commenter states Appendix A data emissions sheets were not included.*

Table 3 presents the worst case daily emissions which would occur during pipeline installation in 2014 due to overlapping pipeline installation and paving activities. As shown in Table 3, projected emissions from vehicles and construction equipment and truck and worker trips would be below significance thresholds and would not result in a significant impact. HDD activities and pump station and tank replacement activities occur over different time periods and while there is more truck traffic trips associated with those phases, the paving activities result in the highest emission levels. However, these activities would be less than the worst case scenario identified under pipeline installation as a result of the pavement activities.

The data emission sheets are provided in Appendix C of this Final MND.

2-AG and 2-AH *In response to Comment 2-AG and 2-AH, an editorial change has been made to Section 2.3,* Air Quality, *letter c) of this Final MND as follows:*

c) **Less than Significant Impact.** Proposed project construction would result in both dust and exhaust emissions from trenching activities during the construction and installation of the water pipeline and ancillary facilities. SCAQMD Rule 403 requires that fugitive dust emission control measures be implemented to adequately prevent visible dust from leaving the property and to

minimize $\underline{PM_{2.5}}$ and PM_{10} emissions.

The commenter further states that no cumulatively considerable net increase of any criteria pollutants were determined.

The approach for assessing cumulative impacts is based on the forecasts of attainment and ambient air quality standards in accordance with requirements of the federal and state clean air acts. Thus, emissions associated with the proposed project would be cumulatively significant if, with mitigation, there remains an increase in a pollutant for which the pollutant is classified as a nonattainment area (i.e., ozone and PM_{10}).

As discussed in on page 20 of the MND, the proposed project would not exceed the maximum daily emissions of criteria pollutants (Table 3), would comply with all applicable rules and regulation, and implement recommended mitigation measures, the proposed project would not result in a cumulative considerable net increase of any criteria pollutant.

2-AI *In response to Comment 2-AH, an editorial change has been made to Section 2.4, Biological Resources of the Draft MND as follows:*

Coast Horned Lizard, Coastal Whiptail, and Silvery Legless Lizard

According to a biological inventory report prepared for the Trust for Public Land (Cooper, 2009), the coast horned lizard has recently (2009) been confirmed as a rare resident on high ridges of Griffith Park and Cahuenga Peak, where it formerly (until the 1970s) occurred throughout the park's lower slopes and canyons. The coast horned lizard has become extremely rare in the greater Los Angeles metropolitan region, having been extirpated from the entire coastal plain and most of the San Fernando and San Gabriel Valleys. A combination of broad scale habitat modification and the displacement of native harvester ants by non-native Argentine ants have been implicated in declines within Los Angeles County. The coastal whiptail has been found in the upper portions of Griffith Park in open, sparsely vegetated areas. Suitable habitat for the silvery legless lizard is present within the oak woodland and chaparral communities, particularly where there is a layer of leaf litter present. ~~Both~~ All reptile species have the potential to occupy portions of the project site.

2-AJ *Response to Comment 2-AJ: the commenter questions the significance of the last statement under special-status species: "*The precipitation levels for the 2012-2013 rainy season were below average in Southern California and all the plants with a moderate or greater potential to occur would be either drought deciduous or would have bloomed

earlier in the season under these drier than average environmental conditions."

The significance of the of the last statement is to clarify that while the 2012-2013 rainy season was below average in terms of rainfall received, evidence of special-status plants would have been seen during the site reconnaissance to determine presence. This is because drought deciduous refers to plants that drop their leaves during the dry season or periods of dryness; leaving behind evidence of its presence or because it would have already bloomed.

2-AK *Response to Comment 2-AK: the commenter recommends deleting the first and second sentences due to redundancy and move the remainder of the paragraph up to previous paragraph.*

This commented is noted for the record. This recommendation does not change the context or significance of the analysis. Therefore, this change was not implemented.

2-AL *In response to Comment 2-AL, an editorial change has been made to Section 2.4, Biological Resources, of the Draft MND as follows:*

Reptiles
The Project site contains suitable scrub and woodland habitat for the coast horned lizard, coastal whiptail, and the silvery legless lizard. However, no impacts would likely occur to these species during Project activities because the majority of habitat impact is to disturbed and/or developed areas where they are less like to be present. In addition, during mobilization of construction equipment, reptile species within the area would likely disperse due to increased noise level. Direct impacts to special status reptile species could produce direct impacts to reptile species due to project implementation. These impacts would be reduced to less than significant levels with the implementation of M~~m~~itigation M~~m~~easure BIO-3, which requires preconstruction clearance surveys.

2-AM *In response to Comment 2-AM, an editorial change has been made to Section 2.4, Biological Resources, of the Draft MND as follows:*

Bats
Although the Project site contains suitable roosting habitat for hoary and silver-haired bats, it is unlikely that these species would be impacted by Project implementation because the Project would limit any potential tree trimming activities during the bat breeding season from March to August. Additionally, potential roosting sites may occur within the trees found within the Project site; however, no direct impact to oak, walnut, and Australian silk oak trees are anticipated to be removed by the proposed project.

Potential roosting habitat for the western mastiff bat can be found within existing buildings and crags adjacent to the Project site in Griffith Park. Potential roost sites would not be impacted by Project activities because no existing buildings and crags would be impacted by the project. The project includes removal of the existing water tank and replacement with a larger recycled water tank in the same general area. Therefore, if the existing water tank was used as a potential roosting site, the tank would be replaced for a similar use at project completion. Direct impacts to the tree roosting species (hoary, silver-haired bat) will be minimized by conducting any pruning activities outside of the breeding season for bats as specified by CDFW. Implementation of mitigation would reduce impacts to less than significant levels. With implementation of ~~m~~Mitigation ~~m~~Measures~~s~~ BIO-3, these potential roosting sites will be identified prior to project implementation and implementation of mitigation would reduce impacts to less than significant levels.

The commenter further states that tree trimming is not mentioned elsewhere.

Tree trimming is not anticipated during construction activities. Tree trimming impacts are identified only as a potential impact and lists the mitigation required to reduce the impact. However, tree trimming activities are not included as part of the project.

2-AN *Response to Comment 2-AN: the commenter states that even no trees will be removed, discuss whether any tree protection zones will be affected during project construction.*

Refer to Mitigation Measure BIO-45. BIO-45 requires that trees shall be considered during Project construction activities including the creation of staging areas, as well as trenching, staging areas and demolition. A qualified arborist shall be present to identify and demarcate protected trees (and its protected zones [1 ½ feet times the diameter of the trunk at breast height]) within the entire Project site that have the potential to be impacted by construction activities and to assist in guiding construction activities to avoid or minimize impacts to protected trees. If any impacts to city protected trees are unavoidable, then the qualified arborist shall assist in processing a permit application with the City of Los Angeles Urban Forestry Division. In such circumstances, a permit shall be obtained prior to performing any project activities that may impact a protected tree.

2-AO *In response to Comment 2-AO, an editorial change has been made to Section 2.4,* Biological Resources*, of the Draft MND as follows:*

However depending on the timing of construction, eggs and nestlings of bird species with small, well-hidden nests could be subject to loss, which would result in a violation of

the Migratory Bird Treaty Act (MTBA) and Fish and Game Code.

2-AP and 2-AQ *In response to Comment 2-AP and 2-AQ, an editorial change has been made to Section 2.4, Biological Resources, the Draft MND as follows:*

BIO-45: Protected Trees. The presence of protected trees shall be considered during Project construction activities including the creation of staging areas, as well as trenching, staging areas and demolition. The following mitigation measures are recommended to avoid impacts to protected trees with the project area:

- A qualified arborist shall be present to identify and demarcate protected trees (and its protected zones [~~i.e., driplines~~ 1 ½ feet times the diameter of the trunk at breast height]) within the entire Project site that have the potential to be impacted by construction activities and to assist in guiding construction activities to avoid or minimize impacts to protected trees.
- Situate all project elements including trenching paths, on existing access routes or within the clearing outside of the ~~drip lines~~ protection zones of protected trees ~~to the greatest extent feasible~~ to prevent damage to protected trees.
- If any impacts to city protected trees are unavoidable, then the qualified arborist shall assist in processing a permit application with the City of Los Angeles Urban Forestry Division. In such circumstances, a permit shall be obtained prior to performing any project activities that may impact a protected tree.

2-AR *In response to Comment 2-AR, an editorial change has been made to Section 2.4, Biological Resources, of the Draft MND as follows:*

BIO-56: Nesting Birds. A number of resident and seasonal bird species have the potential to nest on the Project site in trees and adjacent vegetation. The following mitigation measures are ~~recommended~~ required to reduce potential impacts to nesting birds during construction activities:

- If construction is scheduled to occur during the non-nesting season (September through January 31), no preconstruction surveys or additional measures are recommended. If construction is scheduled to occur during the breeding season (February 1–August 31), ~~it is recommended that~~ a qualified wildlife biologist shall conduct preconstruction surveys of all potential nesting habitats within 500 feet of construction activities. At least one surveys should

be conducted no more than 3 days prior to construction activities.

- If active nests are found, no-disturbance buffers shall be implemented around each nest based on the species and location of the nest as determined by a qualified biologist. A general buffer distance generally includes 500-feet around any confirmed active raptor nest and a 250-foot buffer around nests of passerine bird species protected in accordance with the MBTA and/or Fish and Game Code. The buffers should be implemented until it is determined by a qualified wildlife biologist that young have fledged and the nest is determined to be inactive.

2-AS *In response to Comment 2-AS, an editorial change has been made to Section 2.4, Biological Resources, of the Draft MND as follows:*

a) **No Impact.** The proposed project is not located within an adopted Habitat Conservation Plan, Natural Community Conservation Plan (HCP/NCCP) or other approved local, regional, or state HCPs. However, the project area is located within the Griffith Park Significant Ecological Area (SEA) as defined by the County of Los Angeles. The SEA is described as an extensive, relatively undisturbed island of natural vegetation in an urbanized, metropolitan area. The SEA supports the coastal sage scrub, chaparral, riparian, and southern oak woodland plant communities typical for the interior mountain ranges of Southern California. The proposed project is also located within the Griffith Park Wildlife Management Plan area as defined by the Los Angeles Department of Recreation and Parks. <u>While this plan is not an official designation, the</u> ~~This~~ plan establishes a baseline in terms of known threats to wildlife and includes Best Management Practices (BMPs) that help assist the Los Angeles Department of Recreation and Parks staff in making land management decisions in Griffith Park and the surrounding open space areas. The proposed project would follow the recommended BMPs whenever applicable. In addition, the project would not alter land use and would not conflict with the provisions of the Griffith Park Wildlife Management Plan, and no impacts would occur.

2-AT *The commenter states that the tank to be removed was not discussed in the cultural resources section.*

Griffith Park Tank No. 114 is a ground-level water storage tank built in the 1943. The tank is constructed of riveted steel plates with a timber roof cover supported by the tank wall and a center post. The tank sits on a concrete ring foundation. The tank measures 30 feet in height and 35 feet in diameter, with estimated wall thickness is 7/8 inches, and has a capacity of 215,898 gallons. According to LADWP, the tank was taken out of

service as a result of leakage in 2000. The tank is severely corroded and structural damage has occurred to the floor and wall as a result of pitting corrosion. The lower reaches of the tank wall are covered in graffiti. Construction activities and installation of the proposed recycled water storage tank would alter the visual character of the proposed project site; refer to the Cultural Resources Report prepared for the project, which identified the potential impacts to Tank 114. Tank No. 114 does not appear to be individually eligible for listing in the National Register or California Register or eligible as a contributor to Griffith Park, and therefore is not considered a historical resource under CEQA. Tank No. 114 does not appear to qualify as a Los Angeles Historic-Cultural Monument.

2-AU *In response to Comment 2-AU, an editorial change has been made to Section 2.5,* Cultural Resources*, of the Draft MND as follows:*

CUL-3: Preparation of Paleontological Resource Monitoring and Mitigation Plan and Pre-Construction Training. Prior to start of earthmoving activities associated with sensitive fossil-bearing formations located in the southern portion of the project site (includes portions of the proposed cut and cover pipeline, proposed potable pipeline, and proposed and existing water tanks), a qualified paleontologist shall prepare a Paleontological Resource Monitoring and Mitigation Plan (PRMMP) based on and consistent with information provided in *Paleontological Investigation Report of the Los Angeles Department of Water and Power Griffith Park South Water Recycling Project, Los Angeles, California* (Aron and Kelly, 2013). The PRMMP shall outline: sensitive areas within the limits of the project that require paleontological resources monitoring and paleontological monitoring protocols; inadvertent discovery procedures; recovery and salvage measures for potentially significant fossil and microfossil discoveries; laboratory methods; and reporting and curation requirements.

The qualified paleontologist shall also conduct pre-construction worker environmental awareness training prior to construction activities associated with sensitive fossil-bearing formations located in the southern portion of the project site (includes portions of the proposed cut and cover pipeline, proposed potable pipeline, and proposed and existing water tanks). This training shall include information on what to do in case an unanticipated discovery is made by a worker. All construction personnel shall be informed of the possibility of encountering fossils, and instructed to immediately inform the construction foreman if any bones or other potential fossils are unexpectedly unearthed in an area where paleontological monitoring is not required. LADWP shall ensure that construction personnel are made available for and attend the training and shall

retain documentation demonstrating attendance. This training may be conducted in coordination with training required under Mitigation Measure CUL-1.

2-AV *In response to Comment 2-AV, an editorial change has been made to Section 2.5,* Cultural Resources, *of the Draft MND as follows:*

CUL-6: If human remains are encountered, LADWP shall halt work in the vicinity (within 100 feet) of the find and contact the Los Angeles County Coroner in accordance with Public Resources Code (PRC) Section 5097.98 and Health and Safety Code Section 7050.5. If the County Coroner determines that the remains are Native American, the NAHC shall be notified, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC Section 5097.98 (as amended by AB 2641). The NAHC shall designate a Most Likely Descendant (MLD) for the remains per PRC Section 5097.98. Until RAP as the landowner has conferred with the MLD regarding their recommendations, as prescribed in PRC Section 5097.98, taking into account the possibility of multiple human remains, LADWP shall ensure that the immediate vicinity where the Native American human remains are located is not damaged or disturbed by further development activity, according to generally accepted cultural or archaeological standards or practices~~, until the landowner has discussed and conferred with the MLD regarding their recommendations, as prescribed in PRC Section 5097.98, taking into account the possibility of multiple human remains~~.

2-AW *In response to Comment 2-AW, an editorial change has been made to Section 2.6, Geology and Soils, of the Draft MND as follows:*

Less than Significant Impact. ~~The project area is located in the eastern Santa Monica Mountains, which is an east-west trending range. Geological formations in the proposed project area are of Cenozoic age, chiefly Neogene and Quaternary.~~ The proposed project is not located within an Alquist-Priolo Earthquake Fault Zone. The easternmost part of the Santa Monica Mountains ~~is~~ includes~~d within~~ Griffith Park, which straddles the southern boundary of the Burbank Quadrangle. The Verdugo Mountains extend across the northeastern third of the Burbank Quadrangle.The nearest fault line is the Hollywood Fault, located approximately 0.6 miles south of the project area. The Hollywood Fault is considered a westward extension of the Raymond fault and is located relatively parallel to the Santa Monica fault. The fault line extends in an east-northeast direction for approximately nine miles through Beverly Hills, West Hollywood, and Hollywood to the

Los Angeles River and I-5 Freeway. The most recent surface rupture along this fault was during the Holocene period (SCEDC, 2013).The proposed project is not located in a City of Los Angeles designated Fault Rupture Study Zone.

2-AX *In response to Comment 2-AX, an editorial change has been made to Section 2.6, Geology and Soils, of the Draft MND as follows:*

The proposed project facilities would be designed and constructed in compliance with the City of Los Angeles Bureau of Engineering Standard Project Specifications. Compliance with applicable regulations would ensure safe and ~~efficient~~ effective project implementation within areas subject to seismic movement. Per standard practice, site-specific geotechnical and geological investigations that focus on these potential hazards are performed as part of project design studies. No habitable structures would be developed, and implementation of the proposed project would not result in an increase in population ~~on the project site~~ subject to seismic standards. Construction activities would be short-term and operational activities would be limited to infrequent maintenance activities. The project designs would be subject to Special Publication 117, "Guidelines for Evaluating and Mitigating Seismic Hazards in California." Conformance with ~~this publication~~ these guidelines in addition to the California Building Code (CBC) requirements would provide for protection from fault rupture. Therefore, the proposed project would not substantially expose people or structures to adverse effects related to ground rupture, and impacts would be less than significant.

2-AY *In response to Comment 2-AY, an editorial change has been made to Section 2.6, Geology and Soils, of the Draft MND as follows:*

The pipelines and recycled water tank would be designed to accommodate site-specific ground motions. Standard geotechnical and structural design criteria required in the CBC would reduce excessive earthquake ~~response~~ effects and minimize potential damage or collapse of the pipelines and recycled water tank. CBC requirements for the pipelines may include flexible pipe joints, shortened pipe lengths, automatic isolation valves, installation of the pipelines inside a protective casing, and shallow or above-ground installation of the pipelines. Any and all of these requirements will be used in the final design of the pipeline. Compliance with the CBC would minimize the potential for damage from strong ground shaking. Therefore, with the incorporation of Mitigation Measure **GEO-1**, the proposed project would result in a less-than-significant impact with mitigation related to groundshaking.

2-AZ *In response to Comment 2-AZ, an editorial change has been made to Section 2.6,*

Geology and Soils, of the Draft MND as follows:

GEO-1: Prior to the approval of construction plans for the project, including pipelines, pump station, and storage tank, LADWP shall complete a design-level geotechnical investigation. The geotechnical evaluation shall identify soil properties needed for the development of site-specific design criteria. ~~Recommendations made as a r~~results of these investigations will require specific design elements to protect new structures from seismic hazards ~~shall become incorporated into the proposed project final design~~.

2-BA *In response to Comment 2-BA, an editorial change has been made to Section 2.6, Geology and Soils, of the Draft MND as follows:*

a.iii) **Less than Significant Impact.** Liquefaction occurs in saturated and loose soils in areas where the groundwater table is 50 feet or less below ground surface (bgs). During an earthquake, a sudden increase in high core water pressure can cause soils to lose strength and behave as a liquid. As shown on Figure 5, the proposed recycled water storage tank and pump station, and HDD tunneling would not be located within an area identified with the potential for liquefaction ~~area,~~. H~~h~~owever, segments of the proposed pipeline up to the pump station. ~~are located in areas designated as having liquefaction potential.~~ The pump station would also be ~~adjacent to this~~ potentially at risk. All infrastructure improvements in the State of California must comply with the seismic design parameters contained in the CBC seismic requirements. Compliance with the CBC standards in the design and construction of the proposed project would reduce potential damage to the new infrastructure from liquefaction. Therefore, the proposed project would not expose people or structures to potential substantial adverse effects related to liquefaction and impacts would be less than significant.

2-BB *In response to Comment 2-BB, an editorial change has been made to Section 2.6, Geology and Soils, of the Draft MND as follows:*

a.iv) **Less than Significant Impact with Mitigation.** Landslides are characterized as deep-seated ground failures, in which a large section of a slope detaches and slides downhill. As shown on Figure 5, the proposed HDD pipeline is partially located within an area that has earthquake induced landslide potential. The proposed recycled water storage tank and pump station and HDD tunneling would not be located directly in landslide potential areas. Construction of the proposed pipeline would be through HDD method underground. As previously stated, the Hollywood Fault is approximately 0.6 miles south of the project site

and the proposed project is located within a seismically active area of California. ~~Nonetheless~~ So, all infrastructure improvements ~~in the State of California~~ must comply with the seismic design parameters contained in the CBC seismic requirements. Compliance with the CBC standards in the design and construction of the proposed project would reduce potential damage to the new infrastructure from landslides. ~~Construction of the pipeline would be located underground and would be constructed and designed in compliance with applicable building codes and standards of the CBC and the Bureau of Engineering.~~

The HDD pipeline alignment would be designed to accommodate landslides. Standard geotechnical and structural design criteria required in the CBC would reduce excessive landslide ~~response~~ effects and minimize potential damage or collapse of the pipeline. Compliance with the CBC would minimize the potential for damage from landslides. With the incorporation of Mitigation Measure **GEO-1**, the proposed project would result in a less-than-significant impact with mitigation related to landslides.

2-BC *In response to Comment 2-BC, an editorial change has been made to Section 2.6, Geology and Soils, of the Draft MND as follows:*

b) **Less than Significant Impact.** The proposed project would include trenching activities within the 30-foot construction corridor primarily within the existing roadway right-of-ways. The trench would be approximately 2 feet below surface and 3 feet wide. Approximately 1,520 total cubic yards of dirt and topsoil would be excavated and reused as backfill after the pipeline installation. The proposed project would not contribute to soil erosion or loss of topsoil. Construction of the proposed project would require ~~compliance with the Construction General Permit and~~ the preparation of a Stormwater Pollution Prevention Plan (SWPPP) ~~for the construction phase of the proposed project~~ in accordance with the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges associated with Construction and Land Disturbance Activities (Construction General Permit). The SWPPP shall list all practicable and applicable Best Management Practices (BMPs) in order to reduce soil erosion during construction. Compliance with the NPDES Construction General Permit will ensure that ~~no substantial adverse~~ construction related erosion impacts ~~would occur, and impacts~~ would be less than significant. As described further in Section 3.9 Hydrology and Water Quality, the proposed project would implement BMPs to minimize the occurrence of soil erosion or loss of topsoil. Therefore,

impacts related to soil erosion or the loss of topsoil would be less than significant.

2-BD *In response to Comment 2-BD, an editorial change has been made to Section 2.6, Geology and Soils, of the Draft MND as follows:*

c) **Less than Significant Impact.** Refer to discussions in responses ~~3~~2.6(a)(i) through ~~3~~2.6(a)(iv). The project site is located within an area that is subject to landslides or liquefaction. Thus, impacts from landslides, liquefaction and lateral spreading may occur. Subsidence occurs when a void is located or created underneath the ground surface causing the surface to collapse. Subsidence can be created through tunnels, wells, covered quarries, and caves beneath a surface. In addition, subsidence usually occurs as a result of excessive groundwater pumping or oil extraction. The proposed project would not expose people to seismic-related ground failure because the on-site facilities would be unmanned, and no habitable structures would be built as part of the proposed project. Furthermore, on-site activities would be limited to infrequent maintenance activities. As previously stated, all infrastructure improvements in the State of California must comply with the seismic design parameters contained in the CBC seismic requirements. Compliance with the CBC standards in the design and construction of the proposed project would reduce potential damage to the new infrastructure from on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. As a result, the proposed project would not expose people or structures to potential substantial adverse effects related to unstable soils, and impacts would be less than significant.

In addition, the commenter states to explain how HDD method that creates a tunnel prevents subsidence.

2-BE *In response to Comment 2-BE, an editorial change has been made to Section 2.7, Greenhouse Gases, of the Draft MND as follows:*

a) **Less than Significant Impact.** Greenhouse gas (GHG) impacts are considered exclusively cumulative impacts. Greenhouse gasses include but are not limited to CO_2, CO, NO_X, hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF6). Construction-related GHG emissions ~~of GHG~~ would be temporary and would not be an on-going burden to the states GHG inventory. Construction related emissions would total 103 metric tons of carbon dioxide equivalents (CO2e) in 2014 and 113 metric tons in 2015. These emissions are less than the 10,000 metric ton per day of CO2e threshold established by SCAQMD for industrial projects, were it to apply to construction-related

emissions. There would be not ~~be any~~ sources of operational emissions associated with the proposed pipelines, tank and pump station. Operation of the pump station would require intermittent electrical demand which would be associated with indirect GHG emissions if electricity used were from non-renewable resources. These electricity-related operational GHG emissions would be negligible. Therefore, impacts regarding the generation of GHG emissions would be less than significant.

2-BF *In response to Comment 2-BF, an editorial change has been made to Section 2.7, Greenhouse Gases, of the Draft MND as follows:*

b) **No Impact.** The proposed project would not markedly increase emissions of GHGs and is not anticipated to conflict with applicable GHG plans, policies, or regulations. State of California Assembly Bill 32 (AB 32) requires that the California Air Resource Board (CARB), in coordination with state agencies, adopt regulations to require the reporting and verification of statewide GHG emissions and monitor and enforce compliance with the program. State of California Senate Bill 375 (SB 375) requires the reduction of GHG emissions by discouraging sprawl development and dependence on car travel. SB 375 assists in the implementation of AB 32 by integrating land use, regional transportation, and housing plannings. ~~The proposed project involves installation of a water pipeline installation that would require minimal and infrequent operational activities. In addition, t~~The proposed project would not generate GHG emissions that would significantly impact the environment, ~~.~~ and therefore, ~~The proposed project~~ would not conflict with AB 32 or SB 375 ~~and no impacts would occur~~.

2-BG *In response to Comment 2-BG, an editorial change has been made to Section 2.8, Hazards and Hazardous Materials, of the Draft MND as follows:*

h) **Less than Significant Impact.** The project area is located in a Very High Hazard Severity Zone, as identified by the City of Los Angeles Bureau of Engineering. The Griffith Park Fire of 2007 burned over 800 acres, including portions of the project site. However, the proposed project would not expose people or structures to significant injury or death as construction activities would be short-term and operational activities would be limited and infrequent. No habitable structures would be developed for the proposed project. As described in 2.8(b), proper handling, storage, and disposal of fuels and other flammable materials in accordance with local safety requirements would minimize the risk of fires. Therefore, the proposed project is not anticipated to impact people or structures

from wildland fires, and impacts would be less than significant.

2-BH *In response to Comment 2-BH, an editorial change has been made to Section 2.9, Hydrology and Water Quality, of the Draft MND as follows:*

c) **Less than Significant Impact.** The proposed project would not violate any water quality standards or waste discharge requirements as the proposed project would consist of a new pipeline to convey recycled water, a pump station, and a new recycled water storage tank. Construction-related soil activities would be limited to removal of asphalt/pavement, trenching, stockpiling, and backfilling the trench after installation of the pipe with the excavated soils. The proposed project would prepare a SWPPP in accordance with the NPDES Construction General Permit. The SWPPP is required to list and implement all practicable BMPs in order to protect water quality during construction. Compliance with the NPDES standards through preparation and implementation of a SWPPP would ensure that no substantial adverse impacts would occur. Therefore, impacts would be less than significant.

2-BI and 2-BJ *In response to Comment 2-BI and 2-BJ, an editorial change has been made to Section 2.9, Hydrology and Water Quality, of the Draft MND as follows:*

c) **Less than Significant Impact.** Construction and operation of the proposed project facilities would be located within Griffith Park and would not alter the existing drainage pattern of the project site. The proposed pipeline would be located underground and would not change the existing drainage pattern throughout its alignment. The recycled water storage tank and pump station would be located on cement pads ~~and adjacent to existing structures~~, which may slightly alter the drainage pattern of that area. However, ~~there are no streams or rivers within the project area and~~ the proposed project is not anticipated to increase runoff, and would adhere to all NPDES regulations and implement BMPs to ensure that construction does not result in erosion impacts. Therefore, the proposed project would not substantially alter the existing drainage pattern of the site or area and substantial erosion o~~f~~r siltation would not occur. Impacts would be less than significant.

2-BK *In response to Comment 2-BK, an editorial change has been made to Section 2.9, Hydrology and Water Quality, of the Draft MND as follows:*

e) **Less than Significant Impact.** The proposed project would slightly increase impervious surfaces within the project vicinity, by developing concrete ~~cement~~

pads to support the recycled water tank and pump station. However, the increase of the amount of impervious surfaces would not generate a significant amount of additional runoff, and would not change the course of stormwater runoff. Additionally, construction-related activities involving earth moving during installation of the pipeline would be limited to trenching and backfilling the pipeline alignment. The proposed project would adhere to all regulations and implement BMPs pursuant to the project specific SWPPP ~~which~~ that would ensure that construction activities do not result in polluted runoff. As a result, the proposed project would not create or ~~contribute to polluted~~ increase the amount of runoff ~~water or runoff~~ that would exceed the existing ~~drainage~~ capacity of the ~~project area~~ stormwater drainage systems, and impacts would be less than significant.

2-BL *In response to Comment 2-BL, an editorial change has been made to Section 2.9, Hydrology and Water Quality, of the Draft MND as follows:*

g) **No Impact.** The proposed project is not located within a 100-year flood hazard area as mapped on the Federal Emergency Management Agency (FEMA) 100-year Flood Insurance Rate Map. In addition, the proposed project does not include housing or other habitable structures that would expose people property to flood hazards. Therefore, no impact would occur.

2-BM *In response to Comment 2-BM, an editorial change has been made to Section 2.9, Hydrology and Water Quality, of the Draft MND as follows:*

a) **Less than Significant Impact.** The Mulholland Dam and Hollywood Reservoir, owned and operated by LADWP, are located in the Hollywood Hills approximately three miles west of the project site. The Mulholland Dam was built in 1924 and has a capacity of 4,036 acre feet, creating the Hollywood Reservoir. The dam has a height of approximately 195 feet and a crest elevation of 756 feet. The depth of the reservoir is approximately 183 feet. The proposed project is not within the dam inundation area and would not result in construction of any structures that may be affected in the event of catastrophic dam failure. ~~In the event of catastrophic dam failure, proposed project facilities could be reinstalled and constructed.~~ In addition, no levees or dams are located on the project site and no off-site levees or dams would be modified as part of the proposed project. The proposed tank would be maintained on a regular routine to ensure the tank is repaired as necessary reducing the potential for tank failure. As a result, the proposed project would not expose people or structures to a significant risk of

loss as a result of the failure of a levee or dam.

2-BN *In response to Comment 2-BN, an editorial change has been made to Section 2.9, Hydrology and Water Quality, of the Draft MND as follows:*

j) **No Impact**. Tsunamis are usually caused by displacement of the ocean floor causing large waves and are typically generated by seismic activity. The project site is located approximately 19 miles from the Pacific Ocean, therefore a tsunami hazard is not present for project site. A seiche is a standing wave in an enclosed or partly enclosed body of water. Seiches are normally caused by earthquake activity, and can affect harbors, bays, lakes, rivers, and canals. The Hollywood Reservoir is located approximately three miles west of the project site, which is too far to be impacted by a seiche event at the reservoir. Should an earthquake onsite generate a seiche within the tank, the seiche would remain contained within the tank because there is no opening to allow the water to escape, as in a lake or open reservoir setting. Lastly, mudflow is a mixture of soil and water that runs like a river of mud down a hillside and is usually generated by heavy rainfall. The project site is located adjacent to a hillside that would not expose the project to potential mudflow as the hillside is large vegetated and would slow the flow water should water escape rapidly. The proposed tank would be maintained on a regular routine to ensure the tank is repaired as necessary reducing the potential for tank failure. Therefore, impacts related to seiche, tsunami, or mudflow mudflows would not occur.

2-BO *In response to Comment 2-BO, an editorial change has been made to Section 2.10, Land Use and Planning, of the Draft MND as follows:*

b) **No impact.** The project site has a land use designation and zoned as of OS (Open Space). The adjoining areas are also designated OS and zoned OS. The proposed water pipeline would be located underground and would not constrain or change the existing land uses within the project area. Construction of the aboveground facilities would not conflict with the existing land use and zoning designations. As a result, no impacts related to conflicts with applicable land use plans, policies, or regulations related to avoiding or mitigating an environmental effects would occur.

2-BP *In response to Comment 2-BP, an editorial change has been made to Section 2.10, Land Use and Planning, of the Draft MND as follows:*

c) **No Impact.** As discussed in section ~~3~~2.4(f), the proposed project is not located

within a HCP or NCCP. However, the project area is located within the Griffith Park Wildlife Management Plan area. This plan establishes a baseline in terms of known threats to wildlife and includes BMPs that help assist the Los Angeles Department of Recreation and Parks staff in making land management decisions in Griffith Park and the surrounding open space areas. The proposed project would follow the recommended BMPs whenever applicable. In addition, the project would not alter land use and therefore would not conflict with the plan.

2-BQ *In response to Comment 2-BQ, an editorial change has been made to Section 2.12, Noise, of the Draft MND as follows:*

Construction of the proposed project would include the use of a backhoe to excavate the pipeline trench, a flat bed truck to transport the new pipe material, and accessory vehicles (i.e., pick-up trucks) to take the construction crew to and from the project site. Construction activities would occur 7:00 a.m. to 4:00 p.m., Monday through Friday. There are no sensitive receptors located within 500 meterst (1,640 feet) of the project pipeline alignment, pump station or water tank sites. Additionally, construction-related noise would be short-term and would not expose sensitive receptors to noise. Noise generated by truck travel to and from the project area would also be short-term and temporary and would not produce substantial increases in traffic that could result in a significant increase in noise levels. Operation of the proposed water pipeline and equipment would generate minimal noise. The proposed pump station would include an enclosure around the pump which would attenuate operational noise. The onsite facilities would be unmanned with exception of infrequent maintenance activities on the equipment that would not exceed noise standards. As a result, the proposed project would not generate noise levels in excess of adopted standards and noise impacts would be less than significant.

Response to comment BQ: the commenter states there is no identification or discussion of sensitive receptors in the park to assess noise impacts and to revise the analysis.

For purposes of this analysis, sensitive land uses such as residences, hospitals and schools were considered, where people may be assumed to be present for many hours over time or have weakend respiratory systems and therefore be at risk for exposure to substantial pollutant concentrations. To address concerns regarding potential sensitive receptors present at the project site during summer of 2014 and 2015, construction activities have been phased to avoid project construction during those times.

2-BR *In response to Comment 2-BR, an editorial change has been made to Section 2.12,*

Noise, of the Draft MND as follows:

d) **Less than Significant Impact.** See responses 12. a) through c) above. Construction noise would be short-term (intermittently over ~~22~~ 36 months) and would result in a temporary increase in ambient noise levels. However, the project area is open space and there are no permanent sensitive receptors located in proximity to the project site that could be affected by the temporary construction noise increase. Thus, construction-related noise is not considered to be substantial. Operation of the pipeline and well equipment would be unmanned with exception of infrequent maintenance events, and would not result in a substantial increase in ambient noise. Therefore, impacts related to substantial temporary or periodic increases in ambient noise levels would be less than significant.

2-BS *In response to Comment 2-BS, an editorial change has been made to Section 2.15, Recreation, of the Draft MND as follows:*

a) **Less than Significant Impacts.** The proposed project would be located within Griffith Park which is frequently used by visitors. The proposed project would involve the construction and installation of a recycled water pipeline, recycled water storage tank, and a pump station. The proposed project includes the use of HDD method at Fern Canyon Nature Trailhead to avoid impacts to trail users. The proposed project would not increase the use of the park facilities. Operation of the proposed project would not create population growth that would increase the use of the park such that substantial physical deterioration of the facilities would occur. Therefore, less than significant impacts would occur.

LADWP has coordinated extensively with ~~LA~~RAP for implementation of the proposed project. As discussed in Section 2.5 Alternatives Considered but Withdrawn, several alternatives were evaluated with cooperation from both departments before concluding on the proposed project. During discussions for the proposed project, concerns were raised regarding construction impacts during the summers of 2014 and 2015 due to the 2015 Special Olympics World Summer Games will be held partly in Griffith Park. Los Angeles Memorial Coliseum will serve as the main venue, with event locations staged in several other locations in the city, including Griffith Park. Preparation and activities for the event in Griffith Park would take place over the summers of 2014 and 2015. Construction activities have been phased to avoid project construction during the Special Olympics over the summers of 2014 and 2015. Therefore, less than

significant impacts would occur to park operations.

2-BT *Response to comment BT: the commenter states to fix the problem of the cut and cover pipeline project component (in regards to phasing).*

Refer to response to Comment 2-P, 2-Q, 2-R, 2-T, 2-V for response regarding project construction.

2-BU *In response to Comment 2-BU, an editorial change has been made to Section 2.16, Transportation and Traffic, of the Draft MND as follows:*

b) **Less than Significant.** The 2010 Congestion Management Program (CMP) for Los Angeles County addresses the impact of local growth on the regional transportation system. The goal of the CMP is to comply with statutory requirements of the CMP, including monitoring level of service (LOS) on the CMP Highway and Roadway network, measuring frequency and routing of public transit, implementation the Transportation Demand Management and Land Use Analysis Program Ordinances, and helping local jurisdictions meet their responsibilities under the CMP. The proposed construction truck route would utilize I-5 and SR-134, which are CMP highways. The truck route would also utilize Crystal Springs Drive from I-5, Western Heritage Way from SR-134, and Fire Road adjacent to Crystal Springs Drive in Griffith Park roadways. These roadways ~~are/~~are not designated as CMP roadways. Construction related traffic would consist of a maximum of 103 vehicular roundtrips during the tank and pump station construction phase and approximately 145 roundtrip per day generated by construction workers. The temporary addition of ~~170~~ 248 truck trips to the roadways during the ~~HDD pipeline and~~ pump station and tank replacement phases would be minimal. No additional traffic analysis is required as the proposed project does not fit the following criteria requiring further analysis:

- The proposed project will add 50 or more trips during AM or PM weekday peak hours to CMP arterial monitoring intersections
- The proposed project will add 50 or more peak hour trips to CMP arterial segments
- The proposed project will add 150 or more trips to mainline freeways during AM or PM weekday peak hours

Construction-related truck trips would be short-term and minimal and is not

anticipated to permanently impact the existing LOS or conflict with the existing roadway conditions. In addition, construction deliveries and departures would be timed to avoid mainline freeways during AM and PM weekday peak hours. Operational truck trips would be limited and infrequent and would not impact the existing LOS or conflict with the existing roadway conditions. Additionally, the proposed project would be required to prepare a traffic control plan that would be reviewed and approved by the Los Angeles Department of Transportation. Therefore impacts would be less than significant.

2-BV *In response to Comment 2-BV, an editorial change has been made to Section 2.16, Transportation and Traffic, of the Draft MND as follows:*

d) ~~No~~ **Less than Significant Impact.** The proposed project would not alter existing roadways nor include any hazardous design features such as sharp curves or dangerous intersections. No incompatible uses such as farm equipment are proposed. As stated in response 2.16 a), construction access to the various parts of the alignment would be via Crystal Springs Drive from I-5, Western Heritage Way from SR-134, and Fire Road adjacent to Crystal Springs Drive in Griffith Park. All construction activities would occur within the 30-foot construction corridor, and no roadway or lane closures are anticipated. Construction-related truck trips would be minimal and short-term and are not anticipated to impact the existing circulation system performance. As a result, traffic impacts to the roadway system from construction would be less than significant. ~~As such, no impacts would occur.~~

2-BW *In response to Comment 2-BW, an editorial change has been made to Section 2.16, Transportation and Traffic, of the Draft MND as follows:*

f) ~~No~~ **Less than Significant Impact.** Segments of the proposed pipeline would be located in proximity to the Fern Canyon Nature Trail, which is used frequently by local residents and visitors as a walking and hiking path. To avoid permanent adverse impacts to the existing Fern Canyon Nature Trail, installation of the pipeline would be completed using the HDD method. ~~This would ensure the nature trail impacts, although short-term, would not adversely impact the trail during construction and operation.~~ Construction activities would be located along portions of Nature Fern Canyon Trail (refer to Figure 3), particularly near the trailhead for the HDD pipeline. However, access will remain unimpeded and use of the trail will continue during construction activities. Construction activities would not conflict with the Griffith Park Master Plan and other policies, plans, or

programs regarding public transit, bicycle, or pedestrian facilities within the project area. At the end of construction, the project area would return to pre-construction conditions, with the exception of the new above ground structures. In addition, the proposed project would not propose any activities that would conflict with policies, plans, or programs support alternative transportation. ~~No~~ iImpacts would be less than significant ~~occur~~.

2-BX *The commenter states if no soil will be hauled off-site then why are there so many haul truck trips reported?*

The truck trips are related to material delivery to the project site for building the project components and not for hauling excavated soils.

2-BY *The commenter states change prehistoric archaeological resources to more general cultural resources.*

This change is not considered necessary as it does not relate to the environmental impact significance conclusion.

2-BZ *The commenter states to please identify the project that is 0.5 miles to the east of the project site.*

The commenter did not provide the necessary for inclusion in the analysis.

2-CA *In response to Comment 2-CA, an editorial change has been made to Section 2.18, Mandatory Findings of Significance, page 64 of the Draft MND as follows:*

TABLE 4
CUMULATIVE PROJECTS LIST

Project	Location	Land Use
River Supply Conduit Improvement Project Lower Reach	Zoo Drive, north of Griffith Park	Roadway; Park
Riverside Drive Bridge Widening and Rehabilitation Project	Bette Davis picnic area on the northern boundary of Griffith park	Park; Public Facility
Headworks Reservoir Project	6001 West Forest Lawn Drive	Park
North Atwater Non-Motorized Bridge Project	3900 Chevy Chase Dr	Park
LADWP Power Reliability Improvement Project	Along Los Feliz Blvd	Roadway; Commercial

Griffith Park Baseball Fields	Crystal Springs Picnic Area of Griffith Park	Park; Public Facility
~~LARAP Shakespeare in the Park New Permanent Stage~~ Griffith Park Performing Arts Center	Old Zoo	Park; Public Facility
BOE Interceptor Sewer	Intersection of Crystal Springs Rd and the 5 freeway exit	Roadway; Park
2014/15 Special Olympics Games	Griffith Park	Park; Public Facility

2-CB *The commenter states the cases for less than significant air quality, noise and traffic impacts have not been made and requests revisions when all comments have been addressed.*

The comments are appreciated and revisions have been applied to this Final MND. The changes made to the Final MND as a result of the comments provided have not resulted in changes to the significance determinations requiring additional mitigation measures. No additional analysis is required to substantiate findings for air quality, noise and traffic less than significant impacts.

2-CC *The commenter states revise the Biological Resource Report for all changes to the project description as required.*

The comments are appreciated and the updates have been applied to this Final MND; the technical reports are not required to be updated with this information.

2-CD *The commenter states revise the Paleontological Report for all changes to the project description as required.*

The comments are appreciated and the updates have been applied to this Final MND; the technical reports are not required to be updated with this information.

2-CE *The commenter states that the air quality appendices need to be included.*

The data emission sheets are provided in Appendix C of this Final MND.

Adoption of the Mitigated Negative Declaration and consideration of the proposed project by the Board of Water and Power Commissioners (Board) is tentatively scheduled for March 4, 2014 at 11:30 a.m. The meeting location is:

Los Angeles Department of Water and Power
Room 1555-H, 15th Floor
111 North Hope Street
Los Angeles, CA 90012

Regular meeting agendas are available to the public at least 72 hours before the Board meets. The Board Agenda may be viewed on the LADWP website at http://www.ladwp.com/ladwp/cms/ladwp001861.jsp or the commission office may be contacted at (213) 367-1350. If you have any questions or are in need of additional information, please contact Irene Paul at (213) 367-3509.

Sincerely,

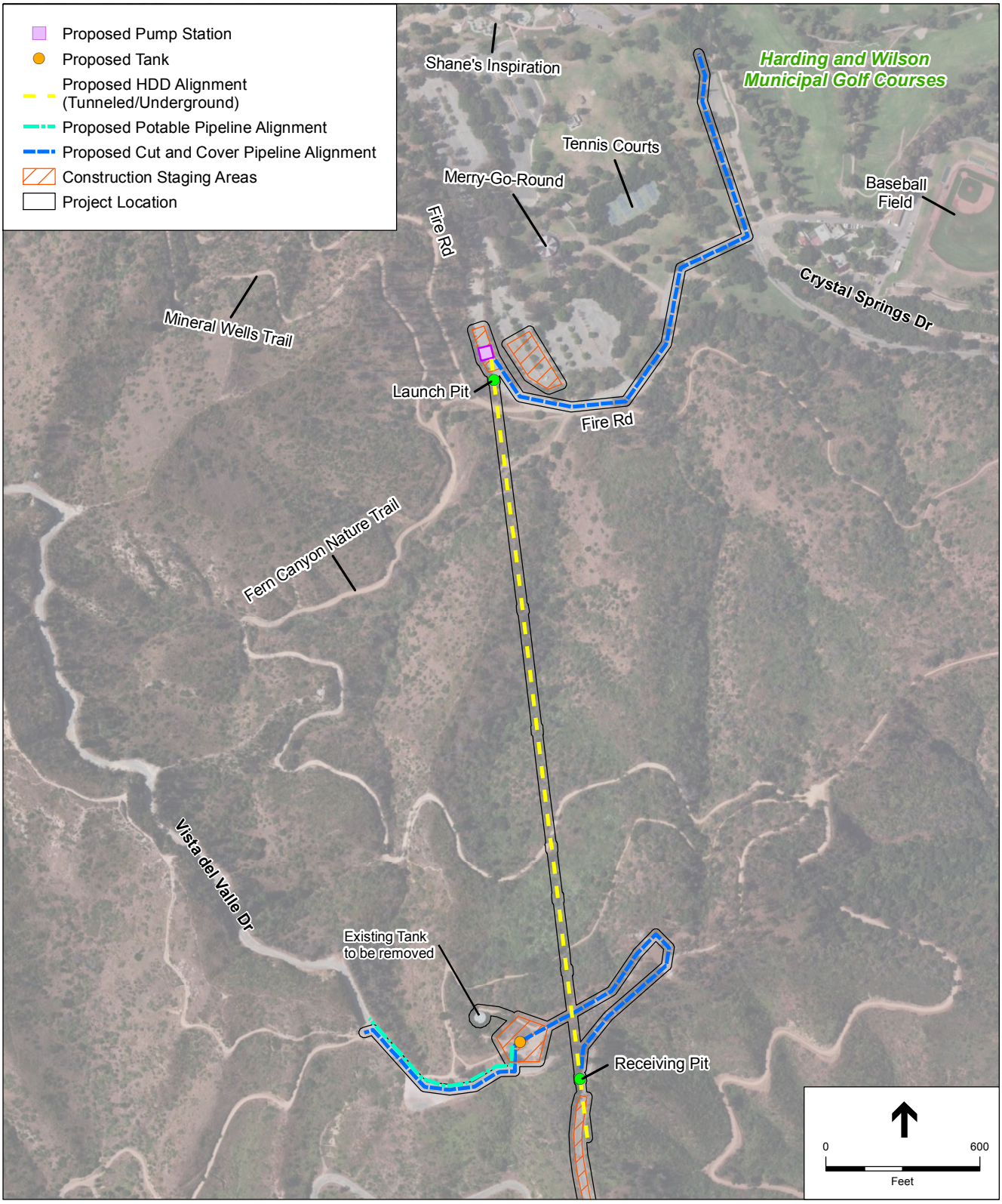
Charles C. Holloway
Manager of Environmental Planning and Assessment

IP:
c/enclosure : Ms. Irene Paul

Source: ESRI

Griffith Park South Water Recycling Project. 211490.27

Figure 2
Project Vicinity



Source: ESRI

Griffith Park South Water Recycling Project. 211490.27

Figure 3
Project Site

DOCUMENT REVIEW AND COMMENT							
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Page	Section	Para.	Comment	
1	1.2.1	1	Change propose to proposes	A
2	1.3	1	Please use LADRP or RAP	B
4	Figure 2		Add Crystal Springs Dr. and Griffith Park Dr. as reference landmarks.	C
5	1.4	2	Add a bullet for installation of pumps in the pump house; include number, type and brake horsepower.	D
5	1.4	2	The starting point for the new pipeline is not the Merry-Go-Round; choose a closer park landmark. Change Los Feliz park entrance to: "the entrance to Griffith Park at Los Feliz Blvd."	E
6	(1.4)	1	Revise the first full sentence to read: "…connect to the proposed recycled water pump station to be located on the eastside of Fire Rd." Delete the next sentence that is redundant.	F
6		1	Show Fire Rd. on Figure 3 for reference to the text.	G
6		4	Clarify the last sentence in this paragraph: there would be a 615 foot gain from the base elevation of 525 feet at the pump station to the new storage tank at an elevation of 1,140 feet.	H
6		4	How is the pump station 10 feet high, but is enclosed in a small housing structure? The housing structure is the pump station. Please clarify.	I
6		5	Why is the existing tank foundation being left in place? It should be removed and the site restored.	J
6		5	In paragraph 4 the base elevation for the tank in reported as 1,140 feet, but in paragraph 5 it's reported at 1,110 feet. Please clarify the difference or revise.	K
6		5	Revise last sentence to: "The proposed recycled water storage tank would also have a potable water back-up supply from the existing potable water system located above the tank at an elevation of 1.544 feet.	L
7	Fig. 3		Highlight some Griffith Park land marks used in the texts, such as the Merry-Go-Round and Fern Canyon Nature Trail.	M

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8	1.4.1	General	Somewhere in the Project Construction section there needs to be recognition of cumulative construction activities for this part of Griffith Park in the proposed same time frame for this project. This includes the Performing Arts Center at the Old Zoo area, the ballfields at Crystal Springs picnic area, and the Northeast Interceptor Sewer Phase 2A just east of the Crystal Springs picnic area. Also, the January 2, 2014 construction start date for Phase 1 construction is unlikely given the completion of the MND and the required Board of Recreation and Parks Commission approval for easements and a Right-Of-Entry permit.	N
8	1.4.1	1	Use Fern Canyon Nature Trailhead to differentiate from the whole trail.	O
8	1.4.1	2	Add a sentence that states the cut and cover pipeline phase will include two separate segments; one along Crystal Springs Dr. and Fire Rd., and another near the existing water tank on Vista Del Valle Dr.	P
8	1.4.1	3	The Cut and Cover Pipelines phase description is confusing. Discuss the two separate segments rather than a “Phase 1” and “Phase 2.” I suggest the “(Phase 1)” be added at the end of the heading to clarify the project phasing.	Q
8	1.4.1	4	Fix “Phase 1 & 2” problem. Also the number of workers and truck trips is confusing. The math implies that only workers will generate truck trips. What about equipment deliveries and haul trips? The potential amount of dirt being moved does not seem to be reflected in the numbers. On Page 18, there are 18 trucks trips per day alone quoted for hauling.	R
8	1.4.1	5	Fix “Phase 1” problem. Construction start date?	S
8	1.4.1	6	Add “(Phase 3)” be added at the end of the heading, and consider rearranging the entire section with the “HDD Pipeline (Phase 2)” section.	T
9	(1.4.1)	1	There’s the same confusion on the number workers and truck trips without an explanation of their relationship.	U
9	(1.4.1)	3	Are the HDD launch pit and the pump station staging and construction areas related? Are the receiving pit and the water storage tank staging and construction areas related? Clarify if there are any overlapping staging and construction areas.	V

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9	(1.4.1)	4	There's the same confusion on the number workers and truck trips without an explanation of their relationship. On Page 18, 48 haul truck trips and 122 worker round trips are quoted for this phase of construction; is this consistent?	W
9	1.4.2	1	Explain a little more on the routine maintenance activities. Misspelled "Iinfrequent"	X
9	1.5	1	Please use LADRP or RAP consistent with Page 2	Y
10		2	Tank 114 , not 1114. The third sentence of the paragraph, add "new" before the word "tank," put a comma after suitable, and change "not be required" to "be avoided."	Z
10		3	To be consistent, add ", where a pump station was proposed." At the end on the second sentence.	AA
10		4	The alternative location of the pump station doesn't make sense because the location of the proposed pump station is located in the same general area and has not differentiated from the same Griffith Park landmark. Please clarify.	AB
11		3	Add: ", Board of Recreation and Parks Commission" after City of Los Angeles Department of Recreation and Parks in the Agency column. Add Easements and Right-Of-Entry Permit in the Permits and Authorizations Required column.	AC
13	2.1	1.a)	Explain how the broad vistas of Griffith Park from Vista Del Valle Dr. will not be significantly affected by the proposed water storage tank, even though there are no designated scenic vistas.	AD
18	2.3	3.b)	On Page 9, pipeline installation quotes 18 workers for first segment and 21 workers for the second segment, and 21 worker round trips are reported here. Is this consistent? Are the same workers used for both segments, and one round trip per worker seems to be under estimated.	AE
19	2.3	3.b)	Table 3 only shows construction emissions for Pipeline Trenching. What about emissions from HDD hauling (assuming pipeline related hauling is included in the trenching numbers) and pump house construction? Also, the footnote states cites Appendix A for data emission sheets, but the Biological Report in Appendix A. Please add the correct appendix and reference.	AF

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19	2.3	3.c)	Project construction would result in both dust and exhaust.	AG
20	2.3	3.c)	Include $PM_{2.5}$. How was no cumulatively considerable net increase of any criteria pollutants determined without consideration of other projects in the area?	AH
22		5	Silvery Legless Lizard in included in the section heading, but is not discussed in the paragraph. Either talk about it of remove it from the heading.	AI
24		3	What is the significance of the last sentence? What Special-Status Plant species would occur?	AJ
25		2	Delete the first and second sentences as redundant. Move the remainder of the paragraph up into the previous paragraph.	AK
26		1	Capitalize mitigation measure.	AL
26		2	In the Bats section, tree trimming is discussed as a potential impact. But there has been no previous mention of this project activity. Capitalize mitigation measure, and drop the plural.	AM
26		3	Even though no trees will be removed. Please discuss whether any tree protection zones will be affected during project construction. The RAP Forestry Division defines Tree Protection Zone as the radial zone in feet around the tree equal to 1.5 times the diameter of the trunk at breast height.	AN
27		1	Nesting Birds: Spell out MTBA.	AO
28		9	Replace [i.e., driplines] with [1½ feet times the diameter of the trunk at breast height]	AP
29		1	Replace drip lines with protection zones, and delete to the greatest extent feasible.	AQ
29		4	Replace recommended with required in the first sentence. Delete “it is recommended that’ and insert “shall” after biologist in the second sentence.	AR

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30		3	Insert at the beginning of the sixth sentence: "While this plan is not an official designation, the plan establishes…"	**AS**
32-33	2.5	a)	There is no mention of the tank that will be removed in this section.	**AT**
35	MM	CUL-3	Insert after "areas" within the limits of the project.	**AU**
36	MM	CUL-6	Rewrite the last sentence as follows: "Until LADRP as the landowner has conferred with the MLD regarding their recommendations, as prescribed in PRC Section 5097.98, taking into account the possibility of multiple human remains, LADWP shall…practices."	**AV**
37	2.6	a) i)	The paleontologist should review this section for consistency on the geologic formations. Cenozoic and Neogene are not mentioned in the paleo report. The Santa Monica Mountains are not included within Griffith Park, but the easternmost part of the mountains includes the park. Please revise the sentence.	**AW**
38		1	Change efficient to effective in the second sentence. Insert a comma after developed, and replace "on the project site" to subject to seismic hazards in the fourth sentence. Change "this publication" to these guidelines in the seventh sentence.	**AX**
38		3	Change response to effects in the second sentence. Add after the third sentence: Any and all of these requirements will be used in the final design of the pipeline.	**AY**
38	MM	GEO-1	Revise last sentence to read: Results of the investigation will require specific design elements to protect new structures from seismic hazards.	**AZ**
39	2.6	a) iii)	Insert after pump station, "and HDD tunneling" in the third sentence, and end the sentence at "liquefaction." Capitalize 'However," and insert after pipeline "up to the pump station." Change next sentence to "The pump station would also be potentially at risk.	**BA**

DOCUMENT REVIEW AND COMMENT								
Document Title:	Mitigated Negative Declaration, Griffith Park Water Recycling Project							
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39	2.6	a) iv)	Insert after pump station, "and HDD tunneling" in the third sentence, and revise to read "…would not be directly located in an area of potential landslides." Change "Nonetheless" to "So," and "in the State of California" to "would". Delete the last sentence as redundant. Change 'response" to "effects" in the second paragraph of this section.	BB
41	2.6	b)	Insert after corridor, "primarily within existing roadway right-of-ways." Delete "compliance with the Construction General Permit and" and insert "the", and delete "for the construction phase of the proposed project." Delete "no substantial adverse" and "would occur, and impacts"	BC
41	2.6	c)	Change 3.6(a)(i) to 2.6(a)(i) and 32.6(a)(iv) to 2.6(a)(iv). Explain how the HDD method that creates a tunnel prevents subsidence.	BD
43	2.7	a)	Move GHG in front of emissions in the third sentence. Change sixth sentence to "There would be no sources…"	BE
43	2.7	b)	Change "house planning" to "housing plans." In the third sentence. Delete the fourth sentence. Start the fifth sentence as "The proposed…" , put a comma after environment, and continue the sentence with "and, therefore, would not conflict with AB 32 and AB 375."	BF
46	2.8	h)	Insert after the first sentence: " The Griffith Park Fire of 2007 burned over 800 acres, including portions of the project site." Insert after the third sentence: As described in 2.8(b), proper handling, storage, and disposal of fuels and other flammable materials in accordance with local safety requirements would minimize the risk of fires.	BG
48	2.9	a)	Insert "through the preparation and implementation of a SWPPP" after "NPDES standards".	BH
48	2.9	c)	What are the "adjacent existing structures" referred to in the paragraph? Change "of" to "or" in the second to the last sentence.	BI
48	2.9	c)	What are the "adjacent existing structures" referred to in the paragraph? Revise the second to the last sentence to read: "However, the proposed project is not anticipated to increase…runoff, and would not…"	BJ

DOCUMENT REVIEW AND COMMENT								
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48-49	2.9	e)	Replace "which" with "that", and change "that" with "all". Change the last sentence to read: "…or increase the amount of runoff that would exceed the existing capacity of stormwater drainage systems…"	BK
49	2.9	g)	Insert at tend of the second sentence, "that would expose people or property to flood hazards."	BL
49	2.9	i)	Would flooding from a dam failure actually affect the project site? Please clarify. What about a tank failure? Please explain.	BM
49	2.9	j)	What about seiche in the water storage tank? Please explain. Please state why the project would not contribute to potential mudflows.	BN
50	2.10	b)	Change effect to effects	BO
50	2.10	c)	Change 3.4(f) to 2.4(f). See comment for Page 30.	BP
53	2.12	a)	Convert 500 meters to feet. There's no identification or discussion of sensitive receptors in the park, such as Shane's Inspiration, the Merry-Go-Round, and nature programs that use the Fern Canyon Nature Trail to assess noise impacts. Please revise the analysis.	BQ
53	2.12	d)	The third sentence is incorrect. See comment 2.12(a). This part of the park is very quiet and temporary or periodic increases in noise in the vicinity of the project may be substantial during construction.	BR
57	2.15	a)	Use Fern Canyon Nature Trailhead as the point of reference. Change LARA to LADRP or RAP.	BS
58	2.16	a)	Fix the phasing problem of the Cut and Cover Pipeline project component. Revise consistently with any changes in truck trips from previous comments. HDD truck trips will occur in a very short window of time, but will comprise the bulk of the daily 170 construction trips on the park roadways. But, the conclusion is still that this will be a minimal impact.	BT

DOCUMENT REVIEW AND COMMENT								
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58	2.16	b)	Correct the fifth sentence: Are or are not the roadways CMP? In the sixth sentence, what do the 103 construction trips relate to in the project? This is a new number with no explanation of what it represents. How has it been determined that project does not fit the CMP criteria (bullets) for additional traffic analysis, if a peak hour assessment has been attempted. How can the impact to the existing LOS in the second paragraph of this section not be anticipated, if the exiting LOS has not been documented? Why will a traffic control plan be required, if the impacts are so minimal?	BU
60	2.16	d)	Crystal Springs Dr. and Western Heritage Way are very constricted roadways, and heavily used by both the National Autry Center and the LA Zoo, but there's been no attempt at a circulation analysis.	BV
60	2.16	f)	The HDD activities may avoid impacts to the Fern Canyon Nature Trial, but what about the staging and pump station construction? Please add a description of the project activities on access to and the use of the trail during construction. Since they may be some effects on these park resources, it is recommended that this section be changed to Less Than Significant.	BW
62	2.17	f)	If no excavated soil will be hauled offsite, then why are there so many haul truck trips reported for the project? Please clarify.	BX
63	2.18	a) para. 2	Change prehistoric archaeological resources to the more general cultural resources. The next sentence details the types of cultural resource affected.	BY
63	2.18	b)	Please identify the project that is 0.5 miles east of the project site.	BZ
64	Table 4		Change LARAP Shakespeare in the Park New Permanent Stage to Griffith Park Performing Arts Center	CA
64		2	The cases for less than significant air quality, noise and traffic impacts have not been made. Please revise as required when all comments have been addressed.	CB
Appendix A			Revise the Biological Resource Technical Report for all changes to the project description from comments to the main document as required.	CC
Appendix B			Revise the Paleontological Investigation Report for all changes to the project description from comments to the main document as required.	CD

DOCUMENT REVIEW AND COMMENT								
Document Title:	Mitigated Negative Declaration, Griffith Park Water Recycling Project							
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Appendix C?			Need to include the appendix for air quality analysis.					

CE

January 22, 2014

Ms. Dianna Watson, IGR/CEQA Branch
District 7, Regional Planning
Department of Transportation
Business, Transportation, and Housing Agency
State of California
100 Main Street, MS #16
Los Angeles, CA 90012-3606

Subject: Responses to Comments on the Initial Study/Mitigated Negative Declaration for the Griffith Park South Water Recycling Project

Thank you for your comments (Letter No. 3, enclosed) on the Initial Study/Mitigated Negative Declaration (IS/MND) for the Griffith Park South Water Recycling Project (Project). Your comments and a response to your comments are provided as follows:

Response 3-A
This comment summarizes various Project details, and states that because the Project is within Griffith Park, Caltrans does not expect Project approval to result in direct adverse impacts to Interstate 5.

Thank you for your comments. This comment includes introductory remarks and does not state a specific concern or question regarding the adequacy of the environmental impact analysis in the MND. This comment has been forwarded to the City of Los Angeles Board of Water and Power Commissioners (Board) for review. No further response is required.

Response 3-B
This comment states storm water runoff is a sensitive issue for Los Angeles and Ventura Counties, and that projects should be designed to discharge clean runoff water. Discharge of storm water runoff is not permitted onto State highway facilities.

Thank you for your comments. Construction and operation of the proposed Project facilities would be located within Griffith Park and would not alter the existing drainage pattern of the Project site. The proposed pipeline would be located underground and would not change the existing drainage pattern throughout its alignment. The recycled water storage tank and pump station would be located on cement pads, which may

111 N. Hope Street, Los Angeles, California 90012-2607 *Mailing address:* Box 51111, Los Angeles, CA 90051-5700
Telephone: (213) 367-4211 www.LADWP.com

slightly alter the drainage pattern of that area. However, the proposed Project is not anticipated to increase runoff, and would adhere to all National Pollutant Discharge Elimination System (NPDES) Regulations and implement Best Management Practices (BMPs) to ensure that construction does not result in erosion impacts. Therefore, the proposed Project would not substantially alter the existing drainage pattern of the site or area and substantial erosion or siltation would not occur. This comment has been forwarded to the Board for review. No further response is required.

Response 3-C

This comment states that a transportation permit from the Department is required and a traffic construction plan may be needed for this Project.

Thank you for your comments. Section 2.16, *Transportation and Traffic,* (page 95) states the proposed Project would be required to prepare a traffic control plan that would be reviewed and approved by the Los Angeles Department of Transportation. In addition, any necessary transportation permits, such as for oversized vehicles, would be obtained along with review and approval of the traffic control plan. This comment has been forwarded to the Board for review. No further response is required.

Adoption of the MND and consideration of the proposed Project by the Board is tentatively scheduled for March 4, 2014 at 11:00 a.m. The meeting location is:

Los Angeles Department of Water and Power
111 North Hope Street, Room 1555-H, 15th Floor
Los Angeles, CA 90012

Regular meeting agendas are available to the public at least 72 hours before the Board meets. The Board Agenda may be viewed on the LADWP website at http://www.ladwp.com/AboutLADWP or the commission office may be contacted at (213) 367-1350. If you have any questions or are in need of additional information, please contact Ms. Irene Paul of my staff at (213) 367-3509.

Sincerely,

Nadia J Paul for

Charles C. Holloway
Manager of Environmental Planning and Assessment

IP:mg
Enclosure
c/enc: Ms. Irene Y. Paul

Comment Letter 3

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, REGIONAL PLANNING
IGR/CEQA BRANCH
100 MAIN STREET, MS # 16
LOS ANGELES, CA 90012-3606
PHONE: (213) 897-9140
FAX: (213) 897-1337

Flex your power!
Be energy efficient!

October 29, 2013

Ms. Irene Paul
Los Angeles Department of Water and Power
Environmental Planning and Assessment
11 North Hope Street, Room 1044
Los Angeles, CA 90012

RE: Griffith Park South Water, Recycling Project
IGR/CEQA No. 131048/NOI
Vic. LA-5, PM 23.965 to 38.568

Dear Ms. Paul:

Thank you for allowing the California Department of Transportation (Caltrans) to review the proposed Griffith Park South Water Recycling Project. The project is located within Griffith Park at 4730 Crystal Springs Drive in the City of Los Angeles.

The proposed project would expand the use of recycled water within Griffith Park and the Los Feliz area of the City of Los Angeles. When the project is fully implemented, it will extend the existing Greenbelt Water Recycling distribution line south to serve the Roosevelt Golf Course, which is a prime customer for recycled water. Construction of the project will include recycling water pipelines, a water pump station, a regulator valve, and a recycled water storage tank. **A**

The Griffith Park South Water Recycling Project is approximately 2-3 miles from Interstate 5 (I-5). However, because the construction of the project is within Griffith Park, Caltrans does not expect project approval to result in a direct adverse impact to the existing State transportation facility.

Storm water run-off is a sensitive issue for Los Angeles and Ventura counties. Please be mindful that projects should be designed to discharge clean run-off water. Additionally, discharge of storm water run-off is not permitted onto State highway facilities. **B**

Transportation of heavy construction equipment and/or materials, which requires the use of oversized-transport vehicles on State highways, will require a transportation permit from the Department. It is recommended that large size truck trips be limited to off-peak commute periods. In addition, a truck/traffic construction management plan may be needed for this project. **C**

If you have any questions, you may reach Zeron Jefferson, project coordinator at (213) 897-0219 and please refer to IGR number 131048/ZJ.

Sincerely,

DIANNA WATSON
IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse

January 22, 2014

Ms. Joyce Dillard
P.O. Box 31377
Los Angeles, CA 90031

Subject: Responses to Comments on the Initial Study/Mitigated Negative Declaration for the Griffith Park South Water Recycling Project

Thank you for your comments (Letter No. 4, enclosed) on the Initial Study/Mitigated Negative Declaration (IS/MND) for the Griffith Park South Water Recycling Project (Project). Your comments and a response to your comments are provided as follows:

Response 4-A

This comment states the statement located both on the page preceding the Table of Contents and on page 2 of the Draft MND that identifies Griffith Park as owned and operated by the City of Los Angeles Department of Recreation and Parks (RAP) is incorrect. There is an INDENTURE on the property; clear title ownership does not exist.

Thank you for your comments. The City of Los Angeles owns Griffith Park. The RAP has jurisdiction by City Charter because it is dedicated parkland.

Response 4-B

This comment states that in regard to Section 1.2.1, *Project Background,* recycled water for the golf course is 310 acre feet per year (AFY) and for future customers at 60 AFY totaling 390 AFY. The capacity of this Project is then 390 AFY.

Thank you for your comments. Section 1.2.1, *Project Background,* identifies the golf course could require approximately 310 AFY of recycled water for irrigation. In addition to providing 310 AFY of recycled water for irrigation to the golf course, the proposed Project would increase storage capacity to accommodate future expansion of the recycled water system to other areas of Griffith Park and the Los Feliz area. The Draft MND analyzed impacts associated with infrastructure required to supply 310 AFY to the golf course and a larger recycled water tank to ensure any future improvements do not

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Telephone: (213) 367-4211 www.LADWP.com

require additional capacity of this tank. Future improvements to provide recycled water to other areas of Griffith Park and the Los Feliz area, including the Greek Theatre; landscaped medians within Vermont Avenue and Hillhurst Avenue; the Griffith Park Nursery and Horticultural Center; picnic areas in the immediate vicinity; and the bird sanctuary, are not yet identified and may require additional environmental review should additional infrastructure be required.

Response 4-C

This comment states that in regard to Section 1.2.1, *Project Background;* the environmental effects associated with the expansion, which is anticipated to serve more than Griffith Park including landscaped medians in Los Feliz, are not fully addressed.

Thank you for your comments. Refer to response to comment 4-B.

Response 4-D

This comment states that in Section 1.2.1, *Project Background,* the impacts of the expansion on the health of wildlife, including migratory birds, are not clear.

Thank you for your comments. Impacts to wildlife species were identified and discussed in Section 2.4, *Biological Resources*, of this Final MND. In addition, a *Biological Resource Technical Report* was prepared for the proposed Project and can be found in Appendix A of this document. Three native plant communities are found within the limits of the Project site: Southern California black walnut woodland, undifferentiated chaparral scrub, and coast live oak woodland (Figure 4). Wildlife species observed or expected to occur on the Project site are typical for the coastal range foothills. Several common wildlife species have been recorded on the Project site, while the coast horned lizard; silvery legless lizard; coastal whiptail; western mastiff bat; and the silver haired bat are special-status species with a moderate or greater potential to occur within the Project site. Rare and special-status plants have been recorded in the region of the Project site and have a potential to be present as detailed in Section 2.5, *Biological Resources.* Implementation of *Mitigation Measures* BIO-1 through BIO-5 would reduce potential impacts to native plant communities, wildlife species, rare and special-status plants during construction activities to less than significant levels.

Response 4-E

This comment states letter f) of Section 2.4, *Biological Resources*, of the Draft MND does not state the effect on any long-term migration of local wildlife and pollination of

local vegetation. The Draft MND also does not state the effect on the disruption of natural resources and trails.

Thank you for your comments. Refer to response to comment 4-D. The proposed Project includes the use of Horizontal Directional Drilling (HDD) at Fern Canyon Nature Trailhead to reduce impacts to trail users.

Response 4-F

This comment states that letter c) of Section 2.10, *Land Use and Planning*, of the Draft MND fails to list the Best Management Practices (BMPs) that are referred to in the paragraph. Letter a) of Section 2.4, *Biological Resources*, fails to list how the effects on wildlife nesting and procreation will be avoided.

Section 2.10, *Land Use and Planning*, refers to the BMPs listed in the Griffith Park Wildlife Management Plan. The Griffith Park Wildlife Management Plan describes the major vegetation communities that comprise the different wildlife habitats in Griffith Park. It also recommends management practices specific to each habitat type. Many management practices are applicable to multiple habitat types. Many animal species' multiple habitat requirements and the suite of species found in any given habitat type is influenced by the adjoining habitat. Please refer to the Griffith Park Wildlife Management Plan for more details.

Response 4-G

The comment states that in regard to the various mitigation measures listed in letter a) of Section 2.18, *Mandatory Findings of Significance*, it is unclear as to whether experienced and qualified personnel will be onsite to implement these measures. Cumulative impacts to future projects omit the recycled water expansion of this document.

Thank you for your comments. The *Mitigation Measures* BIO-1 through BIO-5 generally identify the work is to be conducted by a qualified arborist, wildlife biologist, and botanist to ensure the appropriate qualified personnel are on-site. In addition, *Mitigation Measures* CUL-1 through CUL-6 similarly identifies the need for the appropriately qualified person to conduct the work.

Adoption of the MND and consideration of the proposed Project by the City of Los Angeles Board of Water and Power Commissioners (Board) is tentatively scheduled for March 4, 2014 at 11:00 a.m. The meeting location is:

Los Angeles Department of Water and Power
Room 1555-H, 15th Floor
111 North Hope Street
Los Angeles, CA 90012

Regular meeting agendas are available to the public at least 72 hours before the Board meets. The Board Agenda may be viewed on the LADWP website at http://www.ladwp.com/AboutLADWP or the commission office may be contacted at (213) 367-1350. If you have any questions or are in need of additional information, please contact Ms. Irene Paul of my staff at (213) 367-3509.

Sincerely,

Nadia A Paulus for

Charles C. Holloway
Manager of Environmental Planning and Assessment

IP:mg
Enclosure
c/enc: Ms. Irene Y. Paul

Comment Letter 4

From: Joyce Dillard
Sent: Monday, December 02, 2013 3:23 PM
To: Paul, Irene
Subject: Comments to LADWP Griffith Park South Water Recycling Project due 12.2.2013

You state:

> *Griffith Park is owned and operated by the City of Los Angeles Department of Recreation and Parks (LARAP) and is located at 4730 Crystal Springs Drive.*

Comments:

There is an INDENTURE on the property; clear title ownership does not exist. **A**

You state:

> *The proposed project would expand the existing water recycling system supplied by the Los Angeles-Glendale Water Reclamation Plant by extending the Greenbelt Water Recycling distribution line south to serve the Roosevelt Golf Course as its prime customer. The Roosevelt Golf Course currently uses potable water for irrigation. It is anticipated the golf course could require approximately 310 acre feet per year (AFY) of recycled water for irrigation.*
>
> *In addition, the proposed project would increase recycled water storage to accommodate future expansion of the recycled water system to other areas of Griffith Park and the Los Feliz area, including the Greek Theatre, landscaped medians within Vermont Avenue and Hillhurst Avenue the Griffith Park Nursery and Horticultural Center, picnic areas in the immediate vicinity, and the bird sanctuary. The proposed project would expand storage for future customers by an average of 60 AFY of recycled water.*

Comments:

Recycled water for the golf course is 310 AFY and for future customers at 60 AFY totaling 390 AFY. The capacity of this project is then 390 AFY. **B**

An expansion is anticipated to serve more than Griffith Park including landscaped medians in Los Feliz, yet that expansion is not addressed further. The environmental impacts are not reflected on this expansion. **C**

It is not clear the impacts on the wildlife including migratory birds and any effects on health and disease. **D**

You state:

> *However, the project area is located within the Griffith Park Significant Ecological Area (SEA) as defined by the County of Los Angeles. The SEA is described as an extensive, relatively undisturbed island of natural vegetation* **E**

in an urbanized, metropolitan area. The SEA supports the coastal sage scrub, chaparral, riparian, and southern oak woodland plant communities typical for the interior mountain ranges of Southern California.

and

As a result of the study, two historical resources were identified within the project area: Griffith Park (P-19-175297) and Vista Del Valle Drive.

E

Comments:

Since the park will be affected, you do not state the effect on disruption on natural resources and trails including grizzly footprints (area extinct) any long-term migration or pollination of effected wildlife, birds and plant and tree species.

You state:

However, the project area is located within the Griffith Park Wildlife Management Plan area. This plan establishes a baseline in terms of known threats to wildlife and includes BMPs that help assist the Los Angeles Department of Recreation and Parks staff in making land management decisions in Griffith Park and the surrounding open space areas. The proposed project would follow the recommended BMPs whenever applicable. In addition, the project would not alter land use and therefore would not conflict with the plan.

and

6.4.1 Loss of Habitat
Direct impacts as a result of construction activities associated with the proposed Project would include the permanent removal and temporary disturbance of native vegetation that is utilized by both common and rare wildlife, and increased noise levels due to equipment operations occurring in these areas. Indirect impacts to habitat could include alterations to hydrological regimes such as runoff and percolation, increased erosion and sediment transport, and the introduction of nonnative and invasive weeds.

F

Comments:

You fail to list the BMPs and how the effects on wildlife nesting and procreation will be avoided.

You state:

18. MANDATORY FINDINGS OF SIGNIFICANCE —
Would the project:

a) 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, 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?

Less than Significant with Mitigation*.*
The proposed project would have the potential to impact sensitive wildlife species and natural communities during construction activities. However, with the incorporation of ***Mitigation Measures BIO-1 through BIO-5****, potential impacts to biological resources would be reduced to less than significant levels.*

G

The project would involve excavation and grading activities which could potentially unearth prehistoric archaeological resources. Such actions could unearth, expose, or disturb subsurface paleontological, archaeological, historical, or Native American resources that were not observable on the surface. However, with the incorporation of ***Mitigation Measures CUL-1 through CUL-6****, potential impacts to paleontological or cultural resources that represent major periods of California history or prehistory would be reduced to less than significant levels*

b) 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)?

Less Than Significant Impact.
A cumulative impact could occur if the project would result in an incrementally considerable contribution to a significant cumulative impact in consideration of past, present, and reasonably foreseeable future projects for each resource area. Because the project impacts are generally construction related, the cumulative study area is generally confined to the areas adjacent to the project site, which include open spaces, residential areas, and Griffith Park. There are several past, present, and reasonably foreseeable projects identified in the Griffith Park area that are listed in Table 4.

Comments:

Mitigation Measures listed are:

BIO-1: Worker Environmental Awareness Program
BIO-2: Habitat Revegetation.
BIO-2: Special-status Wildlife
BIO-3: Special-Status Plants.
BIO-4: Protected Trees
BIO-5: Nesting Birds
CUL-1: Pre-Construction Training.
CUL-2: Inadvertent Discoveries.
CUL-3: Preparation of Paleontological Resource Monitoring and Mitigation Plan and Pre-Construction Training
CUL-4: Paleontological Monitoring
CUL-5: Inadvertent Discoveries
CUL-6: If human remains are encountered,

G

It is unclear if experienced and qualified personnel will be onsite in order to interpret, determine and employ the Mitigation Measures considering Mandatory Findings of Significance were declared. Cumulative Impacts to Future Projects omit the recycled water expansion in this document.

Joyce Dillard
P.O. Box 31377
Los Angeles, CA 90031

SECTION 5
References, Acronyms, and Report Preparers

5.1 Document References

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5.2 Acronyms

AB 32	Assembly Bill 32
AFY	Acre-feet per year
AMSL	above mean sea level
AQMP	Air Quality Management Plan
Basin	South Coast Air Basin
Bgs	below ground surface
BMPs	best management practices
CAA	Clean Air Act
CARB	California Air Resource Board
CBC	California Building Code
CDFW	California Department of Fish and Wildlife
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO2e	Carbon Dioxide Equivalents
CWA	Clean Water Act
DOGGR	Department of Conservation, Division of Oil, Gas, and Geothermal Resources
DTSC	Department of Toxic Substances Control
FEMA	Federal Emergency Management Agency
GGPNC	Greater Griffith Park Neighborhood Council
GPSWRP	Griffith Park South Water Recycling Project
GHG	Greenhouse Gas
GPM	Gallons per minute
HCP/NCCP	Habitat Conservation Plan/Natural Community Conservation Plan
HDD	horizontal directional drilling
HFC	hydrofluorocarbons
I‑5	Interstate 5
IS/MND	Initial Study/ Mitigated Negative Declaration
LADWP	Los Angeles Department of Water and Power
~~LARAP~~	~~Los Angeles Department of Recreation and Parks~~
LAMC	Los Angeles Municipal Code
LOS	Level of Service

LUST	leaking underground storage tanks
MLD	Most likely descendant
MRZ	Mineral Resource Zone
NO_2	nitrogen dioxide
NOx	nitrous oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
OS	Open Space
PFC	perfluorocarbons
PM_{10}	particulate matter that is 10 microns or less in diameter
$PM_{2.5}$	particulate matter that is 2.5 microns or less in diameter
PUST	permitted underground storage tanks
RAP	Los Angeles Department of Recreation and Parks
ROG	reactive organic gasses
RWQCB	Regional Water Quality Board
RCRA	Resource Conservation and Recovery Act
SB 375	Senate Bill 375
SCAG	Southern California Association of Government
SCAQMD	South Coast Air Quality Management District
SCEDC	Southern California Earthquake Date Center
SF_6	sulfur hexafluoride
SR	State Route
SWPPP	Storm Water Pollution Prevention
SWRCB	State Water Resources Control Board
USFWS	United States Fish and Wildlife Service
USEPA	United State Environmental Protection Agency
USGS	U.S. Geological Survey

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APPENDIX A

Biological Resource Technical Report

GRIFFITH PARK SOUTH WATER RECYCLING PROJECT

Biological Resources Technical Report

Prepared for
Los Angeles Department of Water and Power

September 2013

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GRIFFITH PARK SOUTH WATER RECYCLING PROJECT

Biological Resources Technical Report

Executive Summary

Environmental Science Associates (ESA) conducted a biological field reconnaissance survey for the Griffith Park South Water Recycling Project (Project) to gather baseline data on the potential for sensitive biological resources to occur within or adjacent to the Project site. Southern California Black Walnut Woodland is the predominant plant community within the proposed Project site. The steep slopes and ridgetops are dominated by undifferentiated chaparral scrub. A small area of coast live oak woodland envelops the existing water tower proposed for removal. The woodland community is considered sensitive by the California Department of Fish and Wildlife (CDFW). ESA biologists confirmed that suitable habitat for the Mesa horkelia and four other special status plant species is present at the Project site. However, due to the timing of the field assessment, focused surveys could not verify if these plant species are present. Additionally, Coast horned lizard, coastal whiptail, and silvery legless lizard have potential to occur within the project site. Horizontal directional drilling (HDD), which is a form of tunneling or undergrounding the pipeline would be utilized so that most of the ground surface remains undisturbed, lessening the environmental impact to sensitive biological resources.

Jurisdictional resources were initially evaluated through a desktop analysis of topographic maps and aerial photographs. The desktop analysis was then further refined and verified in the field by ESA biologists. Based on this assessment, it was concluded that the Project site does not contain any federal or state jurisdictional waters, such as wetlands or defined drainages.

Recommendations described in Section 6.5 *Mitigation Measures* identify potential mitigation measures that will reduce potential Project-related impacts to biological resources to a less than significant level. No significant impacts are anticipated following implementation of the recommended mitigation measures provided in this report.

1. Introduction

This report describes effects to biological resources that would result from implementation of the Project. The following discussion addresses existing environmental conditions in the affected area, identifies and analyzes environmental impacts for the Project, and recommends measures to reduce or avoid significant impacts anticipated from Project construction and operation. In addition, existing laws and regulations relevant to biological resources are described. In some cases, compliance with these existing laws and regulations would serve to reduce or avoid certain impacts that might otherwise occur with implementation of the Project.

2. Project Description

The Project is located in Griffith Park in the City of Los Angeles, Los Angeles County, California (See **Figure 1**). The Project would expand the use of recycled water within the Hollywood Community Planning Areas of the City of Los Angeles. Implementation of the Project would extend the existing Greenbelt Water Recycling distribution line south to serve the Roosevelt Golf Course, which is a prime customer for recycled water. The Project would involve the construction of recycled water pipelines, a water pump station, and removal of an existing water storage tank and construction of a new recycled water storage tank **(Figure 2)**. Proposed project facilities include:

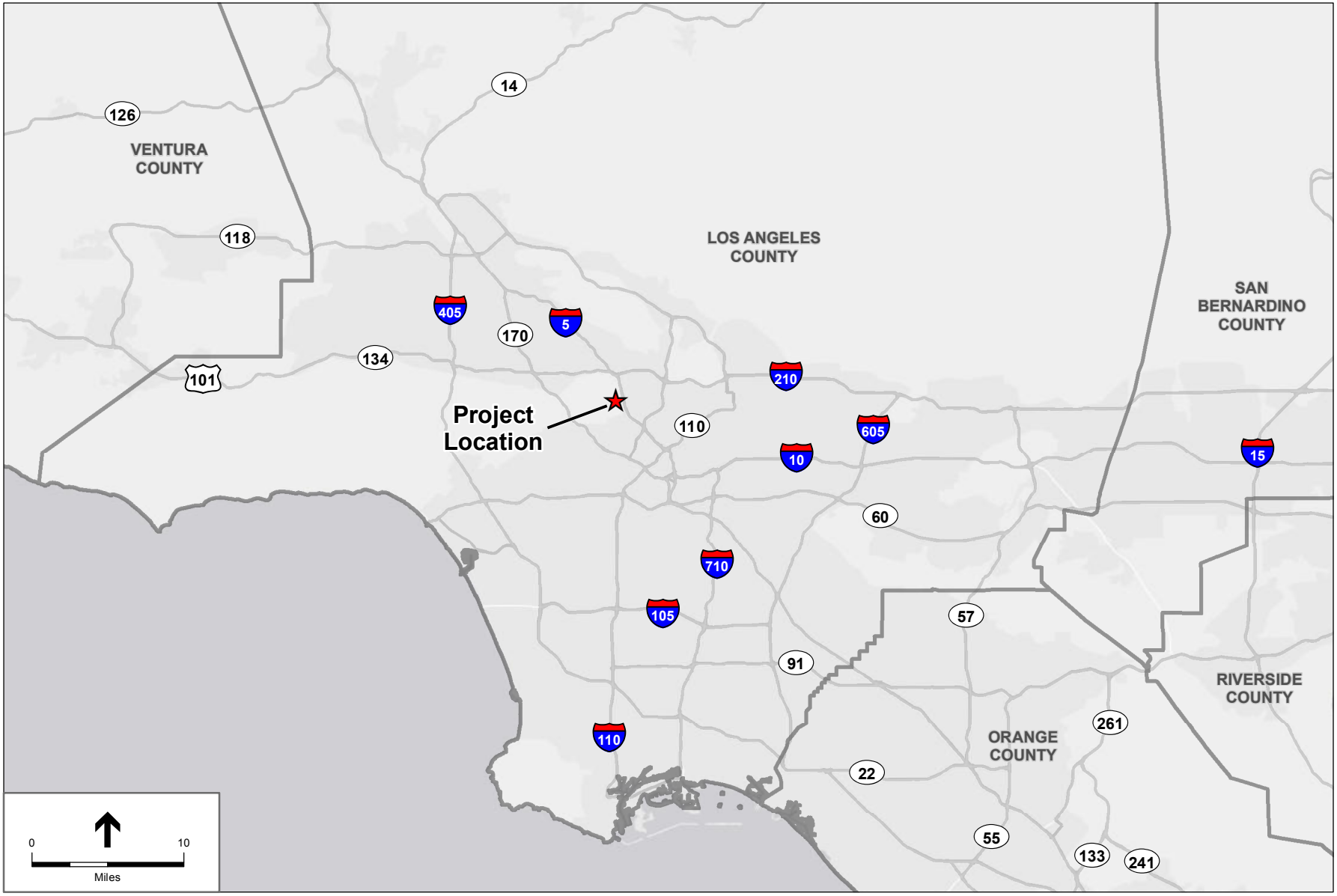
- 2,100 linear feet of 12-inch pipeline, connecting the Greenbelt Line to the proposed pump station east of Fire Road;
- 2,500 linear feet of 12-inch pipeline from the proposed horizontal directional drilling (HDD) launching pit to the HDD receiving pit near the proposed recycled water storage tank;
  - HDD is being used because trenching or excavating is not practical since it would result in significant biological and aesthetic impacts.
  - With use of HDD, most of the ground surface remains undisturbed, lessening the environmental impact of placing pipeline.
  - Trenchless technology protects natural resources such as sensitive habitats by drilling underneath the resources.
- 1,400 linear feet of 12-inch pipeline from the HDD receiving pit to the proposed recycled water storage tank;
- 700 linear feet of 12-inch pipeline from the proposed recycled water tank to the existing 1,200 linear feet 8-inch concrete pipeline, connecting to the Roosevelt Golf Course;
- 700 linear feet of 12-inch pipeline from the proposed recycled water tank to the existing 1,544 foot Grade Potable System to be used as a potable back-up pipeline;
- Recycled water pumping station located on the east side of Fire Road within LADWP easement;

- Steel recycled water storage tank with a capacity of 1 million gallons located southeast of the existing Tank 114;
- Removal of existing Tank 114 and;
- Appurtenant facilities for the pipelines.

Project Construction

The proposed pipelines would be installed using trenching construction techniques (cut and cover), except for the segment extending from Fern Canyon Nature Trail to the proposed recycled water tank. This segment would be installed using HDD method, which is a trenchless method of installing underground pipeline and has with minimal impact on the surrounding area (similar to tunneling). HDD is being proposed to avoid closing of the Fern Canyon Nature Trail and to prevent adverse visual and biological resources impacts at Griffith Park.

The proposed project would commence on January 02, 2014 and is anticipated to be completed by October 09, 2015. The project would be constructed in three separate phases, including the cut and cover pipeline phase, the HDD pipeline phase, and tank and pump station phase. Regional access to the construction site would be via I-5. Construction access to the various parts of the alignment would be via Crystal Springs Drive from the I-5, Western Heritage Way from SR-134, and Fire Road adjacent to Crystal Springs Drive in Griffith Park.



SOURCE: ESRI.

Griffith Park South Water Recycling Project . 211490.27

Figure 1

Regional Setting

Source: ESRI.

Griffith Park South Recycling Project. 211490.27

Figure 2

Project Vicinity

3. Regulatory Framework

The Project is subject to a number of federal, state, and local regulations regarding biological resources. A summary of the primary regulations pertaining to the proposed Project is provided below.

3.1 Federal

Federal Endangered Species Act

Under the federal Endangered Species Act (FESA), the Secretary of the Interior and the Secretary of Commerce jointly have the authority to list a species as threatened or endangered (16 USC 1533(c)). Pursuant to the requirements of FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed or proposed species may be present in the project region and determine whether the proposed project would have a potentially significant impact on such species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC 1536(3), (4)). Project-related impacts to these species or their habitats would be considered "significant." Section 7 of FESA contains a "take" prohibition which prohibits any action conducted, funded, or approved by a federal agency that adversely affects a member of an endangered or threatened species without prior formal consultation with the United State Fish and Wildlife Service (USFWS). Formal consultation with the USFWS would result in the issuance of a Biological Opinion (BO) that includes either a jeopardy or non-jeopardy decision issued by the USFWS to the consulting federal agency. The BO would also include the possible issuance of an "incidental take" permit. If such authorization is given, the project proponent must provide the USFWS with a Habitat Conservation Plan (HCP) for the affected species and publish notification of the application for a permit in the Federal Register.

Section 4(a)(3) and (b)(2) of the FESA requires the designation of critical habitat to the maximum extent possible and prudent based on the best available scientific data and after considering the economic impacts of any designations. Critical habitat is defined in section 3(5)(A) of the FESA as (1) areas within the geographic range of a species that are occupied by individuals of that species and contain the primary constituent elements (physical and biological features) essential to the conservation of the species, thus warranting special management consideration or protection, and (2) areas outside of the geographic range of a species at the time of listing but that are considered essential to the conservation of the species.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA), first enacted in 1918, domestically implements a series of treaties between the United States and Great Britain (on behalf of Canada), Mexico, Japan, and the former Soviet Union that provide for international migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds; the act provides that it shall be unlawful, except as permitted by regulations, "to pursue, take, or kill any migratory

bird, or any part, nest or egg of any such bird…" (16 USC 703). This prohibition includes both direct and indirect acts, although harassment and habitat modification are not included unless they result in direct loss of birds, nests, or eggs. The current list of species protected by the MBTA includes several hundred species and essentially includes all native birds. Permits for take of nongame migratory birds can be issued only for specific activities, such as scientific collecting, rehabilitation, propagation, education, taxidermy, and protection of human health and safety and personal property.

Waters of the United States, Including Wetlands

Wetlands are a subset of "waters of the United States" and receive protection under Section 404 of the Clean Water Act (CWA). The term "waters of the U.S." as defined in Code of Federal Regulations (33 CFR 328.3(a); 40 CFR 230.3(s)), includes all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters subject to the ebb and flow of the tide. Wetlands are defined by the federal government (CFR, Section 328.3(b), 1991) as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Waters of the U.S. do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the FCWA, the final authority regarding CWA jurisdiction remains with U.S. Environmental Protection Agency (EPA) (328.3(a)(8) added 58 FR 45035, August 25, 1993. The United State Army Corps of Engineers (Corps) regulates the discharge of dredged or fill material into waters of the U.S. under Section 404 of the CWA.

Clean Water Act

In accordance with Section 404 of the CWA, the Corps regulates discharge of dredged or fill material into waters of the U.S. Waters of the U.S. and their lateral limits are defined in 33 CFR 328.3(a) and includes navigable waters of the U.S., interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Waters of the U.S. are often categorized as "jurisdictional wetlands" (i.e., wetlands over which the Corps exercises jurisdiction under Section 404) and "other waters of the United States" when habitat values and characteristics are being described. "Fill" is defined as any material that replaces any portion of a water of the U.S. with dry land or that changes the bottom elevation of any portion of a water of the U.S. Any activity resulting in the placement of dredged or fill material within waters of the United States requires a permit from Corps. In accordance with Section 401 of the CWA, projects that apply for a Corps permit for discharge of dredged or fill material must obtain water quality certification from the appropriate RWQCB indicating that the proposed project would uphold State of California water quality standards.

3.2 State

State Fish and Game Codes

Section 2080 of the State Fish and Game Code states, "No person shall import into this state [California], export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the commission [State Fish and Game Commission] determines to be an endangered species or threatened species, or attempt any of those acts, except as otherwise provided in this chapter, or the Native Plant Protection Act, or the California Desert Native Plants Act." Pursuant to Section 2081 of the Code, the CDFW may authorize individuals or public agencies to import, export, take, or possess, any state-listed endangered, threatened, or candidate species. These otherwise prohibited acts may be authorized through permits or Memoranda of Understanding if: (1) the take is incidental to an otherwise lawful activity; (2) impacts of the authorized take are minimized and fully mitigated; (3) the permit is consistent with any regulations adopted pursuant to any recovery plan for the species; and (4) the applicant ensures adequate funding to implement the measures required by CDFW. The CDFW makes this determination based on available scientific information and considers the ability of the species to survive and reproduce. Due to the potential presence of state-listed rare, threatened, or endangered species on the project site, Sections 2080 and 2081 of the Code were considered in this evaluation.

Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders Falconiformes and Strigiformes), including their nests or eggs. Typical violations of these codes include destruction of active nests resulting from removal of vegetation in which the nests are located. Violation of Section 3503.5 could also include failure of active raptor nests resulting from disturbance of nesting pairs by nearby project construction. This statute does not provide for the issuance of any type of incidental take permit.

Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species. CDFW is unable to authorize incidental take of fully protected species when activities are proposed in areas inhabited by those species. CDFW has informed nonfederal agencies and private parties that they must avoid take of any fully protected species in carrying out projects.

California Endangered Species Act

Under CESA, the CDFW is responsible for maintaining a list of threatened and endangered species, candidate species, and species of special concern (California Fish and Game Code, 2007). Pursuant to the requirements of CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state listed endangered or threatened species may be present on the project region and determine whether the proposed project would have a potentially significant impact on such species. In addition, the CDFW encourages informal consultation on any proposed project that may impact a candidate species. If there were project-related impacts to species on the CESA threatened and endangered list, they would be considered

"significant." Impacts to "species of concern" would be considered "significant" under certain circumstances, discussed below.

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals. This section was included in the CEQA Guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on, for example, a candidate species that has not yet been listed by either the USFWS or CDFW. Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

Native Plant Protection Act

The Native Plant Protection Act (NPPA) includes measures to preserve, protect, and enhance rare and endangered native plants. The list of native plants afforded protection pursuant to the NPPA includes those listed as rare and endangered under the CESA. The NPPA provides limitations on take as follows: "No person will import into this State, or take, possess, or sell within this State" any rare or endangered native plant, except in compliance with provisions of the act. Individual landowners are required to notify the CDFW at least 10 days in advance of changing land uses to allow the CDFW to salvage any rare or endangered native plant material. Due to the absence of state-listed rare, threatened, or endangered plant species on the project site, the NPPA was not considered in this evaluation.

CEQA Guidelines Section 15380

Although threatened and endangered species are protected by specific federal and state statutes, *CEQA Guidelines* Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals. This section was included in CEQA primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on, for example, a candidate species that has not been listed by either USFWS or CDFW. Thus, CEQA provides an agency with the ability to protect a species from the potential impacts of a project until the respective government agencies have an opportunity to designate the species as protected, if warranted. CEQA also calls for the protection of other locally or regionally significant resources, including natural communities. Although natural communities do not at present have legal protection of any kind, CEQA calls for an assessment of whether any such resources would be affected, and requires findings of significance if there would be substantial losses. Natural communities listed by California Natural Diversity Database (CNDDB) as sensitive are considered by CDFW to be significant resources and fall under the *CEQA Guidelines* for addressing impacts. Local planning documents such as general plans often identify these resources as well.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act, waters of the state fall under the jurisdiction of the appropriate RWQCB. Under the act, the RWQCB must prepare and periodically update water quality control basin plans. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Projects that affect wetlands or waters must meet waste discharge requirements of the RWQCB, which may be issued in addition to a water quality certification or waiver under Section 401 of the CWA.

3.3 Local

Griffith Park is within Significant Ecological Area (SEA) under the Los Angeles County General Plan Conservation/Open Space Element. Native trees within the Project Area are protected under the city's protected tree ordinance. Both local regulations are discussed in detail below.

Los Angeles County General Plan

The Los Angeles County 2035 General Plan identifies the federal, state, and local statutes, ordinances, or policies that govern the conservation and protection of biological resources that must be considered by the County during the decision-making process.

The General Plan identifies six main types of biological resources to be protected and enhanced: regional habitat linkages; forests; coastal zone; riparian habitats; streambeds and wetlands; woodlands; and SEAs.

The General Plan outlines the following policies to protect biological resources within the County that are relevant to the Project.

Policies

Policy C/NR 3.1: *Conserve and enhance the ecological function of the County's diverse natural habitats and biological resources.*

Policy C/NR 3.4: *Conserve and sustainably manage the County's forests and woodlands.*

Policy C/NR 3.6: *Assist state and federal agencies with the preservation of special status species, their associated habitat and wildlife movement corridors through the administration of the SEAs and other programs.*

Policy C/NR 3.7: *Participate in inter-jurisdictional collaborative strategies that protect biological resources.*

Policy C/NR 3.8: *Discourage development in areas with identified significant biological resources, such as SEAs.*

Policy C/NR 3.9: *Consider the following in the design of a project that is located within an SEA, to the greatest extent feasible:*

- *Preservation of biologically valuable habitats, species, wildlife corridors and linkages;*

- *Protection of sensitive resources on the site within open space;*
- *Protection of water sources from hydromodification to maintain the ecological function of riparian habitats; and*
- *Placement of the development in the least biologically sensitive areas on the site.*

Policy C/NR 3.11: *Discourage new development from increasing the urban-wildland interface in undisturbed natural areas through compact design.*

Policy C/NR 4.1: *Conserve and sustainably manage the County's oak woodlands.*

City of Los Angeles General Plan

Ecologically important areas are generally considered as open space and shall be so designated. The following shall apply:

(a) To the extant feasible, ecologically important areas shall be kept in a natural state.

(b) In the event a project is proposed within an ecologically sensitive important area, an EIR shall be prepared.

(c) The construction of roads through ecologically important areas shall be closely controlled in order to protect these areas.

City of Los Angeles Protected Tree Ordinance

The City of Los Angeles Protected Tree Ordinance (No.177404) protects any of the following Southern California native tree species measuring 4 inches or greater in trunk diameter at 4.5 feet above ground level:

Oaks trees including valley oak (*Quercus lobata*) and California [coast] live oak (*Quercus agrifolia*), or any other tree of the oak genus indigenous to California but excluding the scrub oak (*Quercus dumosa*)

(a) Southern California black walnut (*Juglans californica* var. *californica*)

(b) Western Sycamore (*Platanus racemosa*)

(c) California bay laurel (*Umbellularia californica*)

These trees are protected from relocation or removal within the city limits. Relocation and removal includes any act that will cause a protected tree to die, including but not limited to acts that inflict damage upon the root system or other parts of the tree by fire, application of toxic substances, operation of equipment or machinery, or by changing the natural grade of the land by excavation or filling within the drip line of the canopy. Any work activities that will either directly (pruning, removal) or indirectly (grade alteration) impact protected trees within their drip line will require a permit to be issued by the Urban Forestry Division.

4. Methods

The information and analyses presented in this report have been derived from the following sources:

- CDFW California Natural Diversity Data Base (CNDDB) (CDFW, 2013a);
- CDFW State and federally listed endangered and threatened animals of California (CDFW, 2013b);
- California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2013);
- National Resources Conservation Service Web Soil Survey Database (NRCS 2013);
- United States Fish and Wildlife Service (USFWS) Species Reports (USFWS, 2012);
- Relevant literature on biological resources on and in the vicinity of the Project site;
- Topographic imagery and aerial photographs of the Project location and vicinity; and
- A biological resource reconnaissance and habitat assessment survey conducted on July 19th, 2013.

4.1 Biological Resource Reconnaissance and Habitat Assessment Survey

ESA biologists conducted a biological resource reconnaissance survey (or habitat assessment) to identify natural resources present or with the potential to occur on and adjacent to the Project site. Due to the extensive urban setting surrounding Griffith Park, the ESA biologist queried the CNDDB within a standard United States Geologic Survey 7.52Quadrangle, nine quad search and then assessed existing scientific data on whether populations of special status species are currently within Griffith Park. During the habitat assessment, biologists characterized and quantified on-site and adjacent plant communities and noted any wildlife species present during the site evaluation. The information obtained during the habitat assessment along with information gathered in the literature and database reviews were used to determine the potential for sensitive biological resources to occur within the Project site.

5. Natural Resource Setting

The Project site is located within Griffith Park at the east end of the Santa Monica Mountains northwest of the City of Los Angeles within Los Angeles County, California. The approximately 4,100 acre Griffith Park is surrounded by commercial and residential developments and is the largest municipal park and urban wilderness area within the United States (Cooper 2008). Specifically, Griffith Park is bounded to the east by the Golden State Freeway (Interstate Highway 5) and the City of Glendale and extensive commercial and residential development beyond; to the north by State Route (SR) 134; to the south by Los Feliz Boulevard, Hollywood Reservoir, Hollywood Freeway (Highway 101); and, to the west by Universal City, Highway 101, beyond which is the eastern extent of the Santa Monica Mountains. Griffith Park is situated

within Sections 26, 27, 34, 35, Townships 1N and 1S, Range 14W within the U.S.G.S. Hollywood and Burbank 7.5' series quadrangle maps.

5.1 Climate

The climate of Griffith Park is generally arid, with an average of 14.96 inches of rain per year recorded in Griffith Park (WRCC, 2012). The average annual maximum temperature in Los Angeles is 77.0° F, with an average annual minimum temperature of 43.0° F (WRCC, 2013).

5.2 Soils and Topography

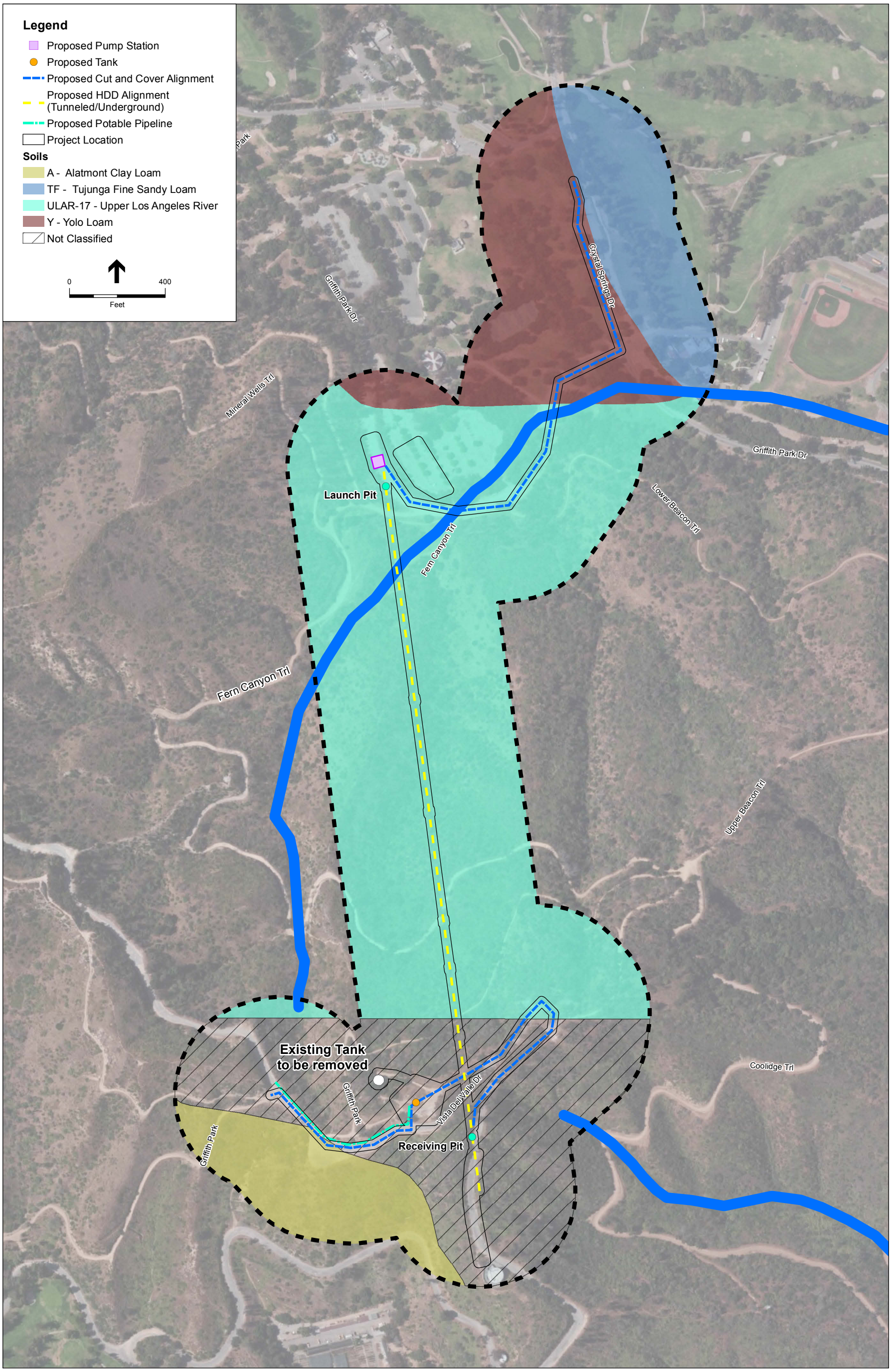
In general, the topography of the Project site slopes from south east to northwest (0-9 percent). Soils on the Project site are excessively drained to well drained, more than 48 inches in depth, with moderate in clay content, and moderately to highly permeable (NRCS, 2013). With the arid climatic regime of the region, these soils generally lack substantial amounts of organic material. Descriptions of the primary soil type found within the Project site is discussed below and are depicted on **Figure 3**.

Upper Los Angeles River

Upper Los Angeles River soils is composed of a brown to light-brown materials with a texture ranging from sandy loam to a loam, the greater part being a sandy loam. The depth varies from less than a foot to six or more feet; average is two to three feet.

Altamont Clay Loam

Altamont soils are on uplands, hills and mountains with a 0 to 75 percent slope. The Altamont clay loam can occur from 100 to 4,480 feet. These soils formed in material weathered from fine-grained sandstone and shale. Altamont clay loam is well drained with a medium to very high runoff; and low permeability.



SOURCE: Bing; Los Angeles County GIS, 2013.

Griffith Park South Water Recycling Project . 211490.27

Figure 3
Soils

Yolo Loam

Yolo soils are on nearly level to moderately sloping alluvial fans. The soils formed in fine-loamy alluvium derived from sedimentary formations. Yolo loam occurs from near sea level to 2400 feet. These soils are of moderate to high natural fertility and typically support wildlife and vegetation. Yolo loam is well drained with medium runoff and medium permeability levels.

5.3 Plant Communities and Habitats

Plant communities are assemblages of plant species that co-occur together within similar environmental conditions. They are defined by species composition and relative abundance. Plant communities within and surrounding the Project area were mapped according to the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). The distribution of habitat types of the Project site are shown in **Figure 4**.

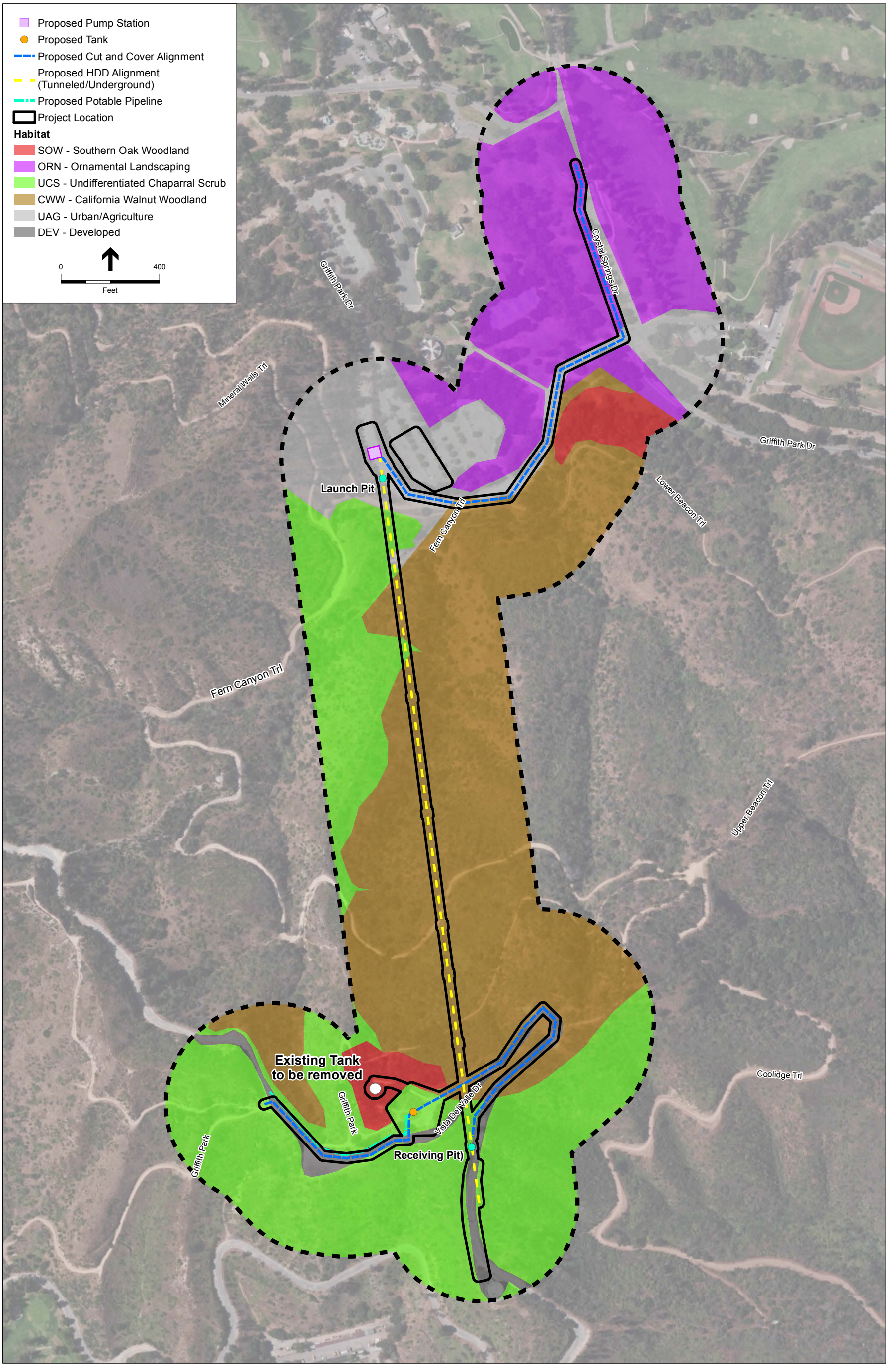
Three native plant communities are found within the limits of the Project site: Southern California black walnut woodland, undifferentiated chaparral scrub, and coast live oak woodland. Ornamental landscaping, as well as developed and urban-agriculture areas also exists within the Project area. The three native plant communities within the Project area show similar species composition, although dominance and cover vary significantly. The Southern California black walnut woodland and the undifferentiated chaparral scrub were impacted by the 2007 Griffith Park fire. The vegetation burned in 2007 is in varying degrees of recovery within the Project site, with the trees and shrubs recovering through epicormic or basal burl shoots. The plant communities found within the Project site are described below, including the disturbed areas.

Southern California Black Walnut Woodland

Southern California Black Walnut Woodland is the predominant vegetation community within the Project site (Figure 4). California Walnut Woodland is a forest form dominated by the Southern California black walnut (*Juglans californica* var. *californica*) with intermittently interspersed coast live oak (*Quercus agrifolia*). The canopy can be relatively open to continuous. The shrub layer is typically poorly developed with common shrub associates including elderberry (*Sambucus mexicana*), bush monkeyflower (*Mimulus guttatus*), and poison oak (*Toxicodendron diversilobum*). This community supports a relatively low diversity and cover of native annual herbaceous species, with the herbaceous understory typically dominated by annual grasses.

Undifferentiated Chaparral Scrub

Undifferentiated chaparral scrub is typically associated with shallow, dry soils at low elevations on xeric (dry habitat) slopes and ridges. Mature stands are dense and interwoven, reducing the understory component, and making physical access difficult. This chaparral subtype is located in exposed south or west facing slopes within the Project Site. Undifferentiated chaparral scrub is well-adapted to frequent burns due to the ability of many dominant shrubs to stump sprout. The dominant species include: black sage *(Salvia mellifera),* chamise *(Adenostoma fasciculatum),* toyon *(Heteromeles arbutifolia), and* greenbark ceanothus *(Ceanothus spinosus).*



SOURCE: Bing; CalVeg, 2013.

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Figure 4
Habitat Types

Coast Live Oak Woodland

Coast Live Oak Woodland is typically associated with mesic soils on north facing slopes and canyon bottoms. This woodland is located around the existing water tank. The dominant tree is coast live oak whose limited understory is dominated by annual grass species (*Avena*, *Bromus* sp.). No removal of Coast Live Oak trees is required for removal of the existing water tank.

Ornamental Landscaping

Ornamental landscaping generally exists within the parkways and landscaped areas in Griffith Park that are available for public use. Typical species noted in the landscaping that are native to California include California sycamore (*Platanus racemosa*), toyon (*Heteromeles arbutifolia*), and coast live oak (*Quercus agrifolia*). Non-natives trees that were noted within the landscaping include the Aleppo pine (*Pinus halapensis*), red river gum (*Eucalyptus camaldulensis*), European olive (*Olea europeana*), and Australian silk oak (*Grevillea robusta*). Common shrubs and groundcovers includes non-native ornamental species such as African fortnight lily (*Dietes bicolor*), New Zealand flax (*Phormium tenax*), and lantana (*Lantana camara*). It should be noted that dozens of other species are present within the landscaped areas that are within proximity to the Project site.

Disturbed / Developed / Urban-Agriculture

Disturbed areas are associated with existing facilities, parking lots and access roads (both paved and unpaved) (Figure 4). As described by Holland (1986), disturbed habitats are those that have been physically affected and are no longer recognizable as a native or naturalized plant community, but still maintain an active soil substrate. Species composition is typically dominated by non-native forbs and a limited number of grass species. Soils are variable, although they often lack topsoil due to previous disturbance. Common species include thistles (*Centaurea, Carduus,* and *Cynara* spp.) and mustards (*Brassicaceae*).

5.4 Wildlife

Wildlife species observed or expected to occur on the Project site are typical for the coastal range foothills. Reptile species common to the area include western whiptail (*Aspidoscelis tigris*), western fence lizard (Sceloporus occidentalis), side-blotched lizard (*Uta stansburiana*), gopher snake (*Pituophis catenifer*), coachwhip (*Masticophis flagellum*), and western diamondback (*Crotalus atrox*). Mammals species typically found within or adjacent to the Project site include California ground squirrel (*Spermophilus beechyi*), Audubon's cottontail (*Sylivagus audubonii),* mule deer (*Odocoileus hemionus*), gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), and coyote (*Canis latrans*). Bird species typically associated with the habitat types found within the Project area include mourning dove (*Zenaida macroura*), California quail (*Callipepla californica*), common raven (*Corvus corax*), red tailed hawk (*Buteo jamaicensis*), and wrentit (*Chamaea fasciata*); however, dozens of other resident and migratory bird species are expected to occur within the project vicinity. The only amphibian expected to occur within the Project area is

the arboreal salamander (*Aneides lugubris*), a species not dependent on a seasonal body of water for reproduction.

5.5 Special-Status Species

Special – status species are plant or wildlife species that are experiencing population declines within their respective ranges within California as a result of urbanization, agriculture, and industrial development. State and federal agencies; particularly the USFWS, CDFW, and CNPS; have listed a number of wildlife and plant species as threatened, endangered, or otherwise vulnerable to decline. Provided below in **Table 1** and **Table 2** are a list of special-status wildlife species and plant species, respectively, that have been previously recorded to the CNDDB and CNPS within the nine quad survey area from the Project site. Maps depicting the approximate location of special-status wildlife species and plant species with recorded occurrences within a USGS nine quad buffer of the Project site are provided in **Figures 5-1 and 5-2** and **Figures 6-1 and 6-2,** respectively.

TABLE 1
SPECIAL-STATUS WILDLIFE SPECIES DOCUMENTED IN PROJECT AREA

Species	Status: Federal/State	Preferred Habitat	Probability of Occurrence in Project Area
Amphibians			
Coast range newt (*Taricha torosa*)	-/Species of Special Concern	Chaparral, oak woodland, and grasslands. Requires ponds, reservoirs, and sluggish pools in streams for breeding,	Unlikely: Suitable breeding habitat Is not present within one mile of the project vicinity.
Reptiles			
Silvery legless lizard (*Anniella pulchra pulchra*)	-/Species of Special Concern	Occurs in moist warm loose soil with plant cover. Occurs in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Leaf litter under trees and bushes in sunny areas often indicate suitable habitat. Occurs from sea level to around 5,900 ft.	High: Suitable habitat is present within the oak woodland and chaparral communities, particularly where there is a layer of leaf litter present. .
Coastal whiptail (*Aspidoscelis tigris stejnegeri*)	-/Species of Special Concern	Found in a variety of ecosystems, primarily hot and dry open areas with sparse foliage - chaparral, woodland, and riparian areas.	High: Suitable habitat Is present within the project vicinity. A survey of Cahuenga Peak in Griffith Park in 2009 found individuals within the scrub habitat that is similar to the habitat onsite.

Species	Status: Federal/State	Preferred Habitat	Probability of Occurrence in Project Area
Coast horned lizard (*Phyrnosoma blainvilli*)	-/Species of Special Concern	Inhabits open areas of sandy soil and low vegetation in valleys, foothills and semiarid mountains from sea level to 8,000 ft. (2,438 m) in elevation. Found in grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose soil. Often found in lowlands along sandy washes with scattered shrubs and along dirt roads, and frequently found near their primary food source harvester ant hills.	High: Suitable habitat is present within the project vicinity. A survey of Cahuenga Peak in Griffith Park in 2009 found a relict population existing within the scrub habitat that is similar to the habitat onsite.
Birds			
Burrowing owl (*Athene cunicularia*)	-/Species of Special Concern	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. A subterranean nester dependent upon burrowing mammals, particularly the California ground squirrel.	Unlikely: Suitable habitat Is not present within the project vicinity.
Southwestern willow flycatcher *(Empidonax traillii extimus)*	Endangered/Endangered	Prefers dense vegetation throughout all vegetation layers present in riparian areas. Prefers nesting over or in the immediate vicinity of standing water.	Unlikely: No suitable habitat present on site or in the vicinity of the Project site.
Coastal California gnatcatcher (*Polioptila californica californica*)	Threatened/Species of Special Concern	Open sage scrub with California sagebrush as a dominant or co-dominant species. Nest placement typically in areas with less than 40 percent slope gradient. Gullies and drainages, when available within territory, used as nest sites. Use proportional to shrub species availability: typically California sagebrush, California buckwheat, California sunflower (*Encilia californica*), broom baccharis (*Baccharis sarothroides*), and laurel sumac.	Unlikely: Only marginal foraging habitat is available within 1 mile of the Project site. The project site is isolated from other dispersal sites of gnatcatcher by extensive urban development.
least Bell's vireo *(Vireo bellii pusillus)*	Endangered/Endangered	Prefers dense, low, shrubby vegetation, generally within early successional stages in riparian areas with a dominance of willows (*Salix* spp.)	Unlikely: No suitable habitat present on site. The nearest recorded occurrence is at the native portions of the Los Angeles River containing riparian habitat located to the east of Griffith Park.

Species	Status: Federal/State	Preferred Habitat	Probability of Occurrence in Project Area
Mammals			
Western Mastiff bat (*Eumops perotis californicus*)	-/Species of Special Concern	Open, semi-arid to arid habitats including conifer and deciduous woodlands, coastal scrub, chaparral. Roosts in crevices in cliff faces, high buildings, trees and tunnels.	Moderate: Moderately suitable foraging habitat exists within the vicinity of the Project site. Suitable roosting habitat (crags and artificial structures)(nearby structures) exists within the vicinity of the Project site; however, no potential roost sites are located within the proposed limits of disturbance for the Project. There are no recorded occurrences within one mile of the Project site.
Silver haired bat (*Lasionycteris notivagans*)	-/- Western Bat Working Group Listed	A solitary, tree-roosting species that is common in forested areas. The species typically hibernates in small tree hollows, beneath sections of tree bark, in buildings, rock crevices, in wood piles, and on cliff faces.	Moderate: Suitable foraging habitat exists within the vicinity of the Project site. Potential roosting habitat is present within the existing trees occurring in the Project site. No recorded occurrences within one mile of the Project site.
Hoary bat (*Lasiurus cinereus*)	-/- Western Bat Working Group Listed	A solitary species that utilizes diverse forest habitats that contain a mixture of forest and small openings that provide edge habitat. Roosting sites include squirrel nests, woodpecker holes, and out in the open on the trunks of trees, Both breeding and solitary adults prefer older trees for roosting 11.5 to 40 feet above the ground. Roosting preferences include dense vegetation above with unobstructed space below, allowing bats to drop to gain flight and no potential perches beneath, which could aid detection by birds or other animals. Dark-colored ground cover is preferred	Low: Suitable foraging habitat exists within the vicinity of the Project site. However, no potential roosting habitat is present in the existing trees on site. No recorded occurrences within the vicinity of the Project site.

Species	Status: Federal/State	Preferred Habitat	Probability of Occurrence in Project Area
Western yellow bat (*Lasiurus xanthinus*)	-/Species of Special Concern	Species occurs in a variety of habitats including riparian, arid scrublands and deserts, and forests. The species roosts singly or in groups of up to 15 in trees including *Populus fremontii, Quercus agrifolia*, and the frond skirts of *Washingtonia* palms.	Unlikely: Suitable foraging habitat exists within the vicinity of the Project site. Potential roosting habitat is present in the existing trees on site surveys. However, the species is almost exclusively associated with *Washingtonia* palms for roost sites in California (Bolster 1998). No recorded occurrences within the vicinity of the Project site.
Big free-tailed bat (*Nyctinomops macrotis*)	-/Species of Special Concern	A migratory species that forms maternity colonies in rock crevices and caves that are typically used long term. Big free-tailed bats roost mainly in crevices and rocks in cliff situations, with occasional roosts occurring in buildings, caves, and tree cavities.	Unlikely: Suitable foraging habitat exists within one mile of the Project Site but no roosting or maternity caves occur in the vicinity for this species.
American badger (*Taxidea taxus*)	-/ Species of Special Concern	Most abundant in drier, open stages of most shrub, forest, and herbaceous habitats with friable soils. Requires open, uncultivated ground and sufficient burrowing rodent prey.	Unlikley: Suitable habitat is not present within the vicinity of the Project site. The Urban area around Griffith Park limits the foraging ability of this wide ranging species.

Definitions

Unlikely: Habitat is unsuitable for the species and is not expected to occur within or adjacent to the project area
Low: Marginal habitat is present but the species is not anticipated to occur with any regularity
Moderate: Moderate quality habitat is present and there are records of species within the CNDDB for the area
High: Suitable habitat is present for the species with the recent records near the project site.
Present: The species was sighting within or adjacent to the project site

Table 2 includes a list of rare and special-status plants that have been recorded in the region of the Project site and that have a potential to be present. Table 2 briefly describes the habitat suitability required for each plant species.

TABLE 2
RARE PLANTS WITH POTENTIAL TO OCCUR IN PROJECT AREA

Species	Status/CNPS Rank	Growth Habit	Elevation (m)	Habitat	Flowering Period
Berberis nevinii Nevin's barberry	Federal Endangered, State Endangered/ 1B	Evergreen shrub	274-825	Chprl,CoSr,CMwld	March-June
Calochortus clavatus var.gracilis Slender mariposa lily	-/1B.2	Perennial bulbiferous herb	320-1000	CoSr, Chprl,VFG	March-June
Calochortus plummerae Plummer's mariposa lily	-/1B.2	Perennial bulbiferous herb	100-1700	CoSr, Chprl,VFG,CMwld (rocky granitic outcrops)	May-July
Centromadiaparryi ssp. australis Southern tarplant	-/1B.1	Annual herb	50-790	CoSr, Chprl,VFG	April-July
Dudleya multicaulis Many stemmed dudleya	-/1B.2	perennial herb	50-790	CoSr, Chprl,VFG	April-July
Horkelia cuneata ssp. puperula Mesa horkelia	-/1B.1	perennial herb	70-810	Chprl,CoSr,CMwld	February-September
Malacothamnus davidsonii Davidson's bush-mallow	-/1B.2	Perennial deciduous shrub	185-855	Chprl,CoSr,CMwld	June-January

CNPS Status
Rank 1B = Plants Rare, Threatened, Endangered in California and elsewhere

Threat ranks
.1 = seriously Endangered in California
.2 = fairly Endangered in California

Habitat
Chprl = Chaparral, , CMWld = Cismontane Woodland, CoScr = Coastal Scrub, RiWld = Riparian Woodland, VFG = Valley and Foothill Grasslands,

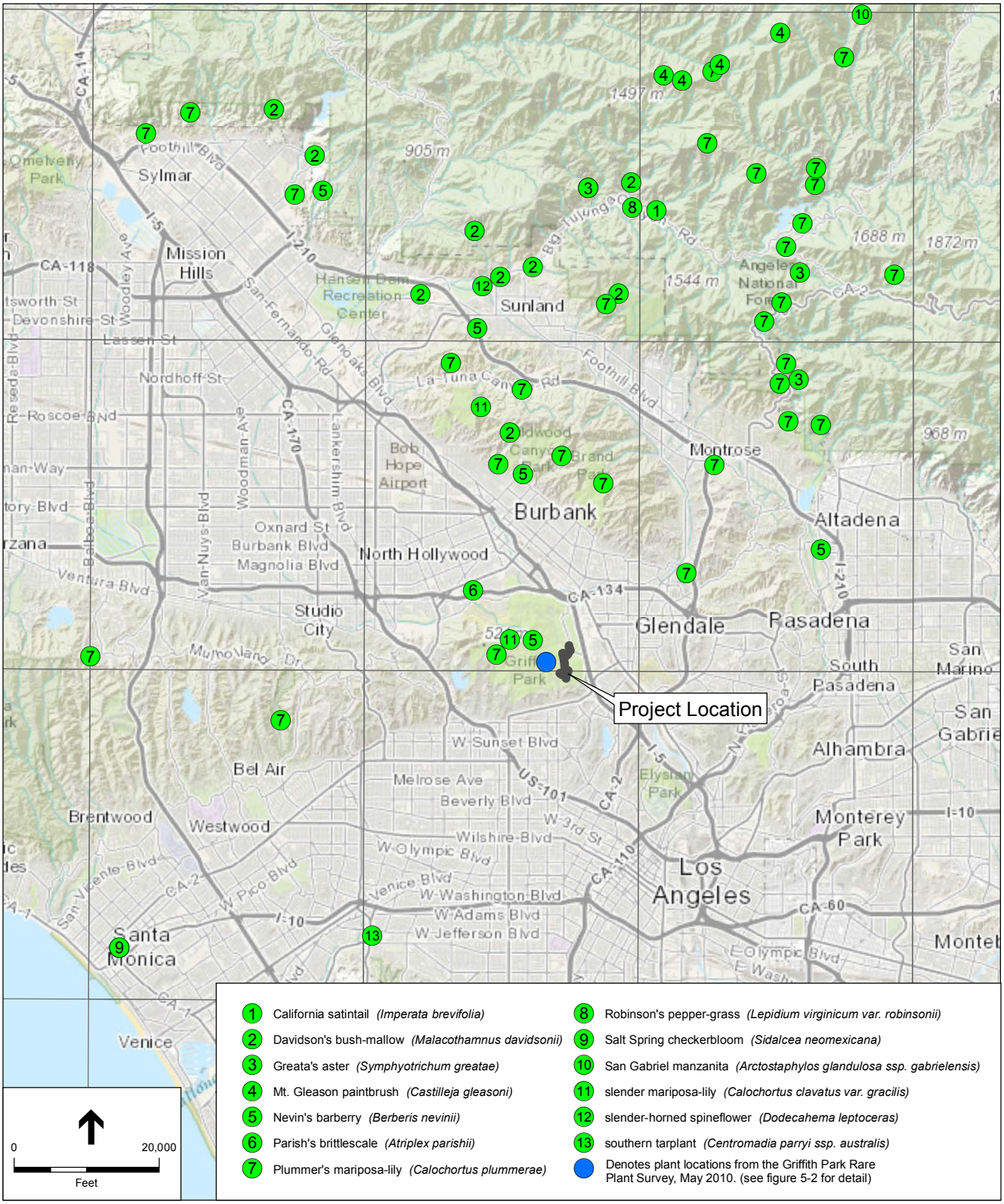
5.6 Natural Communities of Special Concern

Certain natural communities are afforded special status as identified in local or regional plans, policies, or regulations, or designated by the CDFG and USFWS. A literature review and CNDDB 9 quad search revealed that the only natural community within the Project area is Southern California Black Walnut Woodland.

5.7 Connectivity and Migration Corridors

Habitat linkages are contiguous areas of open space that connect two larger habitat areas. Linkages provide for both diffusion and dispersal for a variety of species within the landscape. In addition, linkages can serve as primary habitat for some smaller species. Corridors are linear linkages between two or more habitat patches. Corridors provide for movement and dispersal, but do not necessarily include habitat capable of supporting all life history requirements of a species (Cooper 2008).

Griffith Park has become increasingly isolated from the rest of the Santa Monica Mountain Range, the Los Angeles River, and the low elevation habitat remnants within the LA basin, due to construction of the Highway 134, Interstate 5, and Highway 101; the channelization of the Los Angeles River and its tributaries; as well as the intensive urbanization that surrounds the park. Although some species have disappeared from the landscape, midsize mammals with large home ranges such as the coyote, gray fox, and mule deer still maintain populations within the park. Additionally, the Pacific Flyway, a large migration route used by numerous bird species that pass throughout large portions of California, is within the vicinity of the Project area. Terrestrial migratory birds such as warblers and sparrows have the potential to be present in the vicinity of the Project site during spring and fall migration periods.



Source: California Natural Diversity Database (CNDDB);
Griffith Park Rare Plant Survey, May 2010.

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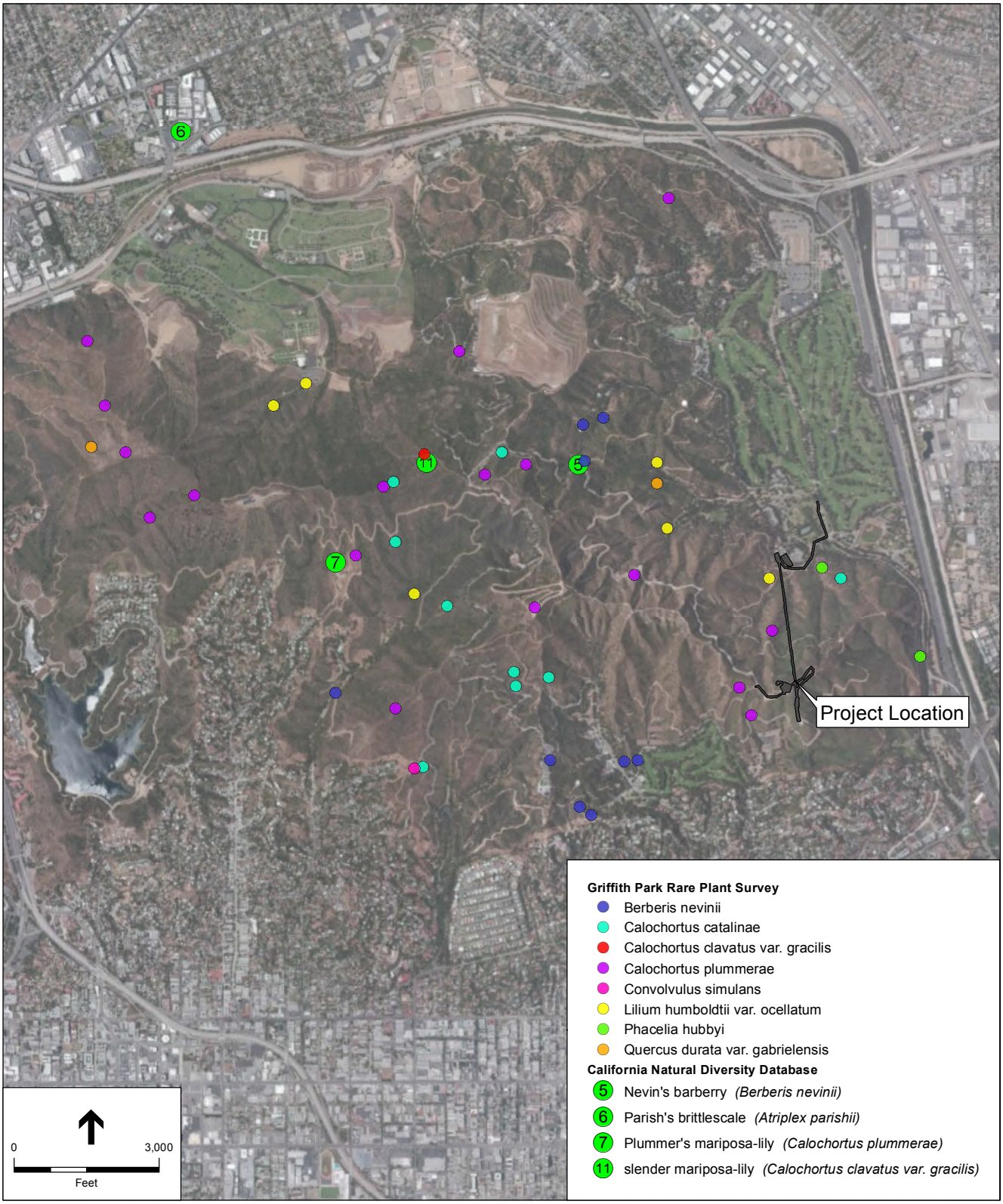
Figure 5-1

CNDDB Special Status Plant Species Occurrences
9 USGS Quad Search Area



Source: California Natural Diversity Database (CNDDB);
Griffith Park Rare Plant Survey, May 2010.

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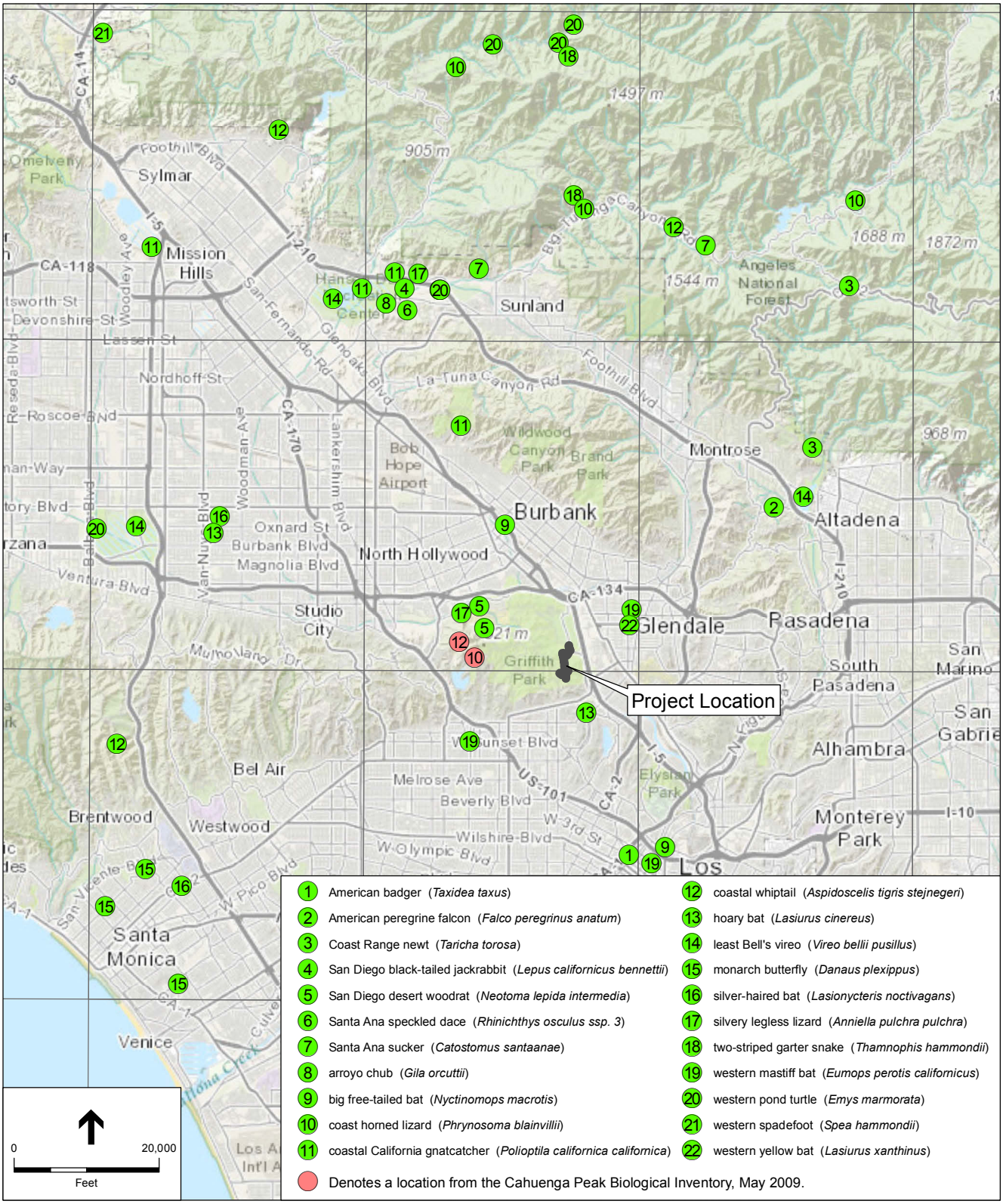
Figure 5-2

Griffith Park Plant Occurences



Source: California Natural Diversity Database (CNDDB); Cahuenga Peak Biological Inventory, May 2009..

Figure 6-1

CNDDB Special Status Wildlife Species Occurrences
9 USGS Quad Search Area

Source: California Natural Diversity Database (CNDDB);
Cahuenga Peak Biological Inventory, May 2009.

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Figure 6-2

Griffith Park Wildlife Occurences

6. Results

6.1 Special-Status Wildlife Species

This section describes the special-status wildlife species that are known, or have a moderate to high potential to occur in the Project area and the status of their presence based on the field reconnaissance and documented references. Several common wildlife species have been recorded on the Project site; the coast horned lizard, silvery legless lizard, coastal whiptail, western mastiff bat, and the silver haired bat are special-status species with a moderate or greater potential to occur within the Project site.

6.1.1 Coast Horned Lizard, Coastal Whiptail, and Silvery Legless Lizard

According to a biological inventory report prepared for the Trust for Public Land, the coast horned lizard has recently (2009) been confirmed as a rare resident on high ridges of Griffith Park and Cahuenga Peak, where it formerly (until the 1970s) occurred throughout the park's lower slopes and canyons (Cooper, 2009). The coast horned lizard has become extremely rare in the greater Los Angeles metropolitan region, having been extirpated from the entire coastal plain and most of the San Fernando and San Gabriel Valleys. A combination of broad scale habitat modification and the displacement of native harvester ants by non-native Argentine ants have been implicated in declines within Los Angeles County. The coastal whiptail has been found in the upper portions of Griffith Park in open, sparsely vegetated areas. Both reptile species have the potential to occupy portions of the project site.

6.1.2 Bats

The western mastiff, silver haired, and hoary bat were found to have moderate potential to utilize the Project site for foraging while the silver haired and hoary bat have potential to utilize the trees within the project site for breeding. The western mastiff bat is typically considered a cliff-dwelling species, and is known to roost in large maternal colonies. The species is widespread throughout much of western North America, with declines concentrated in the Los Angeles basin. Western mastiff bats will utilize large boulders and buildings as roosting habitat. The species typically forages at a much higher altitude than other species, and is known to range considerable distances from roosting locations during evening foraging. Potentially suitable foraging habitat exists within the general vicinity of the Project site, particularly in the mixed scrub and walnut woodland. No roosting habitat is present within the Project site. The silver-haired and hoary bats are solitary species that roost in a variety of tree species for both roosting and reproduction. These tree roosting species have a moderate potential for roosting on oak, walnut, and Australian silk oak trees within the Project Site.

6.2 Special-Status Plants

Based on the database search results (Table 2), the five species with the potential to occur are perennial species. Two species are perennial herbs; two are bulbiferous perennials, and one a semideciduous shrub. Plummer’s mariposa lily and the slender mariposa lily are two bulbiferous

perennials that have known occurrences in Griffith Park (Cooper, 2009). Davidsons' bush mallow is a rare semideciduous perennial shrub that has a moderate potential to occur within the Project site; however, no bush mallow was observed during the site reconnaissance. The precipitation levels for the 2012-2013 rainy season were below average in Southern California and all the plants with a moderate or greater potential to occur would be either drought deciduous or would have bloomed earlier in the season under these drier than average environmental conditions.

6.3 Jurisdictional Waters

Based on the desktop analysis and the reconnaissance survey conducted by ESA biologists on July 19, 2013, no jurisdictional drainages occur within or adjacent to the Project site.

6.4 Project Impacts

Construction of the proposed Project could impact plants and wildlife in a variety of ways such as road mortality, burrow collapses, and habitat alteration/removal. Construction activities could result in direct mortality or displacement of wildlife through habitat loss and could directly impact special status species. The use of access roads for maintenance operations could also result in the direct injury or mortality of wildlife species. Under the stipulations of CEQA, potential impacts to biological resources could be considered significant if actions associated with the Project:

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 CDFW or USFWS.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations, or by the CDFW or USFWS.

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

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.

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

f) Conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan.

6.4.1 Loss of Habitat

Direct impacts as a result of construction activities associated with the proposed Project would include the permanent removal and temporary disturbance of native vegetation that is utilized by both common and rare wildlife, and increased noise levels due to equipment operations occurring

in these areas. Indirect impacts to habitat could include alterations to hydrological regimes such as runoff and percolation, increased erosion and sediment transport, and the introduction of non-native and invasive weeds.

The Project will potentially impact 0.59 acres of Southern California black walnut woodland, 1.29 acres of chaparral scrub, and 0.24 acres of coast live oak woodland (see **Figure 7-1** and **7-2**). **Table 3** below provides a breakdown of anticipated impacts to habitat from Project activities.

TABLE 3
PROJECT IMPACTS TO HABITAT

Plant Community/Habitat type	Impacts (acres)
Southern California black walnut woodland	0.59
Undefined coastal chaparral	1.29
Coast live oak woodland	0.24
Ornamental landscaping	0.64
Developed/Urban-Agriculture	1.80/2.38
TOTAL	**6.94**

As shown in Table 3, project activities are not expected to result in a substantial loss of sensitive habitat that would affect the ability of species to disperse and persist throughout the Project area and the surrounding habitats. This is due to the Project primarily utilizing existing roads and developed/urban-agriculture areas for the installation of Project components. In addition, use of the HDD method for the construction of the proposed pipeline significantly reduces impacts to sensitive biological resources by avoiding direct impacts to the habitat.

SOURCE: Bing.

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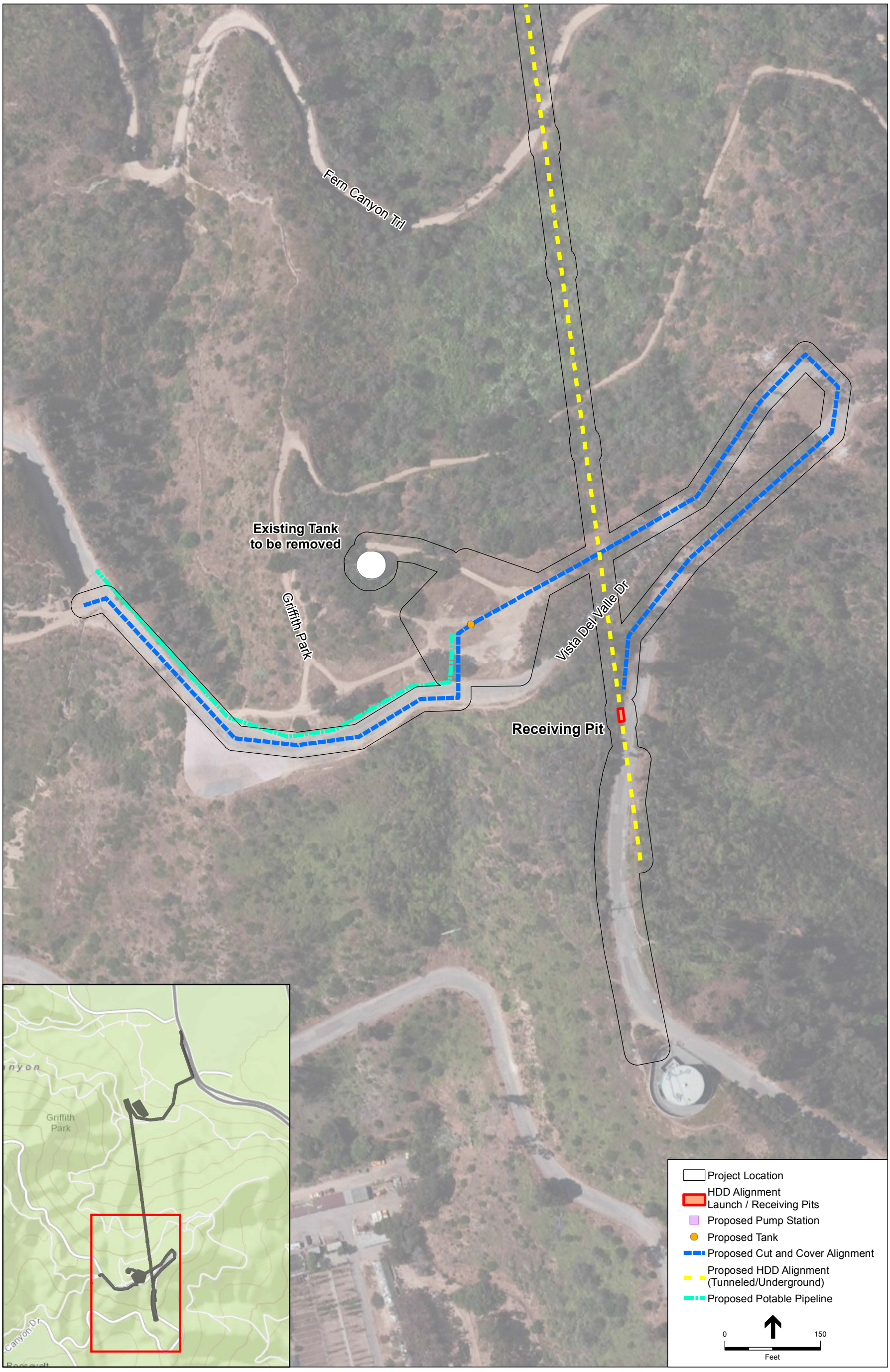
Figure 7-1
Impacts



SOURCE: Bing.

Griffith Park South Water Recycling Project . 211490.27

Figure 7-2
Impacts

6.4.2 Nesting Birds

Direct mortality of, small to medium sized avian species would not likely occur during construction of the Project. However depending on the timing of construction, eggs and nestlings of bird species with small, well-hidden nests could also be subject to loss, which would result in a violation of the MTBA and Fish and Game Code. Impacts to nesting birds would result primarily through direct and indirect disturbances such as through habitat clearing, earth removal, grading, digging, and equipment movement. However, direct impacts to trees are not anticipated. In addition, project activities are not expected to result in a substantial loss of sensitive habitat that would affect the ability of species to disperse and persist throughout the Project area and the surrounding habitats. As shown in Table 3, project activities are not expected to result in a substantial loss of sensitive habitat due to the Project primarily utilizing existing roads and developed/disturbed areas and the use of the HDD method for the installation of Project components. Implementation of the mitigation measures that are recommended in **Section 6.5** would reduce the potential for injury or mortality of nesting birds during construction through construction timing, establishment of nesting buffers, and worker environmental training.

Potential Significance: Disturbances to nesting birds during construction activities could produce direct and indirect impacts. These impacts would be reduced to levels less than significant with implementation of the mitigation measures outlined in **Mitigation Measure 6.5.2,** Nesting Birds.

6.4.3 Special-Status Wildlife Species

6.4.3.1 Reptiles

The Project site contains suitable scrub and woodland habitat for the coast horned lizard, coastal whiptail, and the silvery legless lizard. However, no impacts will likely occur to these species during Project activities because the majority of habitat impact is to disturbed and/or developed areas where these species are less like to be present. In addition, during mobilization of construction equipment, reptile species within the area would likely disperse due to increased noise level. With implementation of mitigation measures recommended in Section 6.5, such as preconstruction clearance surveys and post construction revegatation, it is unlikely that these species will be impacted during project construction activities.

Potential Significance: Direct impacts to special status reptile species could occur due to project implementation. These impacts would be reduced to less than significant levels with the implementation of mitigation measures as outlined in Section 6.5.

6.4.3.2 Bats

Although the Project site contains suitable roosting habitat for hoary and silver-haired bats, it is unlikely that these species would be impacted by Project implementation because the Project will be restricted by mitigation measures provided in Section 6.5, that prohibits tree trimming activities during the bat breeding season from March to August. Additionally, potential roosting sites may occur within the trees found within the Project site; however, no direct impact to oak, walnut, and Australian silk oak trees are anticipated to be removed by the proposed project.

Potential roosting habitat for the western mastiff bat can be found within existing buildings and crags adjacent to the Project site in Griffith Park. Potential roost sites would not be impacted by Project activities because no existing buildings and crags would be impacted by the project. The project includes removal of the existing water tank and replacement with a larger recycled water tank in the same general area. Therefore, if the existing water tank was used as a potential roosting site, the tank would be replaced for a similar use at project completion. With implementation of mitigation measures recommended in Section 6.5, these potential roosting sites will be identified prior to project implementation and implementation of mitigation would reduce impacts to less than significant levels.

Potential Significance: Direct impacts to western mastiff bat are not expected to occur because the Project will not impact potential roosting habitat. Construction for the project will be limited primarily to the existing roads and other facilities. Direct impacts to the tree roosting species (hoary, silver-haired bat) will be minimized by conducting any pruning activities outside of the breeding season for bats as specified by CDFW. Implementation of mitigation would reduce impacts to less than significant levels.

6.4.4 Special-Status Plant Species, Protected Trees, and Natural Communities

No special-status plant species were found within the Project site during the habitat assessment. However, focused surveys for special status plants were not conducted. Due to the below average rainfall in 2012-2013 rainfall season, the drought deciduous species (multistemmed dudleya, mesa horkelia, and Plummer's mariposa lily) may not have been prevalent during the habitat assessment. Southern California black walnut woodland was identified within the Project site during the habitat assessment. The Southern California black walnut woodland within and adjacent to the Project site contained two tree species protected by the City Tree Protection Ordinance; coast live oak and southern California black walnut.

Potential Significance: Project elements as well as the access roads contain or are adjacent to suitable habitat for five special status plants as well as an undetermined number of City protected trees. Coast live oaks and Southern California black walnut are found surrounding the existing water tank proposed to be removed. An evaluation of each individual tree was not conducted during the habitat assessment. However, the Project would not remove these trees as part of the tank removal; no impact to these protected trees would occur during Project implementation.

6.5 Mitigation Measures

6.5.1 Loss of Habitat

Project construction activities will occur primarily on developed access roads and previously disturbed areas, and will disturb approximately 0.59 acres of California walnut woodland, 1.29 acres of chaparral scrub, and 0.24 acres of coast live oak woodland. Because there are specific areas within the construction footprint that contain native plant communities, the following mitigation measure is recommended to reduce potential impacts from the removal of native habitat during construction activities:

- Prior to the clearing or removal of native habitat, the first six inches of soil shall be salvaged or stockpiled for reuse once construction activities are completed. Once construction is completed, areas within the project footprint that clear or remove native habitat and that are no longer required to be kept clear of vegetation shall be revegetated with salvaged soil and locally sourced material, as approved by the project biologist. The restored habitat areas will be monitored for one year subsequent to the cessation of project activities to ensure the reestablishment of native habitat.

6.5.2 Nesting Birds

A number of resident and seasonal bird species have the potential to nest on the Project site in trees and adjacent vegetation. The following mitigation measures are recommended to reduce potential impacts to nesting birds during construction activities:

- If construction is scheduled to occur during the non-nesting season (September through January 31), no preconstruction surveys or additional measures are recommended. If construction is scheduled to occur during the breeding season (February 1–August 31), it is recommended that a qualified wildlife biologist conduct preconstruction surveys of all potential nesting habitats within 500 feet of construction activities. At least one surveys should be conducted no more than 3 days prior to construction activities.
- If active nests are found, no-disturbance buffers shall be implemented around each nest based on the species and location of the nest as determined by a qualified biologist. A general buffer distance generally includes 500-feet around any confirmed active raptor nest and a 250-foot buffer around nests of passerine bird species protected in accordance with the MBTA and/or Fish and Game Code. The buffers should be implemented until it is determined by a qualified wildlife biologist that young have fledged and the nest is determined to be inactive.

6.5.3 Special-Status Wildlife Species

Special-status wildlife species such as the coast horned lizard, coastal whiptail, the silvery legless lizard, hoary and silver-haired bats may occur within scrub and woodland habitat and within the trees. Therefore, the following mitigation measures are recommended:

- Construction activities shall be minimized to the greatest extent feasible in the construction area to minimize potential impacts to special status wildlife species including, reptiles and roosting bats.
- Prior to ground disturbing activities within scrub and woodland habitat, a qualified biologist shall conduct pre-construction clearance surveys. If any ground dwelling species are identified within proposed construction zones, they shall be captured and/or moved beyond the construction zone in neighboring scrub and woodland habitat.
- Tree trimming activities shall be conducted during the non-breeding season for hoary and silver-haired bats (March – August). If tree trimming activities need to be conducted during bat breeding season, a qualified biologist shall conduct a bat survey of the affected trees. Tree trimming shall not be allowed if trees have active bat roosts.

6.5.4 Special-Status Plant Species, Protected Trees, and Natural Communities

6.5.4.1 Special Status Plants

Special-status plant species such as the Mesa horkelia may occur in openings within black walnut woodland. Additionally, Slender mariposa lily and Plummer's lily may occur along exposed ridgelines and clearings in undifferentiated chaparral scrub. There is a potential for Davidson's bush mallow to occur in clearings on mesic slopes and canyon bottoms. Therefore, the following mitigation measures are recommended:

- Every effort should be made to minimize vegetation removal and permanent loss at the Project construction site. In order to minimize disruption to special-status plant habitat, the construction contractor shall utilize existing parking lots and disturbed roadways for construction staging areas.
- Prior to the implementation of Project construction activities, a qualified botanist shall identify whether any mesa horkelia or other sensitive plant species are present within the proposed Project footprint. If any plant or suitable habitat for the plant is present, the biologist will assist in avoiding impacts to the greatest extent feasible, by staking and flagging areas to be avoided by construction activities.

6.5.3.2 Protected Trees

The presence of protected trees shall be considered during Project construction activities including the creation of staging areas, as well as trenching, staging areas and demolition. The following mitigation measures are recommended to avoid impacts to protected trees with the project area:

- A qualified arborist shall be present to identify and demarcate protected trees (and its protected zones [i.e., driplines]) within the entire Project site that have the potential to be impacted by construction activities and to assist in guiding construction activities to avoid or minimize impacts to protected trees.
- Situate all project elements including trenching paths, on existing access routes or within the clearing outside of the drip lines of protected trees to the greatest extent feasible to prevent damage to protected trees.
- If any impacts to city protected trees are unavoidable, then the qualified arborist shall assist in processing a permit application with the City of Los Angeles Urban Forestry Division. In such circumstances, a permit shall be obtained prior to performing any project activities that may impact a protected tree.

6.5.4 Worker Environmental Awareness Program

- The Project proponent should provide Worker Environmental Awareness Program (WEAP) training to all personnel working on the site during Project construction with a qualified biologist. The training shall include a pre-construction meeting that would review all special-status plants, protected wildlife and protected trees within the Project

site to promote their awareness and to review mitigation measures for avoiding impacts, and all responsible parties.

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APPENDIX B
Paleontological Investigation

PALEO SOLUTIONS
Paleontological and Archaeological Compliance and Consulting Services

PALEONTOLOGICAL INVESTIGATION REPORT OF THE LOS ANGELES DEPARTMENT OF WATER AND POWER GRIFFITH PARK SOUTH WATER RECYCLING PROJECT, LOS ANGELES, CALIFORNIA

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August 12th 2013

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1.0 Introduction

Paleo Solutions, Inc (Paleo Solutions) was subcontracted to Environmental Science Associates (ESA), who was contracted by the Los Angeles Department of Water and Power (LADWP) to conduct a archival-level paleontological investigation and resource study in support of the Griffith Park South Water Recycling Project (Project). LADWP proposes to design and construct a 1 million gallon tank, 5,600 feet of new pipeline, and a new 1,400 gallons-per-minute (gpm) pump station.

This Paleontological Investigation Report (PIR) documents Paleo Solutions' efforts to identify the presence of previously recorded and previously undocumented paleontological localities within the Project area, and to determine the paleontological sensitivity of the Project area and whether paleontological resources would be impacted by the Project. The scope of Paleo Solutions' work included analysis of the museum records search, geologic map review, and a literature search.

This report complies with the California Environmental Quality Act (CEQA) and is consistent with accepted professional standards established for paleontological resource impact mitigation by the Society of Vertebrate Paleontology (2010), and sensitivity guidelines based on the Bureau of Land Management's widely accepted Potential Fossil Yield Classification which provides a more precise classification approach that allows for finer-tuned distinctions in the sensitivity of formations.

1.1 Project Location and Description

This Project is located in the City and County of Los Angeles, California. It is located in the eastern portion of Griffith Park, a natural area east of Interstate 5, south of Highway 134, and east and northeast of Highway 101 (Figure 1). Further Project information, including depths of impact, was not available for this analysis as of the date of this report.

1.2 Regulatory Context

California Environmental Quality Act (CEQA)

CEQA encourages the protection of all aspects of the environment by requiring state and local agencies to prepare multidisciplinary analyses of the environmental impacts of a proposed project, and to make decisions based on the findings of those analyses.

CEQA includes in its definition of historical resources "any object [or] site …that has yielded or may be likely to yield information important in prehistory" (14 CCR 15064.5[3]), which is typically interpreted as including fossil materials and other paleontological resources. More specifically, destruction of a "unique paleontological resource or site or unique geologic feature" constitutes a significant impact under CEQA (State CEQA Guidelines Appendix G). CEQA does not provide an explicit definition of a "unique paleontological resource," but a definition is implied by comparable language within the act relating to archeological resources: "The procedures, types of activities, persons, and public agencies required to comply with the California Environmental Quality Act (CEQA) are defined in the *Guidelines for Implementation of CEQA* (State CEQA Guidelines), as amended on March 18, 2010 (Title 14, Section 15000 et seq. of the California Code of Regulations [i.e., 14 CCR Section 15000 et seq.) and further amended January 4th, 2013. One of the questions listed in the CEQA Environmental Checklist is: "Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" (State CEQA Guidelines Section 15064.5 and Appendix G, Section V, Part C).

Figure 1. Location of the Los Angeles Department of Water and Power Griffith Park South Water Recycling Project.

Treatment of paleontological resources under CEQA is generally similar to treatment of cultural resources, requiring evaluation of resources in the project area; assessment of potential impacts on significant or unique resources; and development of mitigation measures for potentially significant impacts, which may include monitoring, combined with data recovery excavation and/or avoidance.

California Public Resources Code

The State of California Public Resources Code (Chapter 1.7), Section 5097.5 and 30244, includes additional state level requirements for the assessment and management of paleontological resources. These statutes require reasonable mitigation of adverse impacts to paleontological resources resulting from development on state lands, define the removal of paleontological "sites" or "features" from state lands as a misdemeanor, and prohibit the removal of any paleontological "site" or "feature" from state land without permission of the applicable jurisdictional agency. Section 30244 requires reasonable mitigation for impacts on paleontological resources that occur as a result of development on public lands.

Los Angeles County General Plan: Conservation and Open Space Element

The County of Los Angeles General Plan Conservation and Open Space Element (1980) contains goals and policies regarding paleontological resources. The Conservation and Open Space Element establishes the goals of preserving and protecting sites of historical, archaeological, and scientific values, and defines the following policies relative to paleontological resources:

- Protect cultural heritage resources, including historical, archaeological, paleontological, and geological sites;
- Encourage public use of cultural heritage sites consistent with the protection of these resources;
- Promote public awareness of cultural resources; and
- Encourage private owners to protect cultural resources.

City of Los Angeles General Plan Conservation Element

The City of Los Angeles General Plan Conservation Element (2001), in Section 3, specifies the protection of paleontological resources; this section indicates that it is the policy of the City of Los Angeles that the City's paleontological resources be protected for historical, cultural research, and/or educational purposes. It also mandates the identification and protection of significant paleontological sites and/or resources known to exist or that are identified during "land development, demolition, or property modification activities."

2.0 Methods

2.1 Records and Literature Review

Information concerning known and potential paleontological resources in the Project vicinity was assembled from published literature, geologic maps, museum records, and online resources. Searches of known published and unpublished locality records held by University of California Museum of Paleontology (UCMP) were obtained and are appended to this report (Appendix A). A records search from the Los Angeles County Natural History Museum was obtained specifically for this Project by ESA (Appendix B).

Online resources included the UCMP online database, MioMap (MioMap, 2013), geological and paleontological publications, and U.S. Geological Survey and California Geological Survey geologic maps.

The search area for fossil locality museum records encompassed the region surrounding the Project because the presence of paleontological resources within the same formations outside of the Project area

indicates the potential for occurrences within the Project area. Individual searches of the UCMP database for each formation that is present within the Project area were completed in order to determine the relative abundance of fossils and the types of fossils that could be found within the Project area and their scientific importance. Locality numbers from the UCMP database are provided in Appendix A.

3.0 Paleontological Background

3.1 Paleontological Significance

As defined by Murphey and Daitch (2007): "Paleontology is a multidisciplinary science that combines elements of geology, biology, chemistry, and physics in an effort to understand the history of life on earth. Paleontological resources, or fossils, are the remains, imprints, or traces of once-living organisms preserved in rocks and sediments. These include mineralized, partially mineralized, or unmineralized bones and teeth, soft tissues, shells, wood, leaf impressions, footprints, burrows, and microscopic remains. Paleontological resources include not only fossils themselves, but also the associated rocks or organic matter and the physical characteristics of the fossils' associated sedimentary matrix.

The fossil record is the only evidence that life on earth has existed for more than 3.6 billion years. Fossils are considered non-renewable resources because the organisms they represent no longer exist. Thus, once destroyed, a fossil can never be replaced. Fossils are important scientific and educational resources because they are used to:

- Study the phylogenetic relationships amongst extinct organisms, as well as their relationships to modern groups;
- Elucidate the taphonomic, behavioral, temporal, and diagenetic pathways responsible for fossil preservation, including the biases inherent in the fossil record;
- Reconstruct ancient environments, climate change, and paleoecological relationships;
- Provide a measure of relative geologic dating that forms the basis for biochronology and biostratigraphy, and which is an independent and corroborating line of evidence for isotopic dating;
- Study the geographic distribution of organisms and tectonic movements of land masses and ocean basins through time;
- Study patterns and processes of evolution, extinction, and speciation;
- Identify past and potential future human-caused effects to global environments and climates."

Fossil resources can vary widely in their relative abundance and distribution, and not all are generally regarded as significant. Vertebrate fossils, whether preserved remains or trackways, are classed as significant by virtually all state and federal agencies and professional groups that have addressed the question (PRC 5097.5; Society of Vertebrate Paleontology, 2010) and are specifically protected under the California Public Resources Code. In some cases, fossils of plants or invertebrate animals ("noteworthy occurrences of invertebrate or plant fossils," [Bureau of Land Management Manual 1998]) are also considered significant and can provide important information about ancient local environments. Assessment of significance is also subject to CEQA's criterion that the resource constitutes a "unique paleontological resource or site." A significant paleontological resource is considered to be of scientific interest if it is a rare or previously unknown species, it is of high quality and well-preserved, it preserves a previously unknown anatomical or other characteristic, provides new information about the history of life on earth, or has an identified educational or recreational value. Paleontological resources that may be

considered not to have scientific significance include those that lack provenience or context, lack physical integrity because of decay or natural erosion, or that are overly redundant or are otherwise not useful for research. Vertebrate fossil remains and traces include bone, scales, scutes, skin impressions, burrows, tracks, tail drag marks, vertebrate coprolites (feces), gastroliths (stomach stones), or other physical evidence of past vertebrate life or activities (Society of Vertebrate Paleontology, 2010).

The full significance of fossil specimens or fossil assemblages cannot be accurately predicted before they are collected; and in many cases, before they are prepared in the laboratory and compared with previously collected material. Pre-construction assessment of significance associated with an area or formation must be made based on previous finds, characteristics of the sediments, and other methods that can be used to determine paleoenvironmental conditions.

3.2 Paleontological Potential

A separate issue is the potential of a given area or unit of sediment to include fossils. Information that can contribute to assessment of this potential includes:

1. The existence of known fossil localities or documented absence of fossils nearby and in the same geologic unit (e.g. "Formation" or one of its subunits);
2. Observation of fossils within the project vicinity;
3. The nature of sedimentary deposits in the area of interest, compared with those of similar deposits known elsewhere (size of particles, clasts and sedimentary structures conducive or non-conducive to fossil inclusion) that may favor or disfavor inclusion of fossils; and
4. Sedimentological details, and known geologic history, of the sedimentary unit of interest in terms of the environments in which the sediments were deposited, and assessment of the favorability of those environments for the probable preservation of fossils.

3.3 Approach to Resource Assessment

The geologic units from maps of the area were analyzed for their potential paleontological sensitivity based on existing literature and known localities. The applied criteria for sensitivity rankings are discussed fully in Appendix C. The Bureau of Land Management's Potential Fossil Yield Classification (PFYC) system was used for this Project, as it allows for a very precise level of sensitivity classification between units of the same formation.

Each formation within the Project area was assigned a level of sensitivity based on previous work in the area, LACM recommendations, and known fossil localities from the geologic units and fossils involved. The sensitivities are, from highest to lowest, very high (PFYC Class 5) to very low (PFYC Class 1).

4.0 Geological and Paleontological Context

4.1 Geological Context

In the general Project area, sedimentary rocks and surficial deposits range in age from the Miocene (Monterey Formation) to Recent/Holocene (Quaternary alluvium, Quaternary gravels, Quaternary landslide). Geologic depositional environments within the Project area were a mixture of terrestrial and shallow marine until the late Miocene when the oceans receded and faulting caused uplift, and the land took on the general modern configuration. Pleistocene to Recent deposits in the Project vicinity all have been deposited on land, mostly as alluvial fans.

All of the sedimentary rocks in this area were originally laid down as horizontal strata. Subsequent tectonic forces, including faulting due to the emergence of the San Andreas Fault system have folded and faulted the layers, uplifting and fracturing units and configuring them in the complex system of faults and folds that can be seen in the area today.

During Jurassic and Cretaceous times, the western margin of what is now the United States was an active margin, comprised of the Farallon Plate subducting under the North American plate. As the Farallon Plate was drawn under the North American plate, portions of the sea floor were accreted onto the margin of the North American Plate. As subduction slowed, and the oceans receded and advanced between Cretaceous and Oligocene times, both terrestrial and oceanic sediments were deposited in what is now known as Los Angeles. Beginning in the middle to late Oligocene, active subduction of the Farallon Plate began to cease, and the San Andreas Fault began to form. This changed the character of motions and uplifts in the Los Angeles area, and led to significant faulting in the area as stresses changed on the rocks. Finally, from the Oligocene to the Holocene, the San Andreas Fault became the dominant tectonic regime we know today, and the depositional regime changed from mainly oceanic to almost exclusively terrestrial (Stoffer, 2002).

4.2 Project Area Geology and Paleontology

The distribution of paleontological resources, or fossils, correlates directly with the geology of an area under investigation. The abundance and types of paleontological resources in an area are dictated by paleoenvironmental conditions, depositional environments, as well as taphonomic and diagenetic processes. Sedimentary rocks units (formations and members thereof) are defined by identifying physical characteristics that are generally similar throughout their geographic extent, reflecting consistent environmental conditions during their deposition. Therefore, these units also tend to be comparable in their fossil content throughout their extent, and their likelihood for containing significant fossils may be broadly predicted (BLM, 2008, 2009). However, some past environmental conditions and changes, such as faulting, metamorphism, or erosion, may have affected organisms or their preservation potential. Fossil frequencies often vary considerably in their concentration in various strata even within the same geologic unit.

The Project corridor trends through moderate to steep relief hills and canyons comprised of Cretaceous age igneous rocks (granodiorite and quartz diorite), Miocene age Monterey Formation, and Quaternary landslide deposits (Dibblee, 1991). The low-lying northern portion of this Project, adjacent to Griffith Park Drive consists entirely of Quaternary alluvium (Dibblee, 1991). The Miocene aged Topanga Formation lies just outside the Project boundaries to the northwest, and may shallowly underlie the Quaternary alluvium. The distribution of these units within the Project area can be seen in Figure 2.

Cretaceous granodiorite and quartz diorite (grd, qd)

Cretaceous granodiorite and quartz diorite are intrusive, igneous rock units characterized by a light grey to tan color, and contain a varying amount of plagioclase feldspar crystals interspersed with fine, black biotite mica and quartz (with quartz being dominant over the feldspar in the quartz diorite unit) (Dibblee, 1991). These units are found along the western and central areas of the Project. These units, formed deep underground at high temperatures, are not suitable for the incorporation or preservation of paleontological resources, and has a very low sensitivity (PFYC Class 1).

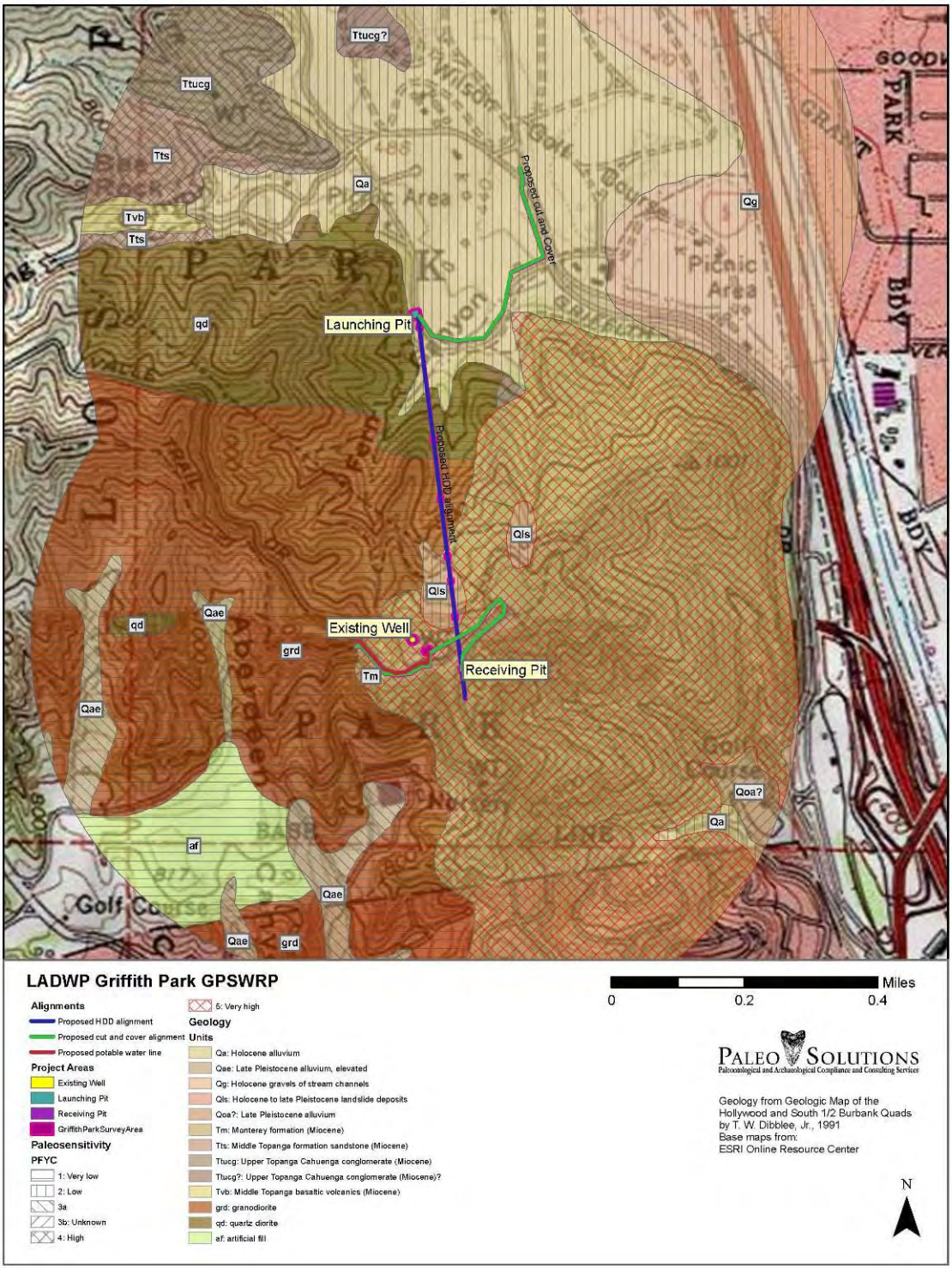

Figure 2. Geology and Paleontologic Sensitivities for the Griffith Park South Water Recycling Project, based on Dibblee, 1991.

Topanga Formation (Tts, Ttucg)

The Miocene Topanga Formation is present throughout the Los Angeles Basin. In this area, this unit it comprised of light-colored sandstones, shale and siltstones, and conglomerate beds composed of granitic debris (Dibblee, 1991). The formation contains abundant marine fossils ranging from shark teeth to sea shells and microfossils. It was deposited during the Early to Middle Miocene in a shallow, warm sea. Parts of the Topanga Formation are composed of distorted oyster shells and some single-celled amoeboid protists. Invertebrate fossils have been found in the Topanga Formation in the Griffith Park area (Paleo Solutions, 2013) - however, they are poorly preserved casts and shells and thus not significant. Larger animals including *Desmostylus* (an extinct herbivorous marine mammal) have been found in this formation. The LACM reports no fossils found from within the Project boundaries in this formation; however, three localities from the Topanga Formation were reported north of the Project site (Paleo Solutions, 2013). These localities, several miles away from the project, produced specimens of mako shark, giant grouper, and sea cow. Six fossil localities from the UCMP were located in Los Angeles County in this formation, four invertebrates (gastropods and marine shells), one plant, and one vertebrate (*Desmostylus*) (Appendix A). These units are found outside the Project area, but indicate the potential for similar occurrences in bedrock underlying the Quaternary alluvium in the northern portion of the Project area. Sediments of this formation have the potential to contain significant non-renewable paleontological resources and, therefore, have high paleontological sensitivity (PFYC Class 4).

Topanga basaltic volcanics (Tvb)

The Middle Topanga basaltic volcanics unit is found in a small outcrop just outside the the Project area. This igneous unit is associated with the Topanga Formation. However, due to its igneous nature, it does not preserve fossils, and has a very low paleontological sensitivity (PFYC Class 1).

Monterey Formation (Tm)

The Miocene Monterey Formation is generally composed of a light-colored siliceous shale, chalky in areas, and it weathers to a white color. This formation has yielded some of California's finest vertebrate, invertebrate, and plant fossils in other locations. Throughout its statewide distribution, the Monterey Formation has produced a high diversity of very well preserved, mostly marine vertebrates, invertebrates, and terrestrial plants. This formation is one of the most important and paleontologically sensitive units in the state of California, as its fine grain and depositional environment make it eminently suitable for the exceptional preservation of fossils, including items that are not normally preserved, such as shark bones and vertebrae (cartilage), and marine plants, as well as unique and scientifically important assemblages such as whale falls (the community of creatures that scavenge and populate the area around a whale carcass on the sea floor) (Pyenson and Haasl, 2007). Unique finds in this formation include well preserved fossil whales and dolphins, as well as large numbers of finely preserved crabs and leatherback turtles. Arguably some of the most important finds, however, are the kelps and other large soft-bodied seaweeds, which are seldom found as fossils elsewhere (Kleinpell, 1938; Parker and Dawson, 1965; Garrison and Douglas, 1981; Finger, 1992). The UCMP reports no fossils from this unit from within the

Project area, however 42 localities, mostly microfossils (plankton), have been documented in this unit in Los Angeles County, along with vertebrate specimens of *Desmostylus*, birds, and toothed whales (Appendix A). The nearest LACM localities on record in this formation are approximately two miles south, from the Metropolitan Transportation Authority (MTA) Red Line Metro Rail excavations, which produced a large number of fossil fish, including needlefish, shad, herring, lanternfish, jacks, croakers, tuna, sea bass and grouper, smelts, extinct deep-sea fish, bristlemouths and hatchetfish (Appendix C). The next nearest sites produced a holotype (new species) of herring in Elysian Park, a baleen whale in Mt. Washington, a locality neat the Southwest Museum and Interstate 110 that produced fossil bony fish, and a locality in Lincoln Heights that produced a holotype specimen of baleen whale (LACM, 2013). The Monterey Formation is found in the southern portion of the Project. The Monterey Formation has the

potential to contain significant nonrenewable paleontological resources and has very high paleontological sensitivity (PFYC Class 5).

Quaternary Older Sediments (Qoa, Qae)

Quaternary older alluvium and elevated alluvium (early to late Pleistocene) consist of poorly consolidated mudstones, sandstones, and cobble to boulder conglomerates deposited in ancient streams and channels. These deposits vary in thickness from a few feet to as much as 200 feet (Oakeshott, 1958). This alluvium was deposited in a terrestrial environment during the Middle to Late Pleistocene. Although no fossils are recorded in the older alluvial units within the Project area, similar deposits from other locations in southern California have produced significant remains of Pleistocene megafauna (e.g., ground sloth, saber-tooth cat, mammoth, and mastodon) as well as smaller animals (birds, reptiles, rodents, rabbits, and amphibians (Jefferson, 1991), and this formation is well known throughout the Los Angeles Basin as well as southern California for producing excellent examples of Pleistocene fauna. These sediments are not found under the Project components, however, they may be encountered during the Project if access roads or other groundmoving activities occur in the southern half of the Project area. Quaternary older sediments have moderate paleontological sensitivity (PFYC Class 3).

Young Quaternary Sediments (Qa and Qg)

Young Quaternary sedimentary units include Holocene age alluvial valley gravel, sand and clay deposits (Qa) and channel gravel and sand deposits (Qg). These sediments consist primarily of gravel, sand, and silt associated with the Santa Clara River and its tributaries (Oakeshott, 1958). Quaternary alluvium is underlain by marine to terrestrial deposits of Tertiary to Cretaceous age (Oakeshott, 1958). Due to the recent age of these deposits and their close associate with modern drainages, any animal or plant remains preserved within the Quaternary alluvium are too young to be considered paleontological resources. These units are found along the access road on the canyon floor, but may shallowly cover other, more sensitive units. Deposits mapped as Quaternary younger alluvium produced fossil specimens near Atlantic Avenue and Interstate 710, including fish, salamander, lizard, snake, rabbit, pocket mouse and gopher, from 11 to 34 feet below the surface (LACM, 2013). Young Quaternary sediments have low paleontological sensitivity (PFYC Class 2).

Landslide Debris (Qls)

Quaternary landslide debris deposits consist of re-distributed sediments, derived from portions of alluvium and/or rock that underwent slope failure. Landslide units often exhibit a jumbled structure when compared to the more ordered *in situ* portions of the sedimentary units from which they are derived. However, sedimentary structures such as laminations, bedding, and ripples have been observed in units mapped as landslide deposits. Although paleontological resources may be preserved in these units, it is important to recognize that these deposits are generally reworked and not *in situ*. The nature of these sediments inhibits the understanding of important contextual data for any fossil discovered within it. This formation is found in a brief section of the southern portion of the Project. This unit has low paleontological sensitivity (PFYC Class 2).

5.0 Results

5.1 Records and Literature Search Results

UCMP records include six previously recorded fossil localities in the Topanga Formation in Los Angeles County, and 42 from within the Monterey Formation, though none of these were found within the Project area itself. The LACM reports no fossil localities from within the Project area, though several significant localities from both Quaternary Alluvium and the Monterey Formation have been found within five miles

of the Project boundaries. MioMap shows no fossil localities within or adjacent to the Project in any formation. No mention of fossils from within the Project boundaries or in a 1 mile radius of this Project were discovered in any published literature.

Existing geologic maps covering portions of the Project vicinity are those of Thomas W. Dibblee Jr., (Dibblee, 1991; scale 1:24,000). These maps were used to create geologic and paleontological resource potential maps of the Project area presented in this report (see Figure 2). Tables 1and 2 contain the paleontological sensitivities of each unit found within the Project area, as distributed under linear pipeline section (see Table 1) and Project component (see Table 2).

5.2 Paleontological Sensitivity

Table 1. Paleontological Sensitivity of Geologic Formations in the Project, Linear Pipeline Sections as Correlated on Figure2.

Linear Pipeline Section	Unit Abbreviation	Unit Description	Potential Fossil Yield Classification	Length (Meters)
Proposed cut and cover	qd	quartz diorite	1 (very low)	2
Proposed cut and cover	Qa	Quaternary alluvium	2 (low)	673
Proposed cut and cover	Tm	Monterey Formation (Miocene)	5 (very high)	680
Proposed HDD alignment	grd	granodiorite	1 (very low)	250
Proposed HDD alignment	qd	quartz diorite	1 (very low)	125
Proposed HDD alignment	Qa	Quaternary alluvium	2 (low)	179
Proposed HDD alignment	Qls	Holocene to late Pleistocene landslide deposits	2 (low)	155
Proposed HDD alignment	Tm	Monterey Formation (Miocene)	5 (very high)	221
Proposed potable water line	grd	granodiorite	1 (low)	4
Proposed potable water line	Tm	Monterey Formation (Miocene)	5 (very high)	228

Table 2. Paleontological Sensitivities of Geologic Formations in the Project, Well and Pit Components as Correlated on Figure 2.

Component	Unit Abbreviation	Unit Description	Potential Fossil Yield Classification	Square meters (approximate, surface dimensions)
Existing Well	Tm	Monterey formation (Miocene)	5 (very high)	147
Launching Pit	Qa	Quaternary alluvium	2 (low)	240
Receiving Pit	Tm	Monterey formation (Miocene)	5 (very high)	48

6.0 Conclusions and Recommendations

The literature search, museum records searches, and geologic review, identified paleontologically sensitive areas in the Project area (see Tables 1 and 2, and Figure 2). Ground disturbing work in any of the identified areas of moderate to very high paleontological sensitivity has the potential to adversely impact paleontological resources. Proposed measures to mitigate the potential impacts on paleontological resources are discussed below.

6.1 Recommendations

Paleo Solutions recommends the following mitigation measures be implemented to ensure environmental compliance of paleontological resources under CEQA:

PAL- 1 Pre-construction Mitigation Measures

In accordance with industry standards and local and state regulations, pre-construction mitigation, including the preparation of a Paleontological Resource Monitoring and Mitigation Plan (PRMMP) and pre-construction worker environmental awareness training, should take place to reduce impacts of the Project on paleontological resources to less than significant levels. This training should emphasize applicable state, federal, and local laws, and include information on what to do in case an unanticipated discovery is made by a worker. All construction personnel should be informed of the possibility of encountering fossils, and instructed to immediately inform the field supervisor if any bones or other potential fossils are unearthed in the Project area and a paleontological monitor is not present (for example, if a sensitive formation is encountered subsurface that is not mapped at the surface, thus not necessitating the presence of a paleontological monitor for this work). In such a case, workers should immediately cease all activity within a 20 foot radius of the discovery site and notify the Construction Manager.

PAL-2 Construction Monitoring

Monitoring of any construction excavations in areas of sensitive geologic formations is required. The project area contains deposits of the highly sensitive Miocene Monterey Formation (Table 1). Any earthmoving construction activities within these very high sensitivity sediments will require full-time paleontological monitoring. If the Topanga Formation is impacted during earthmoving full-time

monitoring is recommended. Paleontological monitoring of earthmoving activities will be conducted on an as-needed basis by the project paleontologist during all earthmoving activities that may expose sensitive strata. Earthmoving activities in areas of the project area where previously undisturbed strata will be buried but not otherwise disturbed will not be monitored. The project paleontologist or his/her assignee will have the authority to reduce monitoring once he/she determines the probability of encountering fossils has dropped below an acceptable level. No construction monitoring is recommended for geotechnical borings, as the width of augers generally used for these investigations is not sufficient to preserve paleontological resources for identification purposes.

PAL-3 Recovery of Fossils

When potentially scientifically significant fossil discoveries are made by paleontological monitors, they should quickly and professionally be explored and evaluated in order to minimize construction delays. Additional staff paleontologists should be brought to the site to assist with the salvage as needed, and to expedite the process. Salvages may consist of the relatively rapid removal of small isolated fossils from an active cut, to hand quarrying of larger fossils over several hours, to excavations of large fossils or large numbers of smaller fossils from a bone bed over several days. At each paleontological locality, data recorded should minimally include the field number, date of discovery and date of collection, geographic coordinates, elevation, formation, stratigraphic provenance, lithologic description of sediment that produced the fossil(s), type(s) of fossils and type(s) of element(s), taphonomic and paleoenvironmental interpretations, associations with other fossils, photograph(s), and collector(s). All fossils should be properly labeled prior to removal from the locality where they were discovered.

Scientifically significant fossils of microscopic size consisting of vertebrates, invertebrates, plants, or trace fossils may be identified during monitoring. The locations of these discoveries should be sampled and later screenwashed and picked in the paleontological laboratory in order to fully document the microfaunal or microfloral diversity. For a project of this size, it is recommended that a 2,000 to 6,000 pound matrix sample be quickly collected from the locality and removed from the immediate site locality in order to avoid impeding construction. The size of the sample should be based on the extent of the fossil-bearing horizon or deposit. Construction equipment can often expedite this process by assisting with the removal of matrix from the excavation and establishing a stockpile in an area away from construction equipment in order to permit the paleontological monitor to transfer the matrix from the stockpile to buckets and screen wash the sediments onsite for maximum efficiency.

PAL-4 Laboratory Preparation, Analysis, and Museum Curation

All fossils collected at the Project site should be removed to a secure paleontological laboratory for preparation to the point of identification and curation. Fossil preparation involves the removal of any sedimentary rock matrix or sediment from the fossil remains, treatment with archival chemical stabilizers, gluing of broken fragments, and construction of a supporting storage cradle as appropriate (mostly for large specimens). Preparation of small fossils may require the use of a binocular microscope. Fossil-rich concentrate from bulk matrix samples may require heavy liquid separation prior to picking under a microscope.

Following preparation, all fossils should be inventoried and identified to taxon and element by a technical specialist, as necessary. Identification should be to the lowest taxonomic level possible. All fossils should be labeled with field locality number, collector, date of collection, GPS coordinates in NAD-83 datum, elevation and depth of locality, taxon, and element description at a minimum. The fossil collection should then be analyzed taxonomically, taphonomically, and biostratigraphically, as appropriate, depending upon the nature of the fossil collection in order to accomplish the goals of the research design.

PAL-5 Final Paleontological Monitoring Report

All data, including the results of the analysis and research on the fossil collection, should be compiled along with the fossil specimen inventory and detailed paleontological locality forms, maps and photos for

inclusion in the paleontological mitigation report. The paleontological mitigation report should be prepared according in accordance with CEQA reporting specifications as well as industry standards and requirements, and submitted to the LADWP and the Los Angeles Natural History Museum. All fossils, along with a copy of the paleontological mitigation report and their deeds (which shall include daily logs and a final monitoring report with an itemized list of specimens found) should be delivered to the approved repository institution. The repository of choice for this area is the Los Angeles Natural History Museum, and a curation agreement from this institution is attached as Appendix D.

6.2 Conclusion

The Project area has been determined to contain several paleontologically sensitive geologic units. Construction activities in these areas have the potential to impact paleontological resources. Implementation of the mitigation measures discussed in this report will help ensure than the potential impact to paleontological resources is reduced to a less than significant level. Any data returned from the proposed geotechnical investigations for this Project should be forwarded to the Paleontological Principal Investigator in order to most accurately characterize the sediments that will be encountered during construction on the Project, and to ensure the most efficient paleontological monitoring.

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Appendix A University of California Museum of Paleontology Records Search

Locality Number	Locality Name	County	Period	Epoch	Formation	Type
A1166	Topango Canyon	Los Angeles County	Tertiary	Miocene	Topanga	Invertebrate
B7853		Los Angeles County	Tertiary	Miocene	Topanga	Invertebrate
D437	Topanga Canyon	Los Angeles County	Tertiary	Miocene	Topanga	Invertebrate
D5395	Topanga Canyon	Los Angeles County	Tertiary	Miocene	Topanga	Invertebrate
PB99030	LA Metrorail Red Line Aqua Vista/Chiquita	Los Angeles County	Tertiary	Middle Miocene	Topanga	Plant
V4909	Ione Drive	Los Angeles County	Tertiary	Miocene	Topanga	Vertebrate

Locality Number	Locality Name	County	Period	Epoch	Formation	Type
292	Point Fermin	Los Angeles County	Tertiary	Miocene	Monterey	Plant
12875	Wilson Cove, San Clemente Island	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
12876	Wilson Cove, San Clemente Island	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
12877	Wilson Cove, San Clemente Island	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
12878	Wilson Cove, San Clemente Island	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
12879	Wilson Cove, San Clemente Island	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
12880	San Clemente Island	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
12881	San Clemente Island	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
12882	San Clemente Island	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
12883	San Clemente Island	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
12884	San Clemente Island	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
12885	Rose Tracking Station, San Clemente Island	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
12886	Rose Tracking Station, San Clemente Island	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
12902	NOTS Pier, San Clemente Island	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil

A3457	Timms Point, San Pedro	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
A3458	Timms Point, San Pedro	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
A3459	Under W end of Timms Pt Causeway, San Pedro	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
A3460	San Pedro Hills	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
A3461	Point Fermin	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
A3462	Malaga Cove	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
A3463	Peck Park Canyon	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
A3464	Peck Park Canyon	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
A3465	Peck Park Canyon	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
A3466	W tributary of Peck Park Canyon	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
B4401	San Pedro	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
D3996	San Clemente Island	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
MF3597	Cabrillo Beach	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
MF3598	Cabrillo Beach	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
MF3600	Cabrillo Beach	Los Angeles County			Monterey	Microfossil

MF6743	Lower Reservation	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
MF7474	Peck Park	Los Angeles County	Tertiary	Miocene	Monterey	Microfossil
PA1223	COI Water Recycling Project (Phase IIB) - III	Los Angeles County	Tertiary	Miocene	Monterey	Plant
PA1224	COI Water Recycling Project (Phase IIB) - IV	Los Angeles County	Tertiary	Miocene	Monterey	Plant
PA1225	COI Water Recycling Project (Phase IIB) - V	Los Angeles County	Tertiary	Miocene	Monterey	Plant
PA1234	COI Water Recycling Project (Package 1B) - I	Los Angeles County	Tertiary	Miocene	Monterey	Plant
PA1235	COI Water Recycling Project (Package 1B) - II	Los Angeles County	Tertiary	Miocene	Monterey	Plant
PA1320	LACM Site 1267	Los Angeles County	Tertiary	Miocene	Monterey	Plant
V3413	Lomita	Los Angeles County	Tertiary	Miocene	Monterey	Vertebrate
V3525	Bairdstown	Los Angeles County	Tertiary	Miocene	Monterey	Vertebrate
V6848	Palos Verdes Hills	Los Angeles County	Tertiary	Miocene	Monterey	Vertebrate
V36118	Dacelite Quarry	Los Angeles County	Tertiary	Miocene	Monterey	Vertebrate
V69176	Malaga Cove N	Los Angeles County	Tertiary	Miocene	Monterey	Vertebrate

Appendix B Los Angeles County Natural History Museum Records Search

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

NATURAL HISTORY MUSEUM
LOS ANGELES COUNTY

Vertebrate Paleontology Section
Telephone: (213) 763-3325
Fax: (213) 746-7431
e-mail: smcleod@nhm.org

30 May 2013

Environmental Science Associates
626 Wilshire Boulevard, Suite 1100
Los Angeles, CA 90017

Attn: Candace Ehringer, Cultural Resources

re: Paleontological resources for the proposed LADWP Griffith Park South Water Recycling Project, ESA Project # 211490.27, in the City of Los Angeles, Los Angeles County, project area

Dear Candace:

I have thoroughly searched our paleontology collection records for the locality and specimen data for the proposed LADWP Griffith Park South Water Recycling Project, ESA Project # 211490.27, in the City of Los Angeles, Los Angeles County, project area as outlined on the portions of the Burbank and Hollywood USGS topographic quadrangle maps that you sent to me via e-mail on 29 May 2013. We have no fossil vertebrate localities that lie directly within the proposed project area, but we do have localities nearby from the same sedimentary deposits that occur in the proposed project area.

In the lower lying terrain of the northern portion of the proposed project area the surface deposits are composed of soil and younger Quaternary Alluvium, the latter derived as alluvial fan deposits from the hills to the west and south or as fluvial overbank deposits form the Los Angeles River that flows just to the east. Although these deposits typically do not produce significant vertebrate fossils, at least in the uppermost layers, our closest vertebrate fossil localities from the same deposits near the Los Angeles River are LACM 7701-7702, south-southeast of the proposed project area in the City of Commerce near the intersection of Atlantic Avenue and the Long Beach Freeway (I-710) that produced fossil specimens of threespine stickleback, *Gasterosteus aculeatus*, salamander, *Batrachoseps*, lizard, Lacertilia, snake, Colubridae, rabbit, *Sylvilagus*, pocket mouse, *Microtus*, harvest mouse, *Reithrodontomys*, and pocket gopher, *Thomomys*, at depths of 11 to 34 feet below grade.

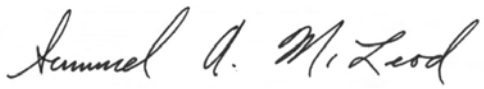
In most of the elevated terrain south of the Cedar Tree Picnic Grounds the proposed project area route crosses exposures of intrusive igneous rocks that will not contain recognizable fossils. At the southern end of the proposed project area route, however, it crosses exposures of the marine late Miocene Monterey Formation [also sometimes referred to as either the Puente Formation or the Modelo Formation in this area]. We have numerous vertebrate fossil localities from the Monterey Formation to the south and southwest of the proposed project area from excavations for the MTA Metrorail Red Line tunnels. Our closest vertebrate fossil localities from these excavations are LACM 6205-6207, around Barnsdall Park near the intersection of Vermont Avenue and Sunset Boulevard, and 6946-6948, from the Vermont Avenue segment from approximately Beverly Boulevard to Sunset Boulevard. These localities produced a suite of fossil fish as detailed in the attached appendix.

Our next closest vertebrate fossil locality in the Monterey Formation is LACM 4967, in Elysian Park southeast of the proposed project area, that produced the holotype (name bearing specimen of a species new to science) of the fossil herring *Clupea tiejei* (L. R. David, 1943. Geological Society of America Special Paper, 43:92). Our next closest fossil vertebrate localities farther southeast of the proposed project area are LACM 6934 in the Mt. Washington area that produced a fossil baleen whale skull, LACM 7017 just below the Southwest Museum near the Pasadena Freeway (Interstate 110) that produced fossil bony fish, and LACM 3882 in the hills of Lincoln Heights that produced the holotype specimen of the fossil cetotheriid baleen whale *Mixocetus elysius* (R. Kellogg, 1934. Carnegie Institution of Washington Publication, 447(3):86), one of the most complete fossil whale skulls known from California.

Excavations in the intrusive igneous rocks found in the middle portion of the proposed project area almost certainly will not uncover any recognizable fossils. Shallow excavations in the younger Quaternary Alluvium in the northern portion of the proposed project area probably would not uncover any significant fossil vertebrate remains. Deeper excavations in that area that extend down into older sedimentary deposits, as well as any excavation in the Monterey Formation in the southern portion of the proposed project area, however, may well encounter significant vertebrate fossils. Any substantial excavations in the sedimentary deposits in the proposed project area, therefore, should be monitored closely to quickly and professionally recover any fossil remains while not impeding construction activities. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,



Samuel A. McLeod, Ph.D.
Vertebrate Paleontology

enclosures: appendix, invoice

Composite fossil fish fauna from LACM localities recovered from MTA Metrorail Red Line excavations along Vermont Avenue from about Beverly Boulevard to Sunset Boulevard

- Osteichthyes
  - Atheriniformes
    - Belonidae - needlefishes
  - Beryciformes
    - Melamphaeidae - bigscales
      - *Scopelogadus*
  - Clupeiformes
    - Clupeidae - shads & herrings
      - *Ganolytes cameo*
      - *Xyne grex*
  - Gadiformes
    - Moridae - moras
  - Myctophiformes
    - Myctophidae - lanternfishes
      - *Diaphus*
    - Neoscopelidae - blackchins
      - *Scopelengys*
  - Perciformes
    - Carangidae - jacks; amberjacks; pompanos
      - *Decapterus*
    - Gempylidae - snake mackerels; escolars; oilfishes
      - *Thyrsocles*
    - Sciaenidae - croakers
      - *Genyonemus*
      - *Lompoquia*
    - Scombridae - mackerels & tunas
      - *Sarda*
      - *Scomber*
    - Serranidae - sea basses & groupers
      - *Paralabrax*
    - Sparidae - porgies
      - *Plectrites classeni*
  - Salmoniformes
    - Alepocephalidae - slickheads
    - Argentinidae - smelts
      - *Argentina*
    - Bathylagidae - deep sea smelts
      - *Bathylagus*
  - Stomiatiformes
    - Chauliodontidae - extinct deep-sea fishes
      - *Chauliodus eximius*
    - Gonostomidae - bristlemouths
      - *Cyclothone*
    - Sternoptychidae - hatchetfishes
      - *Argyropelecus*
      - *Danaphos*

Appendix C Potential Fossil Yield Classification

The paleontological potential of the Project area was evaluated using the PFYC. The PFYC follows, and is excerpted directly from BLM IM 2008-009 (2007):

"Occurrences of paleontological resources are closely tied to the geologic units (i.e., formations, members, or beds) that contain them. The probability for finding paleontological resources can be broadly predicted from the geologic units present at or near the surface. Therefore, geologic mapping can be used for assessing the potential for the occurrence of paleontological resources. However, it is impossible to predict the specific types of fossils that will be found or their exact locations in a geologic formation.

Using the PFYC system, geologic units are classified based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts, with a higher class number indicating a higher potential. This classification is applied to the geologic formation, member, or other distinguishable unit, preferably at the most detailed mappable level. It is not intended to be applied to specific paleontological localities or small areas within units. Although significant localities may occasionally occur in a geologic unit, a few widely scattered important fossils or localities do not necessarily indicate a higher class; instead, the relative abundance of significant localities is intended to be the major determinant for the class assignment.

The PFYC system is meant to provide baseline guidance for predicting, assessing, and mitigating paleontological resources. The classification should be considered at an intermediate point in the analysis, and should be used to assist in determining the need for further mitigation assessment or actions.

The descriptions for the classes below are written to serve as guidelines rather than as strict definitions. Knowledge of the geology and the paleontological potential for individual units or preservational conditions should be considered when determining the appropriate class assignment. Assignments are best made by collaboration between land managers and knowledgeable researchers.

***Class 1 – Very Low**. Geologic units that are not likely to contain recognizable fossil remains.*

•Units that are igneous or metamorphic, excluding reworked volcanic ash units.

•Units that are Precambrian in age or older.

(1) Management concern for paleontological resources in Class 1 units is usually negligible or not applicable. (2) Assessment or mitigation is usually unnecessary except in very rare or isolated circumstances.

The probability for impacting any fossils is negligible. Assessment or mitigation of paleontological resources is usually unnecessary. The occurrence of significant fossils is non-existent or extremely rare.

***Class 2 – Low**. Sedimentary geologic units that are not likely to contain vertebrate fossils or scientifically significant nonvertebrate fossils.*

•Vertebrate or significant invertebrate or plant fossils not present or very rare.

•Units that are generally younger than 10,000 years before present.

•Recent aeolian deposits.

•Sediments that exhibit significant physical and chemical changes (i.e., diagenetic alteration).

(1) Management concern for paleontological resources is generally low. (2) Assessment or mitigation is usually unnecessary except in rare or isolated circumstances.

The probability for impacting vertebrate fossils or scientifically significant invertebrate or plant fossils is low. Assessment or mitigation of paleontological resources is not likely to be necessary. Localities containing important resources may exist, but would be rare and would not influence the classification. These important localities would be managed on a case-by-case basis.

***Class 3** – **Moderate** or **Unknown**. Fossiliferous sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence; or sedimentary units of unknown fossil potential.*

•Often marine in origin with sporadic known occurrences of vertebrate fossils.

•Vertebrate fossils and scientifically significant invertebrate or plant fossils known to occur intermittently; predictability known to be low. (or)

•Poorly studied and/or poorly documented. Potential yield cannot be assigned without ground reconnaissance.

***Class 3a** – **Moderate Potential.** Units are known to contain vertebrate fossils or scientifically significant nonvertebrate fossils, but these occurrences are widely scattered. Common invertebrate or plant fossils may be found in the area, and opportunities may exist for hobby collecting. The potential for a project to be sited on or impact a significant fossil locality is low, but is somewhat higher for common fossils.*

***Class 3b** – **Unknown Potential.** Units exhibit geologic features and preservational conditions that suggest significant fossils could be present, but little information about the paleontological resources of the unit or the area is known. This may indicate the unit or area is poorly studied, and field surveys may uncover significant finds. The units in this Class may eventually be placed in another Class when sufficient survey and research is performed. The unknown potential of the units in this Class should be carefully considered when developing any mitigation or management actions.*

(1) Management concern for paleontological resources is moderate; or cannot be determined from existing data. (2) Surface-disturbing activities may require field assessment to determine appropriate course of action.

This classification includes a broad range of paleontological potential. It includes geologic units of unknown potential, as well as units of moderate or infrequent occurrence of significant fossils. Management considerations cover a broad range of options as well, and could include pre-disturbance surveys, monitoring, or avoidance. Surface-disturbing activities will require sufficient assessment to determine whether significant paleontological resources occur in the area of a proposed action, and whether the action could affect the paleontological resources. These units may contain areas that would be appropriate to designate as hobby collection areas due to the higher occurrence of common fossils and a lower concern about affecting significant paleontological resources.

***Class 4** – **High**. Geologic units containing a high occurrence of significant fossils. Vertebrate fossils or scientifically significant invertebrate or plant fossils are known to occur and have been*

documented, but may vary in occurrence and predictability. Surface disturbing activities may adversely affect paleontological resources in many cases.

***Class 4a** – Unit is exposed with little or no soil or vegetative cover. Outcrop areas are extensive with exposed bedrock areas often larger than two acres. Paleontological resources may be susceptible to adverse impacts from surface disturbing actions. Illegal collecting activities may impact some areas.*

***Class 4b** – These are areas underlain by geologic units with high potential but have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation due to moderating circumstances. The bedrock unit has high potential, but a protective layer of soil, thin alluvial material, or other conditions may lessen or prevent potential impacts to the bedrock resulting from the activity.*

•Extensive soil or vegetative cover; bedrock exposures are limited or not expected to be impacted.

•Areas of exposed outcrop are smaller than two contiguous acres.

•Outcrops form cliffs of sufficient height and slope so that impacts are minimized by topographic conditions.

•Other characteristics are present that lower the vulnerability of both known and unidentified paleontological resources.

(1) Management concern for paleontological resources in Class 4 is moderate to high, depending on the proposed action. (2) A field survey by a qualified paleontologist is often needed to assess local conditions. (3) Management prescriptions for resource preservation and conservation through controlled access or special management designation should be considered. (4) Class 4 and Class 5 units may be combined as Class 5 for broad applications, such as planning efforts or preliminary assessments, when geologic mapping at an appropriate scale is not available. Resource assessment, mitigation, and other management considerations are similar at this level of analysis, and impacts and alternatives can be addressed at a level appropriate to the application.

The probability for impacting significant paleontological resources is moderate to high, and is dependent on the proposed action. Mitigation considerations must include assessment of the disturbance, such as removal or penetration of protective surface alluvium or soils, potential for future accelerated erosion, or increased ease of access resulting in greater looting potential. If impacts to significant fossils can be anticipated, on-the-ground surveys prior to authorizing the surface disturbing action will usually be necessary. On-site monitoring or spot-checking may be necessary during construction activities.

***Class 5** – **Very High**. Highly fossiliferous geologic units that consistently and predictably produce vertebrate fossils or scientifically significant invertebrate or plant fossils, and that are at risk of human-caused adverse impacts or natural degradation.*

***Class 5a** – Unit is exposed with little or no soil or vegetative cover. Outcrop areas are extensive with exposed bedrock areas often larger than two contiguous acres. Paleontological resources are highly susceptible to adverse impacts from surface disturbing actions. Unit is frequently the focus of illegal collecting activities.*

Class 5b *– These are areas underlain by geologic units with very high potential but have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation due to moderating circumstances. The bedrock unit has very high potential, but a protective layer of soil, thin alluvial material, or other conditions may lessen or prevent potential impacts to the bedrock resulting from the activity.*

• Extensive soil or vegetative cover; bedrock exposures are limited or not expected to be impacted.

•Areas of exposed outcrop are smaller than two contiguous acres.

•Outcrops form cliffs of sufficient height and slope so that impacts are minimized by topographic conditions.

•Other characteristics are present that lower the vulnerability of both known and unidentified paleontological resources.

(1) Management concern for paleontological resources in Class 5 areas is high to very high. (2) A field survey by a qualified paleontologist is usually necessary prior to surface disturbing activities or land tenure adjustments. Mitigation will often be necessary before and/or during these actions. (3) Official designation of areas of avoidance, special interest, and concern may be appropriate.

The probability for impacting significant fossils is high. Vertebrate fossils or scientifically significant invertebrate fossils are known or can reasonably be expected to occur in the impacted area. On-the-ground surveys prior to authorizing any surface disturbing activities will usually be necessary. On-site monitoring may be necessary during construction activities"

Appendix D Los Angeles County Natural History Museum Repository Agreement

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

NATURAL HISTORY MUSEUM
LOS ANGELES COUNTY

Vertebrate Paleontology Section
Telephone: (213) 763-3325
Fax: (213) 746-7431
e-mail: smcleod@nhm.org

7 August 2013

Paleo Solutions Inc
911 South Primrose Avenue, Unit J
Monrovia, CA 91016

Attn: Jennifer Kelly, Assistant Project Manager

Subject: Acceptance of fossil vertebrate remains from the Los Angeles Department of Water and Power, Griffith Park South Water Recycling Project, in the City of Los Angeles, California

Dear Jennifer:

This letter will confirm our conditions regarding acceptance by the Department of Vertebrate Paleontology of the Natural History Museum of Los Angeles County [LACM-VP] of the fossil vertebrate remains collected in the course of development for the Los Angeles Department of Water and Power, Griffith Park South Water Recycling Project, in the City of Los Angeles, California. The Vertebrate Paleontology Department is willing to accept the collection(s) if all the following conditions are met:

All localities must be described according the standard format used on the LACM-VP locality form, including a description of the geographic position, lithology, stratigraphy, and depositional environment if known.

All localities must be plotted on standard USGS topographic maps.

All specimens must be fully stabilized and prepared.

All specimens must be designated in such a way as to directly tie them to the localities described above.

All specimens must be identified to the lowest taxonomic level possible.

The collection must be accompanied by copies of any field notes and mitigation or salvage reports.

The collection must be accompanied by a deed-of-gift or letter of transmittal giving free and clear title of the collection to the Natural History Museum of Los Angeles County.

The collection must be accompanied by specimen cabinets, drawers and trays similar to those used by the LACM-VP. This requirement is waved for a relatively small collection.

We estimate our costs for curation tasks for the localities described above, as well as the actual cataloguing of the specimens including placing the numbers on the bones, at $15 per locality and $10 per specimen. We further estimate our costs for the permanent storage and maintenance of a collection at $300 per cubic foot of fully prepared vertebrate fossils. If the equipment and supplies, including specimen cabinets, drawers, and trays, as well as the curation tasks for localities and specimens, are not provided by the donor, then we would greatly appreciate a donation to offset our costs. Any donation must be accompanied by a letter clearly stating that the donation is to be used solely for the permanent curation and storage of a specific collection of vertebrate fossils.

Sincerely,

Samuel A. McLeod

Samuel A. McLeod, Ph.D.
Vertebrate Paleontology

APPENDIX C
Air Quality Data Sheets

LADWP Griffth HDD

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	80.00	1000sqft	2.50	80,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2016
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - This is a construction project. No operational emissions. Ignore operational emissions this run.

Land Use - Adjust acreage to match constractor estimate

Construction Phase - Phasing adjusted to match contractor data

Off-road Equipment - Adjust equipment mix to match contractor data

Off-road Equipment - Adjust equipment mix to match contractor data

Off-road Equipment - Contractor specified equipment

Trips and VMT - Haul truck trip number and length provided by contractor (greater than default)

Grading -

Construction Off-road Equipment Mitigation -

Off-road Equipment - Contractor specified equipment

Demolition -

Off-road Equipment - Contractor specified equipment

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	3.00	5.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	220.00	38.00
tblConstructionPhase	PhaseEndDate	3/19/2015	3/15/2015
tblConstructionPhase	PhaseStartDate	1/17/2015	1/19/2015
tblConstructionPhase	PhaseStartDate	1/10/2015	1/12/2015
tblLandUse	LotAcreage	1.84	2.50
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	6.00	10.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2016
tblTripsAndVMT	HaulingTripLength	20.00	23.50
tblTripsAndVMT	HaulingTripLength	20.00	23.50
tblTripsAndVMT	HaulingTripNumber	0.00	160.00
tblTripsAndVMT	WorkerTripNumber	13.00	20.00
tblTripsAndVMT	WorkerTripNumber	10.00	14.00
tblTripsAndVMT	WorkerTripNumber	34.00	32.00
tblTripsAndVMT	WorkerTripNumber	5.00	20.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.1453	1.1342	0.7584	1.2500e-003	0.0128	0.0713	0.0841	3.1900e-003	0.0683	0.0715	0.0000	112.1946	112.1946	0.0195	0.0000	112.6041
Total	**0.1453**	**1.1342**	**0.7584**	**1.2500e-003**	**0.0128**	**0.0713**	**0.0841**	**3.1900e-003**	**0.0683**	**0.0715**	**0.0000**	**112.1946**	**112.1946**	**0.0195**	**0.0000**	**112.6041**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.1452	1.1330	0.7576	1.2500e-003	0.0523	0.0712	0.1235	0.0130	0.0682	0.0812	0.0000	112.0833	112.0833	0.0195	0.0000	112.4924
Total	**0.1452**	**1.1330**	**0.7576**	**1.2500e-003**	**0.0523**	**0.0712**	**0.1235**	**0.0130**	**0.0682**	**0.0812**	**0.0000**	**112.0833**	**112.0833**	**0.0195**	**0.0000**	**112.4924**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.0963**	**0.1129**	**0.1028**	**0.0000**	**-309.2332**	**0.1122**	**-46.8902**	**-307.5235**	**0.1172**	**-13.6020**	**0.0000**	**0.0992**	**0.0992**	**0.1026**	**0.0000**	**0.0993**

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	0.3819	1.0000e-005	1.0500e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9900e-003	1.9900e-003	1.0000e-005	0.0000	2.1000e-003
Energy	8.1100e-003	0.0738	0.0620	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003	0.0000	356.1667	356.1667	0.0142	4.1000e-003	357.7351
Mobile	1.2135	1.1846	4.4063	0.0105	0.7067	0.0165	0.7232	0.1893	0.0152	0.2044	0.0000	842.4150	842.4150	0.0356	0.0000	843.1617
Waste						0.0000	0.0000		0.0000	0.0000	20.1367	0.0000	20.1367	1.1901	0.0000	45.1277
Water						0.0000	0.0000		0.0000	0.0000	5.8692	68.9343	74.8035	0.6060	0.0149	92.1451
Total	**1.6035**	**1.2584**	**4.4693**	**0.0110**	**0.7067**	**0.0221**	**0.7288**	**0.1893**	**0.0208**	**0.2101**	**26.0059**	**1,267.5180**	**1,293.5239**	**1.8458**	**0.0190**	**1,338.1716**

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	0.3819	1.0000e-005	1.0500e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9900e-003	1.9900e-003	1.0000e-005	0.0000	2.1000e-003
Energy	8.1100e-003	0.0738	0.0620	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003	0.0000	356.1667	356.1667	0.0142	4.1000e-003	357.7351
Mobile	1.2135	1.1846	4.4063	0.0105	0.7067	0.0165	0.7232	0.1893	0.0152	0.2044	0.0000	842.4150	842.4150	0.0356	0.0000	843.1617
Waste						0.0000	0.0000		0.0000	0.0000	20.1367	0.0000	20.1367	1.1901	0.0000	45.1277
Water						0.0000	0.0000		0.0000	0.0000	5.8692	68.9343	74.8035	0.6059	0.0149	92.1357
Total	**1.6035**	**1.2584**	**4.4693**	**0.0110**	**0.7067**	**0.0221**	**0.7288**	**0.1893**	**0.0208**	**0.2101**	**26.0059**	**1,267.5180**	**1,293.5239**	**1.8457**	**0.0190**	**1,338.1622**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**5.9594e-003**	**0.1053**	**7.0021e-004**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/5/2015	1/9/2015	5	5	
2	Site Preparation	Site Preparation	1/12/2015	1/16/2015	5	5	
3	Grading	Grading	1/19/2015	1/26/2015	5	6	
4	Drill/Install	Building Construction	1/27/2015	3/15/2015	5	38	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Air Compressors	1	8.00	78	0.48
Site Preparation	Air Compressors	1	8.00	78	0.48
Grading	Air Compressors	2	8.00	78	0.48
Drill/Install	Other Construction Equipment	1	12.00	171	0.42
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Drill/Install	Pumps	2	12.00	84	0.74
Drill/Install	Cranes	1	12.00	226	0.29
Drill/Install	Generator Sets	1	12.00	84	0.74
Drill/Install	Tractors/Loaders/Backhoes	2	10.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	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
Site Preparation	5	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	14.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drill/Install	7	32.00	13.00	160.00	14.70	6.90	23.50	LD_Mix	HDT_Mix	HHDT
Demolition	2	20.00	0.00	20.00	14.70	6.90	23.50	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2015

Unmitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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					2.1400e-003	0.0000	2.1400e-003	3.2000e-004	0.0000	3.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.2600e-003	0.0172	0.0124	2.0000e-005		1.4100e-003	1.4100e-003		1.3500e-003	1.3500e-003	0.0000	1.5938	1.5938	3.3000e-004	0.0000	1.6008
Total	**2.2600e-003**	**0.0172**	**0.0124**	**2.0000e-005**	**2.1400e-003**	**1.4100e-003**	**3.5500e-003**	**3.2000e-004**	**1.3500e-003**	**1.6700e-003**	**0.0000**	**1.5938**	**1.5938**	**3.3000e-004**	**0.0000**	**1.6008**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.1000e-004	3.8900e-003	2.5700e-003	1.0000e-005	2.0000e-004	6.0000e-005	2.6000e-004	6.0000e-005	6.0000e-005	1.1000e-004	0.0000	0.8077	0.8077	1.0000e-005	0.0000	0.8078
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	1.1900e-003	3.5000e-004	3.6800e-003	1.0000e-005	5.5000e-004	1.0000e-005	5.5000e-004	1.5000e-004	1.0000e-005	1.5000e-004	0.0000	0.5531	0.5531	3.0000e-005	0.0000	0.5538
Total	**1.7000e-003**	**4.2400e-003**	**6.2500e-003**	**2.0000e-005**	**7.5000e-004**	**7.0000e-005**	**8.1000e-004**	**2.1000e-004**	**7.0000e-005**	**2.6000e-004**	**0.0000**	**1.3608**	**1.3608**	**4.0000e-005**	**0.0000**	**1.3616**

3.2 Demolition - 2015

Mitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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					9.6000e-004	0.0000	9.6000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.2500e-003	0.0171	0.0124	2.0000e-005		1.4100e-003	1.4100e-003		1.3500e-003	1.3500e-003	0.0000	1.5919	1.5919	3.3000e-004	0.0000	1.5989
Total	**2.2500e-003**	**0.0171**	**0.0124**	**2.0000e-005**	**9.6000e-004**	**1.4100e-003**	**2.3700e-003**	**1.5000e-004**	**1.3500e-003**	**1.5000e-003**	**0.0000**	**1.5919**	**1.5919**	**3.3000e-004**	**0.0000**	**1.5989**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.1000e-004	3.8900e-003	2.5700e-003	1.0000e-005	8.1000e-004	6.0000e-005	8.7000e-004	2.0000e-004	6.0000e-005	2.6000e-004	0.0000	0.8077	0.8077	1.0000e-005	0.0000	0.8078
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	1.1900e-003	3.5000e-004	3.6800e-003	1.0000e-005	5.5000e-004	1.0000e-005	5.5000e-004	1.5000e-004	1.0000e-005	1.5000e-004	0.0000	0.5531	0.5531	3.0000e-005	0.0000	0.5538
Total	**1.7000e-003**	**4.2400e-003**	**6.2500e-003**	**2.0000e-005**	**1.3600e-003**	**7.0000e-005**	**1.4200e-003**	**3.5000e-004**	**7.0000e-005**	**4.1000e-004**	**0.0000**	**1.3608**	**1.3608**	**4.0000e-005**	**0.0000**	**1.3616**

3.3 Site Preparation - 2015

Unmitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.9600e-003	0.0429	0.0306	4.0000e-005		3.4200e-003	3.4200e-003		3.2100e-003	3.2100e-003	0.0000	3.8220	3.8220	1.0000e-003	0.0000	3.8430
Total	**4.9600e-003**	**0.0429**	**0.0306**	**4.0000e-005**		**3.4200e-003**	**3.4200e-003**		**3.2100e-003**	**3.2100e-003**	**0.0000**	**3.8220**	**3.8220**	**1.0000e-003**	**0.0000**	**3.8430**

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	1.1900e-003	3.5000e-004	3.6800e-003	1.0000e-005	5.5000e-004	1.0000e-005	5.5000e-004	1.5000e-004	1.0000e-005	1.5000e-004	0.0000	0.5531	0.5531	3.0000e-005	0.0000	0.5538
Total	**1.1900e-003**	**3.5000e-004**	**3.6800e-003**	**1.0000e-005**	**5.5000e-004**	**1.0000e-005**	**5.5000e-004**	**1.5000e-004**	**1.0000e-005**	**1.5000e-004**	**0.0000**	**0.5531**	**0.5531**	**3.0000e-005**	**0.0000**	**0.5538**

3.3 Site Preparation - 2015

Mitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.9500e-003	0.0428	0.0306	4.0000e-005		3.4200e-003	3.4200e-003		3.2000e-003	3.2000e-003	0.0000	3.8175	3.8175	1.0000e-003	0.0000	3.8384
Total	**4.9500e-003**	**0.0428**	**0.0306**	**4.0000e-005**		**3.4200e-003**	**3.4200e-003**		**3.2000e-003**	**3.2000e-003**	**0.0000**	**3.8175**	**3.8175**	**1.0000e-003**	**0.0000**	**3.8384**

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	1.1900e-003	3.5000e-004	3.6800e-003	1.0000e-005	5.5000e-004	1.0000e-005	5.5000e-004	1.5000e-004	1.0000e-005	1.5000e-004	0.0000	0.5531	0.5531	3.0000e-005	0.0000	0.5538
Total	**1.1900e-003**	**3.5000e-004**	**3.6800e-003**	**1.0000e-005**	**5.5000e-004**	**1.0000e-005**	**5.5000e-004**	**1.5000e-004**	**1.0000e-005**	**1.5000e-004**	**0.0000**	**0.5531**	**0.5531**	**3.0000e-005**	**0.0000**	**0.5538**

3.4 Grading - 2015

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	5.4200e-003	0.0412	0.0298	4.0000e-005		3.3800e-003	3.3800e-003		3.2500e-003	3.2500e-003	0.0000	3.8252	3.8252	8.0000e-004	0.0000	3.8419
Total	**5.4200e-003**	**0.0412**	**0.0298**	**4.0000e-005**		**3.3800e-003**	**3.3800e-003**		**3.2500e-003**	**3.2500e-003**	**0.0000**	**3.8252**	**3.8252**	**8.0000e-004**	**0.0000**	**3.8419**

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	1.0000e-003	3.0000e-004	3.0900e-003	1.0000e-005	4.6000e-004	0.0000	4.6000e-004	1.2000e-004	0.0000	1.3000e-004	0.0000	0.4646	0.4646	3.0000e-005	0.0000	0.4652
Total	**1.0000e-003**	**3.0000e-004**	**3.0900e-003**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**4.6000e-004**	**1.2000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4646**	**0.4646**	**3.0000e-005**	**0.0000**	**0.4652**

3.4 Grading - 2015

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	5.4100e-003	0.0411	0.0297	4.0000e-005		3.3700e-003	3.3700e-003		3.2500e-003	3.2500e-003	0.0000	3.8206	3.8206	8.0000e-004	0.0000	3.8373
Total	**5.4100e-003**	**0.0411**	**0.0297**	**4.0000e-005**		**3.3700e-003**	**3.3700e-003**		**3.2500e-003**	**3.2500e-003**	**0.0000**	**3.8206**	**3.8206**	**8.0000e-004**	**0.0000**	**3.8373**

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	1.0000e-003	3.0000e-004	3.0900e-003	1.0000e-005	4.6000e-004	0.0000	4.6000e-004	1.2000e-004	0.0000	1.3000e-004	0.0000	0.4646	0.4646	3.0000e-005	0.0000	0.4652
Total	**1.0000e-003**	**3.0000e-004**	**3.0900e-003**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**4.6000e-004**	**1.2000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4646**	**0.4646**	**3.0000e-005**	**0.0000**	**0.4652**

3.5 Drill/Install - 2015

Unmitigated Construction On-Site

Acres of Paving: 0

	ROG	NOx	CO	SO2	Fugitive 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	0.1082	0.9736	0.5859	9.3000e-004		0.0622	0.0622		0.0596	0.0596	0.0000	84.3284	84.3284	0.0168	0.0000	84.6819
Total	**0.1082**	**0.9736**	**0.5859**	**9.3000e-004**		**0.0622**	**0.0622**		**0.0596**	**0.0596**	**0.0000**	**84.3284**	**84.3284**	**0.0168**	**0.0000**	**84.6819**

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	3.6700e-003	0.0278	0.0184	6.0000e-005	1.5700e-003	4.4000e-004	2.0100e-003	4.3000e-004	4.0000e-004	8.3000e-004	0.0000	5.7813	5.7813	5.0000e-005	0.0000	5.7822
Vendor	3.9700e-003	0.0229	0.0284	5.0000e-005	1.3500e-003	3.7000e-004	1.7200e-003	3.9000e-004	3.4000e-004	7.2000e-004	0.0000	4.4477	4.4477	4.0000e-005	0.0000	4.4485
Worker	0.0130	3.8400e-003	0.0400	8.0000e-005	5.9600e-003	6.0000e-005	6.0200e-003	1.5800e-003	6.0000e-005	1.6400e-003	0.0000	6.0178	6.0178	3.6000e-004	0.0000	6.0253
Total	**0.0206**	**0.0545**	**0.0868**	**1.9000e-004**	**8.8800e-003**	**8.7000e-004**	**9.7500e-003**	**2.4000e-003**	**8.0000e-004**	**3.1900e-003**	**0.0000**	**16.2468**	**16.2468**	**4.5000e-004**	**0.0000**	**16.2560**

3.5 Drill/Install - 2015

Mitigated Construction On-Site

Acres of Paving: 0

	ROG	NOx	CO	SO2	Fugitive 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	0.1081	0.9725	0.5852	9.3000e-004		0.0621	0.0621		0.0595	0.0595	0.0000	84.2281	84.2281	0.0168	0.0000	84.5811
Total	**0.1081**	**0.9725**	**0.5852**	**9.3000e-004**		**0.0621**	**0.0621**		**0.0595**	**0.0595**	**0.0000**	**84.2281**	**84.2281**	**0.0168**	**0.0000**	**84.5811**

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	3.6700e-003	0.0278	0.0184	6.0000e-005	0.0417	4.4000e-004	0.0421	0.0103	4.0000e-004	0.0107	0.0000	5.7813	5.7813	5.0000e-005	0.0000	5.7822
Vendor	3.9700e-003	0.0229	0.0284	5.0000e-005	1.3500e-003	3.7000e-004	1.7200e-003	3.9000e-004	3.4000e-004	7.2000e-004	0.0000	4.4477	4.4477	4.0000e-005	0.0000	4.4485
Worker	0.0130	3.8400e-003	0.0400	8.0000e-005	5.9600e-003	6.0000e-005	6.0200e-003	1.5800e-003	6.0000e-005	1.6400e-003	0.0000	6.0178	6.0178	3.6000e-004	0.0000	6.0253
Total	**0.0206**	**0.0545**	**0.0868**	**1.9000e-004**	**0.0490**	**8.7000e-004**	**0.0498**	**0.0122**	**8.0000e-004**	**0.0130**	**0.0000**	**16.2468**	**16.2468**	**4.5000e-004**	**0.0000**	**16.2560**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.2135	1.1846	4.4063	0.0105	0.7067	0.0165	0.7232	0.1893	0.0152	0.2044	0.0000	842.4150	842.4150	0.0356	0.0000	843.1617
Unmitigated	1.2135	1.1846	4.4063	0.0105	0.7067	0.0165	0.7232	0.1893	0.0152	0.2044	0.0000	842.4150	842.4150	0.0356	0.0000	843.1617

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	557.60	105.60	54.40	1,864,937	1,864,937
Total	557.60	105.60	54.40	1,864,937	1,864,937

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.533598	0.058434	0.178244	0.125508	0.038944	0.006283	0.016425	0.031066	0.002453	0.003157	0.003691	0.000543	0.001655

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	275.8649	275.8649	0.0127	2.6200e-003	276.9445
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	275.8649	275.8649	0.0127	2.6200e-003	276.9445
NaturalGas Mitigated	8.1100e-003	0.0738	0.0620	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003	0.0000	80.3019	80.3019	1.5400e-003	1.4700e-003	80.7906
NaturalGas Unmitigated	8.1100e-003	0.0738	0.0620	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003	0.0000	80.3019	80.3019	1.5400e-003	1.4700e-003	80.7906

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	1.5048e+006	8.1100e-003	0.0738	0.0620	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003	0.0000	80.3019	80.3019	1.5400e-003	1.4700e-003	80.7906
Total		**8.1100e-003**	**0.0738**	**0.0620**	**4.4000e-004**		**5.6100e-003**	**5.6100e-003**		**5.6100e-003**	**5.6100e-003**	**0.0000**	**80.3019**	**80.3019**	**1.5400e-003**	**1.4700e-003**	**80.7906**

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					
General Light Industry	1.5048e+006	8.1100e-003	0.0738	0.0620	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003	0.0000	80.3019	80.3019	1.5400e-003	1.4700e-003	80.7906
Total		**8.1100e-003**	**0.0738**	**0.0620**	**4.4000e-004**		**5.6100e-003**	**5.6100e-003**		**5.6100e-003**	**5.6100e-003**	**0.0000**	**80.3019**	**80.3019**	**1.5400e-003**	**1.4700e-003**	**80.7906**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	964000	275.8649	0.0127	2.6200e-003	276.9445
Total		**275.8649**	**0.0127**	**2.6200e-003**	**276.9445**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	964000	275.8649	0.0127	2.6200e-003	276.9445
Total		**275.8649**	**0.0127**	**2.6200e-003**	**276.9445**

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	0.3819	1.0000e-005	1.0500e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9900e-003	1.9900e-003	1.0000e-005	0.0000	2.1000e-003
Unmitigated	0.3819	1.0000e-005	1.0500e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9900e-003	1.9900e-003	1.0000e-005	0.0000	2.1000e-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	tons/yr										MT/yr					
Architectural Coating	0.0927					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2891					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-004	1.0000e-005	1.0500e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9900e-003	1.9900e-003	1.0000e-005	0.0000	2.1000e-003
Total	**0.3819**	**1.0000e-005**	**1.0500e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.9900e-003**	**1.9900e-003**	**1.0000e-005**	**0.0000**	**2.1000e-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	tons/yr										MT/yr					
Architectural Coating	0.0927					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2891					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-004	1.0000e-005	1.0500e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9900e-003	1.9900e-003	1.0000e-005	0.0000	2.1000e-003
Total	**0.3819**	**1.0000e-005**	**1.0500e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.9900e-003**	**1.9900e-003**	**1.0000e-005**	**0.0000**	**2.1000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	74.8035	0.6059	0.0149	92.1357
Unmitigated	74.8035	0.6060	0.0149	92.1451

7.2 Water by Land Use

Unmitigated

	Indoor/ Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	18.5 / 0	74.8035	0.6060	0.0149	92.1451
Total		**74.8035**	**0.6060**	**0.0149**	**92.1451**

7.2 Water by Land Use

Mitigated

	Indoor/ Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	18.5 / 0	74.8035	0.6059	0.0149	92.1357
Total		**74.8035**	**0.6059**	**0.0149**	**92.1357**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	20.1367	1.1901	0.0000	45.1277
Unmitigated	20.1367	1.1901	0.0000	45.1277

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	99.2	20.1367	1.1901	0.0000	45.1277
Total		**20.1367**	**1.1901**	**0.0000**	**45.1277**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	99.2	20.1367	1.1901	0.0000	45.1277
Total		**20.1367**	**1.1901**	**0.0000**	**45.1277**

9.0 Operational Offroad

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

10.0 Vegetation

LADWP Griffth HDD

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	80.00	1000sqft	2.50	80,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2016
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - This is a construction project. No operational emissions. Ignore operational emissions this run.

Land Use - Adjust acreage to match constractor estimate

Construction Phase - Phasing adjusted to match contractor data

Off-road Equipment - Adjust equipment mix to match contractor data

Off-road Equipment - Adjust equipment mix to match contractor data

Off-road Equipment - Contractor specified equipment

Trips and VMT - Haul truck trip number and length provided by contractor (greater than default)

Grading -

Construction Off-road Equipment Mitigation -

Off-road Equipment - Contractor specified equipment

Demolition -

Off-road Equipment - Contractor specified equipment

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	3.00	5.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	220.00	38.00
tblConstructionPhase	PhaseEndDate	3/19/2015	3/15/2015
tblConstructionPhase	PhaseStartDate	1/17/2015	1/19/2015
tblConstructionPhase	PhaseStartDate	1/10/2015	1/12/2015
tblLandUse	LotAcreage	1.84	2.50
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	6.00	10.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2016
tblTripsAndVMT	HaulingTripLength	20.00	23.50
tblTripsAndVMT	HaulingTripLength	20.00	23.50
tblTripsAndVMT	HaulingTripNumber	0.00	160.00
tblTripsAndVMT	WorkerTripNumber	13.00	20.00
tblTripsAndVMT	WorkerTripNumber	10.00	14.00
tblTripsAndVMT	WorkerTripNumber	34.00	32.00
tblTripsAndVMT	WorkerTripNumber	5.00	20.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	7.7094	60.4192	39.6133	0.0659	1.1613	3.7074	4.2399	0.2113	3.5522	3.6956	0.0000	6,513.4869	6,513.4869	1.1201	0.0000	6,537.0086
Total	**7.7094**	**60.4192**	**39.6133**	**0.0659**	**1.1613**	**3.7074**	**4.2399**	**0.2113**	**3.5522**	**3.6956**	**0.0000**	**6,513.4869**	**6,513.4869**	**1.1201**	**0.0000**	**6,537.0086**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	7.7036	60.3667	39.5817	0.0658	2.9450	3.7040	6.6491	0.7355	3.5490	4.2845	0.0000	6,508.4703	6,508.4703	1.1191	0.0000	6,531.9710
Total	**7.7036**	**60.3667**	**39.5817**	**0.0658**	**2.9450**	**3.7040**	**6.6491**	**0.7355**	**3.5490**	**4.2845**	**0.0000**	**6,508.4703**	**6,508.4703**	**1.1191**	**0.0000**	**6,531.9710**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.0758**	**0.0870**	**0.0798**	**0.0759**	**-153.5894**	**0.0906**	**-56.8194**	**-248.1140**	**0.0904**	**-15.9361**	**0.0000**	**0.0770**	**0.0770**	**0.0893**	**0.0000**	**0.0771**

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	2.0928	8.0000e-005	8.3800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0175	0.0175	5.0000e-005		0.0186
Energy	0.0445	0.4042	0.3395	2.4300e-003		0.0307	0.0307		0.0307	0.0307		485.0282	485.0282	9.3000e-003	8.8900e-003	487.9800
Mobile	9.8812	8.4519	31.7696	0.0757	5.2421	0.1206	5.3627	1.4016	0.1109	1.5125		6,678.9085	6,678.9085	0.2856		6,684.9056
Total	**12.0184**	**8.8562**	**32.1175**	**0.0781**	**5.2421**	**0.1514**	**5.3934**	**1.4016**	**0.1416**	**1.5433**		**7,163.9542**	**7,163.9542**	**0.2949**	**8.8900e-003**	**7,172.9042**

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	2.0928	8.0000e-005	8.3800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0175	0.0175	5.0000e-005		0.0186
Energy	0.0445	0.4042	0.3395	2.4300e-003		0.0307	0.0307		0.0307	0.0307		485.0282	485.0282	9.3000e-003	8.8900e-003	487.9800
Mobile	9.8812	8.4519	31.7696	0.0757	5.2421	0.1206	5.3627	1.4016	0.1109	1.5125		6,678.9085	6,678.9085	0.2856		6,684.9056
Total	**12.0184**	**8.8562**	**32.1175**	**0.0781**	**5.2421**	**0.1514**	**5.3934**	**1.4016**	**0.1416**	**1.5433**		**7,163.9542**	**7,163.9542**	**0.2949**	**8.8900e-003**	**7,172.9042**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/5/2015	1/9/2015	5	5	
2	Site Preparation	Site Preparation	1/12/2015	1/16/2015	5	5	
3	Grading	Grading	1/19/2015	1/26/2015	5	6	
4	Drill/Install	Building Construction	1/27/2015	3/15/2015	5	38	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Air Compressors	1	8.00	78	0.48
Site Preparation	Air Compressors	1	8.00	78	0.48
Grading	Air Compressors	2	8.00	78	0.48
Drill/Install	Other Construction Equipment	1	12.00	171	0.42
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Drill/Install	Pumps	2	12.00	84	0.74
Drill/Install	Cranes	1	12.00	226	0.29
Drill/Install	Generator Sets	1	12.00	84	0.74
Drill/Install	Tractors/Loaders/Backhoes	2	10.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	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
Site Preparation	5	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	14.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drill/Install	7	32.00	13.00	160.00	14.70	6.90	23.50	LD_Mix	HDT_Mix	HHDT
Demolition	2	20.00	0.00	20.00	14.70	6.90	23.50	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2015

Unmitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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					0.8560	0.0000	0.8560	0.1296	0.0000	0.1296			0.0000			0.0000
Off-Road	0.9025	6.8593	4.9613	7.0800e-003		0.5631	0.5631		0.5417	0.5417		702.7517	702.7517	0.1466		705.8310
Total	**0.9025**	**6.8593**	**4.9613**	**7.0800e-003**	**0.8560**	**0.5631**	**1.4191**	**0.1296**	**0.5417**	**0.6713**		**702.7517**	**702.7517**	**0.1466**		**705.8310**

3.2 Demolition - 2015

Unmitigated Construction Off-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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	0.2144	1.5288	1.0553	3.4900e-003	0.0818	0.0246	0.1064	0.0224	0.0226	0.0450		355.7102	355.7102	2.9000e-003		355.7711
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	0.5455	0.1375	1.4409	2.7400e-003	0.2236	2.2300e-003	0.2258	0.0593	2.0500e-003	0.0613		240.0215	240.0215	0.0145		240.3263
Total	**0.7599**	**1.6663**	**2.4963**	**6.2300e-003**	**0.3054**	**0.0268**	**0.3322**	**0.0817**	**0.0247**	**0.1064**		**595.7317**	**595.7317**	**0.0174**		**596.0974**

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					0.3852	0.0000	0.3852	0.0583	0.0000	0.0583			0.0000			0.0000
Off-Road	0.9017	6.8530	4.9567	7.0700e-003		0.5626	0.5626		0.5412	0.5412	0.0000	702.1070	702.1070	0.1465		705.1835
Total	**0.9017**	**6.8530**	**4.9567**	**7.0700e-003**	**0.3852**	**0.5626**	**0.9478**	**0.0583**	**0.5412**	**0.5995**	**0.0000**	**702.1070**	**702.1070**	**0.1465**		**705.1835**

3.2 Demolition - 2015

Mitigated Construction Off-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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	0.2144	1.5288	1.0553	3.4900e-003	0.3304	0.0246	0.3550	0.0834	0.0226	0.1060		355.7102	355.7102	2.9000e-003		355.7711
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	0.5455	0.1375	1.4409	2.7400e-003	0.2236	2.2300e-003	0.2258	0.0593	2.0500e-003	0.0613		240.0215	240.0215	0.0145		240.3263
Total	**0.7599**	**1.6663**	**2.4963**	**6.2300e-003**	**0.5539**	**0.0268**	**0.5808**	**0.1427**	**0.0247**	**0.1674**		**595.7317**	**595.7317**	**0.0174**		**596.0974**

3.3 Site Preparation - 2015

Unmitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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	1.9836	17.1557	12.2381	0.0164		1.3691	1.3691		1.2831	1.2831		1,685.2147	1,685.2147	0.4399		1,694.4534
Total	**1.9836**	**17.1557**	**12.2381**	**0.0164**		**1.3691**	**1.3691**		**1.2831**	**1.2831**		**1,685.2147**	**1,685.2147**	**0.4399**		**1,694.4534**

3.3 Site Preparation - 2015

Unmitigated Construction Off-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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	0.5455	0.1375	1.4409	2.7400e-003	0.2236	2.2300e-003	0.2258	0.0593	2.0500e-003	0.0613		240.0215	240.0215	0.0145		240.3263
Total	**0.5455**	**0.1375**	**1.4409**	**2.7400e-003**	**0.2236**	**2.2300e-003**	**0.2258**	**0.0593**	**2.0500e-003**	**0.0613**		**240.0215**	**240.0215**	**0.0145**		**240.3263**

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	1.9818	17.1399	12.2269	0.0164		1.3678	1.3678		1.2819	1.2819	0.0000	1,683.6686	1,683.6686	0.4395		1,692.8988
Total	**1.9818**	**17.1399**	**12.2269**	**0.0164**		**1.3678**	**1.3678**		**1.2819**	**1.2819**	**0.0000**	**1,683.6686**	**1,683.6686**	**0.4395**		**1,692.8988**

3.3 Site Preparation - 2015

Mitigated Construction Off-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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	0.5455	0.1375	1.4409	2.7400e-003	0.2236	2.2300e-003	0.2258	0.0593	2.0500e-003	0.0613		240.0215	240.0215	0.0145		240.3263
Total	**0.5455**	**0.1375**	**1.4409**	**2.7400e-003**	**0.2236**	**2.2300e-003**	**0.2258**	**0.0593**	**2.0500e-003**	**0.0613**		**240.0215**	**240.0215**	**0.0145**		**240.3263**

3.4 Grading - 2015

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	1.8050	13.7185	9.9226	0.0142		1.1263	1.1263		1.0833	1.0833		1,405.5034	1,405.5034	0.2933		1,411.6620
Total	**1.8050**	**13.7185**	**9.9226**	**0.0142**		**1.1263**	**1.1263**		**1.0833**	**1.0833**		**1,405.5034**	**1,405.5034**	**0.2933**		**1,411.6620**

3.4 Grading - 2015

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	0.3819	0.0963	1.0087	1.9200e-003	0.1565	1.5600e-003	0.1581	0.0415	1.4300e-003	0.0429		168.0151	168.0151	0.0102		168.2284
Total	**0.3819**	**0.0963**	**1.0087**	**1.9200e-003**	**0.1565**	**1.5600e-003**	**0.1581**	**0.0415**	**1.4300e-003**	**0.0429**		**168.0151**	**168.0151**	**0.0102**		**168.2284**

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	1.8034	13.7059	9.9134	0.0142		1.1253	1.1253		1.0823	1.0823	0.0000	1,404.2140	1,404.2140	0.2930		1,410.3669
Total	**1.8034**	**13.7059**	**9.9134**	**0.0142**		**1.1253**	**1.1253**		**1.0823**	**1.0823**	**0.0000**	**1,404.2140**	**1,404.2140**	**0.2930**		**1,410.3669**

3.4 Grading - 2015

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	0.3819	0.0963	1.0087	1.9200e-003	0.1565	1.5600e-003	0.1581	0.0415	1.4300e-003	0.0429		168.0151	168.0151	0.0102		168.2284
Total	**0.3819**	**0.0963**	**1.0087**	**1.9200e-003**	**0.1565**	**1.5600e-003**	**0.1581**	**0.0415**	**1.4300e-003**	**0.0429**		**168.0151**	**168.0151**	**0.0102**		**168.2284**

3.5 Drill/Install - 2015

Unmitigated Construction On-Site

Acres of Paving: 0

	ROG	NOx	CO	SO2	Fugitive 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	6.3651	57.2714	34.4628	0.0550		3.6561	3.6561		3.5051	3.5051		5,468.0088	5,468.0088	1.0914		5,490.9287
Total	**6.3651**	**57.2714**	**34.4628**	**0.0550**		**3.6561**	**3.6561**		**3.5051**	**3.5051**		**5,468.0088**	**5,468.0088**	**1.0914**		**5,490.9287**

3.5 Drill/Install - 2015

Unmitigated Construction Off-Site

Acres of Paving: 0

	ROG	NOx	CO	SO2	Fugitive 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	0.2256	1.6093	1.1109	3.6800e-003	0.0938	0.0259	0.1197	0.0255	0.0238	0.0493		374.4318	374.4318	3.0500e-003		374.4959
Vendor	0.2458	1.3186	1.7342	2.8400e-003	0.0810	0.0218	0.1029	0.0231	0.0201	0.0431		287.0119	287.0119	2.3900e-003		287.0621
Worker	0.8728	0.2200	2.3055	4.3900e-003	0.3577	3.5700e-003	0.3613	0.0949	3.2700e-003	0.0981		384.0344	384.0344	0.0232		384.5220
Total	**1.3443**	**3.1479**	**5.1506**	**0.0109**	**0.5325**	**0.0513**	**0.5838**	**0.1434**	**0.0472**	**0.1905**		**1,045.4781**	**1,045.4781**	**0.0287**		**1,046.0800**

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	6.3593	57.2188	34.4311	0.0549		3.6528	3.6528		3.5018	3.5018	0.0000	5,462.9922	5,462.9922	1.0904		5,485.8911
Total	**6.3593**	**57.2188**	**34.4311**	**0.0549**		**3.6528**	**3.6528**		**3.5018**	**3.5018**	**0.0000**	**5,462.9922**	**5,462.9922**	**1.0904**		**5,485.8911**

3.5 Drill/Install - 2015

Mitigated Construction Off-Site

Acres of Paving: 0

	ROG	NOx	CO	SO2	Fugitive 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	0.2256	1.6093	1.1109	3.6800e-003	2.5063	0.0259	2.5322	0.6176	0.0238	0.6414		374.4318	374.4318	3.0500e-003		374.4959
Vendor	0.2458	1.3186	1.7342	2.8400e-003	0.0810	0.0218	0.1029	0.0231	0.0201	0.0431		287.0119	287.0119	2.3900e-003		287.0621
Worker	0.8728	0.2200	2.3055	4.3900e-003	0.3577	3.5700e-003	0.3613	0.0949	3.2700e-003	0.0981		384.0344	384.0344	0.0232		384.5220
Total	**1.3443**	**3.1479**	**5.1506**	**0.0109**	**2.9450**	**0.0513**	**2.9963**	**0.7355**	**0.0472**	**0.7827**		**1,045.4781**	**1,045.4781**	**0.0287**		**1,046.0800**

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	9.8812	8.4519	31.7696	0.0757	5.2421	0.1206	5.3627	1.4016	0.1109	1.5125		6,678.9085	6,678.9085	0.2856		6,684.9056
Unmitigated	9.8812	8.4519	31.7696	0.0757	5.2421	0.1206	5.3627	1.4016	0.1109	1.5125		6,678.9085	6,678.9085	0.2856		6,684.9056

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	557.60	105.60	54.40	1,864,937	1,864,937
Total	557.60	105.60	54.40	1,864,937	1,864,937

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.533598	0.058434	0.178244	0.125508	0.038944	0.006283	0.016425	0.031066	0.002453	0.003157	0.003691	0.000543	0.001655

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0445	0.4042	0.3395	2.4300e-003		0.0307	0.0307		0.0307	0.0307		485.0282	485.0282	9.3000e-003	8.8900e-003	487.9800
NaturalGas Unmitigated	0.0445	0.4042	0.3395	2.4300e-003		0.0307	0.0307		0.0307	0.0307		485.0282	485.0282	9.3000e-003	8.8900e-003	487.9800

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	4122.74	0.0445	0.4042	0.3395	2.4300e-003		0.0307	0.0307		0.0307	0.0307		485.0282	485.0282	9.3000e-003	8.8900e-003	487.9800
Total		**0.0445**	**0.4042**	**0.3395**	**2.4300e-003**		**0.0307**	**0.0307**		**0.0307**	**0.0307**		**485.0282**	**485.0282**	**9.3000e-003**	**8.8900e-003**	**487.9800**

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					
General Light Industry	4.12274	0.0445	0.4042	0.3395	2.4300e-003		0.0307	0.0307		0.0307	0.0307		485.0282	485.0282	9.3000e-003	8.8900e-003	487.9800
Total		**0.0445**	**0.4042**	**0.3395**	**2.4300e-003**		**0.0307**	**0.0307**		**0.0307**	**0.0307**		**485.0282**	**485.0282**	**9.3000e-003**	**8.8900e-003**	**487.9800**

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	2.0928	8.0000e-005	8.3800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0175	0.0175	5.0000e-005		0.0186
Unmitigated	2.0928	8.0000e-005	8.3800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0175	0.0175	5.0000e-005		0.0186

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	0.5080					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.5840					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.2000e-004	8.0000e-005	8.3800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0175	0.0175	5.0000e-005		0.0186
Total	**2.0928**	**8.0000e-005**	**8.3800e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**		**0.0175**	**0.0175**	**5.0000e-005**		**0.0186**

6.2 Area by SubCategory

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	0.5080					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.5840					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.2000e-004	8.0000e-005	8.3800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0175	0.0175	5.0000e-005		0.0186
Total	**2.0928**	**8.0000e-005**	**8.3800e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**		**0.0175**	**0.0175**	**5.0000e-005**		**0.0186**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

Griffith Park Recycling Project - Pipelines

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	8.71	1000sqft	0.20	8,712.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2014
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - acreage adjusted to match contractor estimate

Construction Phase - Adjust phasing to match contractor data

Off-road Equipment - Adjust equipment list to match contractor data

Off-road Equipment - Adjust equipment list to match contractor data

Off-road Equipment - Adjust equipment list to match contractor data

Trips and VMT - Gang trucks and welder trucks added to worker trips

Vehicle Trips - No operational emissions with pipeline

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	30.00
tblConstructionPhase	NumDays	5.00	35.00
tblConstructionPhase	NumDays	1.00	6.00
tblConstructionPhase	PhaseEndDate	4/10/2014	2/28/2014
tblConstructionPhase	PhaseStartDate	2/21/2014	1/11/2014
tblLandUse	LandUseSquareFeet	8,710.00	8,712.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	18.00
tblTripsAndVMT	WorkerTripNumber	30.00	10.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	0.1279	1.1314	0.7132	1.1200e-003	0.0188	0.0658	0.0846	7.9600e-003	0.0618	0.0698	0.0000	102.0660	102.0660	0.0247	0.0000	102.5844
Total	**0.1279**	**1.1314**	**0.7132**	**1.1200e-003**	**0.0188**	**0.0658**	**0.0846**	**7.9600e-003**	**0.0618**	**0.0698**	**0.0000**	**102.0660**	**102.0660**	**0.0247**	**0.0000**	**102.5844**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	0.1278	1.1301	0.7124	1.1100e-003	0.0151	0.0657	0.0808	5.2800e-003	0.0618	0.0670	0.0000	101.9525	101.9525	0.0247	0.0000	102.4703
Total	**0.1278**	**1.1301**	**0.7124**	**1.1100e-003**	**0.0151**	**0.0657**	**0.0808**	**5.2800e-003**	**0.0618**	**0.0670**	**0.0000**	**101.9525**	**101.9525**	**0.0247**	**0.0000**	**102.4703**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.1016**	**0.1184**	**0.1122**	**0.8929**	**19.7026**	**0.1065**	**4.4804**	**33.6683**	**0.1132**	**3.9404**	**0.0000**	**0.1112**	**0.1112**	**0.1215**	**0.0000**	**0.1112**

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	0.0416	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004
Energy	8.8000e-004	8.0300e-003	6.7500e-003	5.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	38.7866	38.7866	1.5500e-003	4.5000e-004	38.9574
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	2.1923	0.0000	2.1923	0.1296	0.0000	4.9131
Water						0.0000	0.0000		0.0000	0.0000	0.6390	7.5052	8.1442	0.0660	1.6200e-003	10.0323
Total	**0.0425**	**8.0300e-003**	**6.8700e-003**	**5.0000e-005**	**0.0000**	**6.1000e-004**	**6.1000e-004**	**0.0000**	**6.1000e-004**	**6.1000e-004**	**2.8313**	**46.2920**	**49.1233**	**0.1971**	**2.0700e-003**	**53.9030**

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	0.0416	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004
Energy	8.8000e-004	8.0300e-003	6.7500e-003	5.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	38.7866	38.7866	1.5500e-003	4.5000e-004	38.9574
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	2.1923	0.0000	2.1923	0.1296	0.0000	4.9131
Water						0.0000	0.0000		0.0000	0.0000	0.6390	7.5052	8.1442	0.0660	1.6200e-003	10.0313
Total	**0.0425**	**8.0300e-003**	**6.8700e-003**	**5.0000e-005**	**0.0000**	**6.1000e-004**	**6.1000e-004**	**0.0000**	**6.1000e-004**	**6.1000e-004**	**2.8313**	**46.2920**	**49.1233**	**0.1971**	**2.0700e-003**	**53.9020**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**5.0738e-003**	**0.0000**	**1.8923e-003**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/2/2014	1/9/2014	5	6	
2	Grading	Grading	1/10/2014	2/20/2014	5	30	
3	Paving	Paving	1/11/2014	2/28/2014	5	35	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Air Compressors	1	8.00	78	0.48
Site Preparation	Concrete/Industrial Saws	2	8.00	81	0.73
Site Preparation	Cranes	1	8.00	226	0.29
Site Preparation	Dumpers/Tenders	1	8.00	16	0.38
Grading	Air Compressors	1	8.00	78	0.48
Grading	Cranes	1	8.00	226	0.29
Grading	Dumpers/Tenders	1	8.00	16	0.38
Grading	Excavators	1	8.00	162	0.38
Grading	Signal Boards	1	8.00	6	0.82
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Dumpers/Tenders	1	8.00	16	0.38
Paving	Excavators	1	8.00	162	0.38
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Graders	1	8.00	174	0.41
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	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
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	18.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	12	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2014

Unmitigated Construction On-Site

Acres of Grading: 3

	ROG	NOx	CO	SO2	Fugitive 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					1.5900e-003	0.0000	1.5900e-003	1.7000e-004	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1155	0.0631	1.0000e-004		7.5500e-003	7.5500e-003		7.2300e-003	7.2300e-003	0.0000	8.7502	8.7502	1.8300e-003	0.0000	8.7885
Total	**0.0133**	**0.1155**	**0.0631**	**1.0000e-004**	**1.5900e-003**	**7.5500e-003**	**9.1400e-003**	**1.7000e-004**	**7.2300e-003**	**7.4000e-003**	**0.0000**	**8.7502**	**8.7502**	**1.8300e-003**	**0.0000**	**8.7885**

3.2 Site Preparation - 2014

Unmitigated Construction Off-Site

Acres of Grading: 3

	ROG	NOx	CO	SO2	Fugitive 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	1.3800e-003	4.2000e-004	4.4000e-003	1.0000e-005	5.9000e-004	1.0000e-005	6.0000e-004	1.6000e-004	1.0000e-005	1.6000e-004	0.0000	0.6158	0.6158	4.0000e-005	0.0000	0.6166
Total	**1.3800e-003**	**4.2000e-004**	**4.4000e-003**	**1.0000e-005**	**5.9000e-004**	**1.0000e-005**	**6.0000e-004**	**1.6000e-004**	**1.0000e-005**	**1.6000e-004**	**0.0000**	**0.6158**	**0.6158**	**4.0000e-005**	**0.0000**	**0.6166**

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					7.2000e-004	0.0000	7.2000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1154	0.0630	1.0000e-004		7.5400e-003	7.5400e-003		7.2300e-003	7.2300e-003	0.0000	8.7398	8.7398	1.8200e-003	0.0000	8.7781
Total	**0.0133**	**0.1154**	**0.0630**	**1.0000e-004**	**7.2000e-004**	**7.5400e-003**	**8.2600e-003**	**8.0000e-005**	**7.2300e-003**	**7.3100e-003**	**0.0000**	**8.7398**	**8.7398**	**1.8200e-003**	**0.0000**	**8.7781**

3.2 Site Preparation - 2014

Mitigated Construction Off-Site

Acres of Grading: 3

	ROG	NOx	CO	SO2	Fugitive 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	1.3800e-003	4.2000e-004	4.4000e-003	1.0000e-005	5.9000e-004	1.0000e-005	6.0000e-004	1.6000e-004	1.0000e-005	1.6000e-004	0.0000	0.6158	0.6158	4.0000e-005	0.0000	0.6166
Total	**1.3800e-003**	**4.2000e-004**	**4.4000e-003**	**1.0000e-005**	**5.9000e-004**	**1.0000e-005**	**6.0000e-004**	**1.6000e-004**	**1.0000e-005**	**1.6000e-004**	**0.0000**	**0.6158**	**0.6158**	**4.0000e-005**	**0.0000**	**0.6166**

3.3 Grading - 2014

Unmitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0113	0.0000	0.0113	6.2100e-003	0.0000	6.2100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0484	0.4411	0.2600	4.0000e-004		0.0273	0.0273		0.0261	0.0261	0.0000	36.5622	36.5622	8.3100e-003	0.0000	36.7367
Total	**0.0484**	**0.4411**	**0.2600**	**4.0000e-004**	**0.0113**	**0.0273**	**0.0386**	**6.2100e-003**	**0.0261**	**0.0323**	**0.0000**	**36.5622**	**36.5622**	**8.3100e-003**	**0.0000**	**36.7367**

3.3 Grading - 2014

Unmitigated Construction Off-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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	4.9000e-004	3.4200e-003	2.3600e-003	1.0000e-005	1.5000e-004	6.0000e-005	2.1000e-004	4.0000e-005	6.0000e-005	1.0000e-004	0.0000	0.6282	0.6282	1.0000e-005	0.0000	0.6283
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.6700e-003	2.3500e-003	0.0244	4.0000e-005	3.2900e-003	4.0000e-005	3.3200e-003	8.7000e-004	3.0000e-005	9.1000e-004	0.0000	3.4208	3.4208	2.1000e-004	0.0000	3.4253
Total	**8.1600e-003**	**5.7700e-003**	**0.0268**	**5.0000e-005**	**3.4400e-003**	**1.0000e-004**	**3.5300e-003**	**9.1000e-004**	**9.0000e-005**	**1.0100e-003**	**0.0000**	**4.0490**	**4.0490**	**2.2000e-004**	**0.0000**	**4.0536**

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					5.0800e-003	0.0000	5.0800e-003	2.7900e-003	0.0000	2.7900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0483	0.4406	0.2597	4.0000e-004		0.0273	0.0273		0.0260	0.0260	0.0000	36.5187	36.5187	8.3000e-003	0.0000	36.6930
Total	**0.0483**	**0.4406**	**0.2597**	**4.0000e-004**	**5.0800e-003**	**0.0273**	**0.0323**	**2.7900e-003**	**0.0260**	**0.0288**	**0.0000**	**36.5187**	**36.5187**	**8.3000e-003**	**0.0000**	**36.6930**

3.3 Grading - 2014

Mitigated Construction Off-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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	4.9000e-004	3.4200e-003	2.3600e-003	1.0000e-005	3.5300e-003	6.0000e-005	3.5900e-003	8.7000e-004	6.0000e-005	9.3000e-004	0.0000	0.6282	0.6282	1.0000e-005	0.0000	0.6283
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.6700e-003	2.3500e-003	0.0244	4.0000e-005	3.2900e-003	4.0000e-005	3.3200e-003	8.7000e-004	3.0000e-005	9.1000e-004	0.0000	3.4208	3.4208	2.1000e-004	0.0000	3.4253
Total	**8.1600e-003**	**5.7700e-003**	**0.0268**	**5.0000e-005**	**6.8200e-003**	**1.0000e-004**	**6.9100e-003**	**1.7400e-003**	**9.0000e-005**	**1.8400e-003**	**0.0000**	**4.0490**	**4.0490**	**2.2000e-004**	**0.0000**	**4.0536**

3.4 Paving - 2014

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	0.0523	0.5672	0.3446	5.4000e-004		0.0308	0.0308		0.0284	0.0284	0.0000	50.0934	50.0934	0.0142	0.0000	50.3909
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0523**	**0.5672**	**0.3446**	**5.4000e-004**		**0.0308**	**0.0308**		**0.0284**	**0.0284**	**0.0000**	**50.0934**	**50.0934**	**0.0142**	**0.0000**	**50.3909**

3.4 Paving - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4800e-003	1.3700e-003	0.0143	2.0000e-005	1.9200e-003	2.0000e-005	1.9400e-003	5.1000e-004	2.0000e-005	5.3000e-004	0.0000	1.9955	1.9955	1.3000e-004	0.0000	1.9981
Total	**4.4800e-003**	**1.3700e-003**	**0.0143**	**2.0000e-005**	**1.9200e-003**	**2.0000e-005**	**1.9400e-003**	**5.1000e-004**	**2.0000e-005**	**5.3000e-004**	**0.0000**	**1.9955**	**1.9955**	**1.3000e-004**	**0.0000**	**1.9981**

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	0.0522	0.5666	0.3442	5.4000e-004		0.0308	0.0308		0.0284	0.0284	0.0000	50.0338	50.0338	0.0142	0.0000	50.3310
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0522**	**0.5666**	**0.3442**	**5.4000e-004**		**0.0308**	**0.0308**		**0.0284**	**0.0284**	**0.0000**	**50.0338**	**50.0338**	**0.0142**	**0.0000**	**50.3310**

3.4 Paving - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4800e-003	1.3700e-003	0.0143	2.0000e-005	1.9200e-003	2.0000e-005	1.9400e-003	5.1000e-004	2.0000e-005	5.3000e-004	0.0000	1.9955	1.9955	1.3000e-004	0.0000	1.9981
Total	**4.4800e-003**	**1.3700e-003**	**0.0143**	**2.0000e-005**	**1.9200e-003**	**2.0000e-005**	**1.9400e-003**	**5.1000e-004**	**2.0000e-005**	**5.3000e-004**	**0.0000**	**1.9955**	**1.9955**	**1.3000e-004**	**0.0000**	**1.9981**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.535275	0.058759	0.178478	0.127034	0.038632	0.006246	0.015618	0.028471	0.002426	0.003171	0.003696	0.000547	0.001645

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	30.0417	30.0417	1.3800e-003	2.9000e-004	30.1593
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	30.0417	30.0417	1.3800e-003	2.9000e-004	30.1593
NaturalGas Mitigated	8.8000e-004	8.0300e-003	6.7500e-003	5.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	8.7449	8.7449	1.7000e-004	1.6000e-004	8.7981
NaturalGas Unmitigated	8.8000e-004	8.0300e-003	6.7500e-003	5.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	8.7449	8.7449	1.7000e-004	1.6000e-004	8.7981

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	163873	8.8000e-004	8.0300e-003	6.7500e-003	5.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	8.7449	8.7449	1.7000e-004	1.6000e-004	8.7981
Total		**8.8000e-004**	**8.0300e-003**	**6.7500e-003**	**5.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**8.7449**	**8.7449**	**1.7000e-004**	**1.6000e-004**	**8.7981**

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					
General Light Industry	163873	8.8000e-004	8.0300e-003	6.7500e-003	5.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	8.7449	8.7449	1.7000e-004	1.6000e-004	8.7981
Total		**8.8000e-004**	**8.0300e-003**	**6.7500e-003**	**5.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**8.7449**	**8.7449**	**1.7000e-004**	**1.6000e-004**	**8.7981**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	104980	30.0417	1.3800e-003	2.9000e-004	30.1593
Total		**30.0417**	**1.3800e-003**	**2.9000e-004**	**30.1593**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	104980	30.0417	1.3800e-003	2.9000e-004	30.1593
Total		**30.0417**	**1.3800e-003**	**2.9000e-004**	**30.1593**

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	0.0416	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004
Unmitigated	0.0416	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-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	0.0101					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0315					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004
Total	**0.0416**	**0.0000**	**1.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-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	0.0101					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0315					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004
Total	**0.0416**	**0.0000**	**1.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	8.1442	0.0660	1.6200e-003	10.0313
Unmitigated	8.1442	0.0660	1.6200e-003	10.0323

7.2 Water by Land Use

Unmitigated

	Indoor/ Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	2.01419 / 0	8.1442	0.0660	1.6200e-003	10.0323
Total		**8.1442**	**0.0660**	**1.6200e-003**	**10.0323**

7.2 Water by Land Use

Mitigated

	Indoor/ Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	2.01419 / 0	8.1442	0.0660	1.6200e-003	10.0313
Total		**8.1442**	**0.0660**	**1.6200e-003**	**10.0313**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.1923	0.1296	0.0000	4.9131
Unmitigated	2.1923	0.1296	0.0000	4.9131

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	10.8	2.1923	0.1296	0.0000	4.9131
Total		**2.1923**	**0.1296**	**0.0000**	**4.9131**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	10.8	2.1923	0.1296	0.0000	4.9131
Total		**2.1923**	**0.1296**	**0.0000**	**4.9131**

9.0 Operational Offroad

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

10.0 Vegetation

Griffith Park Recycling Project - Pipelines Phase 2

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	8.71	1000sqft	0.20	8,712.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2015
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - acreage adjusted to match contractor estimate

Construction Phase - Adjust phasing to match contractor data

Off-road Equipment - Adjust equipment list to match contractor data

Off-road Equipment - Adjust equipment list to match contractor data

Off-road Equipment - Adjust equipment list to match contractor data

Trips and VMT - Gang trucks and welder trucks added to worker trips

Grading -

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	38.00
tblConstructionPhase	NumDays	5.00	7.00
tblConstructionPhase	NumDays	1.00	5.00
tblConstructionPhase	PhaseStartDate	8/8/2015	8/10/2015
tblGrading	AcresOfGrading	2.50	3.00
tblGrading	MaterialExported	0.00	1,520.00
tblGrading	MaterialImported	0.00	1,300.00
tblLandUse	LandUseSquareFeet	8,710.00	8,712.00
tblOffRoadEquipment	HorsePower	130.00	80.00
tblOffRoadEquipment	LoadFactor	0.36	0.38
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2015
tblTripsAndVMT	HaulingTripNumber	353.00	18.00
tblTripsAndVMT	WorkerTripNumber	30.00	10.00
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	2.87	2.78
tblVehicleEF	HHD	2.07	2.26
tblVehicleEF	HHD	65.01	70.66
tblVehicleEF	HHD	571.32	576.70
tblVehicleEF	HHD	1,684.32	1,704.18
tblVehicleEF	HHD	62.34	67.83
tblVehicleEF	HHD	0.03	0.03

tblVehicleEF	HHD	5.34	5.80
tblVehicleEF	HHD	7.09	8.09
tblVehicleEF	HHD	3.87	3.99
tblVehicleEF	HHD	0.02	0.03
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	0.12	0.15
tblVehicleEF	HHD	3.7990e-003	5.3500e-003
tblVehicleEF	HHD	0.02	0.03
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.6540e-003	8.6480e-003
tblVehicleEF	HHD	0.11	0.14
tblVehicleEF	HHD	3.0470e-003	4.2300e-003
tblVehicleEF	HHD	2.3810e-003	3.0220e-003
tblVehicleEF	HHD	0.14	0.19
tblVehicleEF	HHD	0.53	0.52
tblVehicleEF	HHD	1.5720e-003	1.9270e-003
tblVehicleEF	HHD	0.29	0.32
tblVehicleEF	HHD	0.57	0.74
tblVehicleEF	HHD	2.35	2.81
tblVehicleEF	HHD	5.5900e-003	5.5860e-003
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	1.7330e-003	1.8850e-003
tblVehicleEF	HHD	2.3810e-003	3.0220e-003
tblVehicleEF	HHD	0.14	0.19
tblVehicleEF	HHD	0.60	0.59
tblVehicleEF	HHD	1.5720e-003	1.9270e-003
tblVehicleEF	HHD	0.33	0.37

tblVehicleEF	HHD	0.57	0.74
tblVehicleEF	HHD	2.52	3.01
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	2.09	2.02
tblVehicleEF	HHD	2.08	2.27
tblVehicleEF	HHD	54.29	60.06
tblVehicleEF	HHD	605.27	610.97
tblVehicleEF	HHD	1,684.32	1,704.18
tblVehicleEF	HHD	62.34	67.83
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	5.51	5.98
tblVehicleEF	HHD	6.70	7.65
tblVehicleEF	HHD	3.71	3.83
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	0.12	0.15
tblVehicleEF	HHD	3.7990e-003	5.3500e-003
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.6540e-003	8.6480e-003
tblVehicleEF	HHD	0.11	0.14
tblVehicleEF	HHD	3.0470e-003	4.2300e-003
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tblVehicleEF	HHD	0.50	0.49
tblVehicleEF	HHD	2.4480e-003	3.0260e-003

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tblVehicleEF	HHD	3.7080e-003	4.7100e-003
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tblVehicleEF	HHD	0.57	0.56
tblVehicleEF	HHD	2.4480e-003	3.0260e-003
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tblVehicleEF	HHD	0.56	0.73
tblVehicleEF	HHD	2.14	2.55
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tblVehicleEF	HHD	0.01	0.01
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tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.03	0.03

tblVehicleEF	HHD	0.12	0.15
tblVehicleEF	HHD	3.7990e-003	5.3500e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.6540e-003	8.6480e-003
tblVehicleEF	HHD	0.11	0.14
tblVehicleEF	HHD	3.0470e-003	4.2300e-003
tblVehicleEF	HHD	2.6270e-003	3.3810e-003
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tblVehicleEF	HHD	0.57	0.56
tblVehicleEF	HHD	1.5950e-003	1.9690e-003
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tblVehicleEF	HHD	2.6270e-003	3.3810e-003
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tblVehicleEF	HHD	1.5950e-003	1.9690e-003
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tblVehicleEF	HHD	2.60	3.11
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tblVehicleEF	LDA	0.01	0.01
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tblVehicleEF	LDA	2.38	2.69

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tblVehicleEF	LDA	64.92	67.11
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tblVehicleEF	LDA	2.8610e-003	2.9560e-003
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tblVehicleEF	LDA	2.6160e-003	2.6930e-003
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tblVehicleEF	LDA	0.15	0.16
tblVehicleEF	LDA	0.06	0.06
tblVehicleEF	LDA	0.04	0.05
tblVehicleEF	LDA	0.34	0.37
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tblVehicleEF	LDA	7.7700e-004	7.8200e-004
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tblVehicleEF	LDA	0.15	0.16
tblVehicleEF	LDA	0.06	0.06
tblVehicleEF	LDA	0.06	0.06
tblVehicleEF	LDA	0.34	0.37
tblVehicleEF	LDA	0.21	0.24
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	1.39	1.56
tblVehicleEF	LDA	1.89	2.14
tblVehicleEF	LDA	333.41	345.38

tblVehicleEF	LDA	64.92	67.11
tblVehicleEF	LDA	0.53	0.54
tblVehicleEF	LDA	0.10	0.11
tblVehicleEF	LDA	0.15	0.17
tblVehicleEF	LDA	2.2850e-003	2.4600e-003
tblVehicleEF	LDA	2.8610e-003	2.9560e-003
tblVehicleEF	LDA	2.0900e-003	2.2430e-003
tblVehicleEF	LDA	2.6160e-003	2.6930e-003
tblVehicleEF	LDA	0.10	0.12
tblVehicleEF	LDA	0.16	0.17
tblVehicleEF	LDA	0.08	0.09
tblVehicleEF	LDA	0.04	0.05
tblVehicleEF	LDA	0.32	0.35
tblVehicleEF	LDA	0.16	0.19
tblVehicleEF	LDA	3.8940e-003	3.8860e-003
tblVehicleEF	LDA	7.6800e-004	7.7200e-004
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tblVehicleEF	LDA	0.16	0.17
tblVehicleEF	LDA	0.08	0.09
tblVehicleEF	LDA	0.06	0.07
tblVehicleEF	LDA	0.32	0.35
tblVehicleEF	LDA	0.17	0.20
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	1.26	1.41
tblVehicleEF	LDA	2.49	2.81
tblVehicleEF	LDA	313.85	325.11
tblVehicleEF	LDA	64.92	67.11

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tblVehicleEF	LDA	0.11	0.12
tblVehicleEF	LDA	0.16	0.19
tblVehicleEF	LDA	2.2850e-003	2.4600e-003
tblVehicleEF	LDA	2.8610e-003	2.9560e-003
tblVehicleEF	LDA	2.0900e-003	2.2430e-003
tblVehicleEF	LDA	2.6160e-003	2.6930e-003
tblVehicleEF	LDA	0.07	0.08
tblVehicleEF	LDA	0.17	0.19
tblVehicleEF	LDA	0.05	0.06
tblVehicleEF	LDA	0.04	0.05
tblVehicleEF	LDA	0.38	0.42
tblVehicleEF	LDA	0.20	0.23
tblVehicleEF	LDA	3.6630e-003	3.6560e-003
tblVehicleEF	LDA	7.7900e-004	7.8400e-004
tblVehicleEF	LDA	0.07	0.08
tblVehicleEF	LDA	0.17	0.19
tblVehicleEF	LDA	0.05	0.06
tblVehicleEF	LDA	0.05	0.06
tblVehicleEF	LDA	0.38	0.42
tblVehicleEF	LDA	0.21	0.25
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tblVehicleEF	LDT1	0.03	0.03
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tblVehicleEF	LDT1	0.06	0.06

tblVehicleEF	LDT1	0.35	0.38
tblVehicleEF	LDT1	0.33	0.36
tblVehicleEF	LDT1	5.7580e-003	6.1870e-003
tblVehicleEF	LDT1	5.5640e-003	5.8970e-003
tblVehicleEF	LDT1	5.2830e-003	5.6590e-003
tblVehicleEF	LDT1	5.1080e-003	5.3950e-003
tblVehicleEF	LDT1	0.19	0.20
tblVehicleEF	LDT1	0.35	0.36
tblVehicleEF	LDT1	0.14	0.15
tblVehicleEF	LDT1	0.11	0.13
tblVehicleEF	LDT1	1.25	1.30
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tblVehicleEF	LDT1	0.35	0.36
tblVehicleEF	LDT1	0.14	0.15
tblVehicleEF	LDT1	0.15	0.17
tblVehicleEF	LDT1	1.25	1.30
tblVehicleEF	LDT1	0.49	0.54
tblVehicleEF	LDT1	0.03	0.04
tblVehicleEF	LDT1	0.03	0.03
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tblVehicleEF	LDT1	4.68	5.09
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tblVehicleEF	LDT1	0.30	0.33

tblVehicleEF	LDT1	0.31	0.33
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tblVehicleEF	LDT1	5.5640e-003	5.8970e-003
tblVehicleEF	LDT1	5.2830e-003	5.6590e-003
tblVehicleEF	LDT1	5.1080e-003	5.3950e-003
tblVehicleEF	LDT1	0.30	0.31
tblVehicleEF	LDT1	0.36	0.38
tblVehicleEF	LDT1	0.21	0.22
tblVehicleEF	LDT1	0.12	0.14
tblVehicleEF	LDT1	1.15	1.20
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tblVehicleEF	LDT1	9.2500e-004	9.3300e-004
tblVehicleEF	LDT1	0.30	0.31
tblVehicleEF	LDT1	0.36	0.38
tblVehicleEF	LDT1	0.21	0.22
tblVehicleEF	LDT1	0.15	0.17
tblVehicleEF	LDT1	1.15	1.20
tblVehicleEF	LDT1	0.42	0.46
tblVehicleEF	LDT1	0.03	0.04
tblVehicleEF	LDT1	0.03	0.03
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tblVehicleEF	LDT1	0.06	0.06
tblVehicleEF	LDT1	0.34	0.37
tblVehicleEF	LDT1	0.34	0.37

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tblVehicleEF	LDT1	5.5640e-003	5.8970e-003
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tblVehicleEF	LDT1	5.1080e-003	5.3950e-003
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tblVehicleEF	LDT1	0.40	0.42
tblVehicleEF	LDT1	0.14	0.14
tblVehicleEF	LDT1	0.11	0.13
tblVehicleEF	LDT1	1.48	1.55
tblVehicleEF	LDT1	0.47	0.52
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tblVehicleEF	LDT1	9.5100e-004	9.6000e-004
tblVehicleEF	LDT1	0.20	0.21
tblVehicleEF	LDT1	0.40	0.42
tblVehicleEF	LDT1	0.14	0.14
tblVehicleEF	LDT1	0.15	0.17
tblVehicleEF	LDT1	1.48	1.55
tblVehicleEF	LDT1	0.51	0.56
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tblVehicleEF	LDT2	0.02	0.02
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tblVehicleEF	LDT2	3.51	3.90
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tblVehicleEF	LDT2	91.31	93.61
tblVehicleEF	LDT2	0.18	0.18
tblVehicleEF	LDT2	0.22	0.25
tblVehicleEF	LDT2	0.34	0.38
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tblVehicleEF	LDT2	2.8740e-003	2.9410e-003
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tblVehicleEF	LDT2	2.6420e-003	2.6960e-003
tblVehicleEF	LDT2	0.08	0.08
tblVehicleEF	LDT2	0.18	0.18
tblVehicleEF	LDT2	0.07	0.07
tblVehicleEF	LDT2	0.05	0.06
tblVehicleEF	LDT2	0.57	0.60
tblVehicleEF	LDT2	0.27	0.30
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tblVehicleEF	LDT2	1.0620e-003	1.0680e-003
tblVehicleEF	LDT2	0.08	0.08
tblVehicleEF	LDT2	0.18	0.18
tblVehicleEF	LDT2	0.07	0.07
tblVehicleEF	LDT2	0.07	0.08
tblVehicleEF	LDT2	0.57	0.60
tblVehicleEF	LDT2	0.29	0.32
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.02	0.02
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tblVehicleEF	LDT2	2.78	3.09
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tblVehicleEF	LDT2	0.18	0.18
tblVehicleEF	LDT2	0.19	0.22
tblVehicleEF	LDT2	0.31	0.35
tblVehicleEF	LDT2	2.4060e-003	2.5700e-003
tblVehicleEF	LDT2	2.8740e-003	2.9410e-003

tblVehicleEF	LDT2	2.2050e-003	2.3500e-003
tblVehicleEF	LDT2	2.6420e-003	2.6960e-003
tblVehicleEF	LDT2	0.12	0.13
tblVehicleEF	LDT2	0.18	0.19
tblVehicleEF	LDT2	0.10	0.10
tblVehicleEF	LDT2	0.05	0.06
tblVehicleEF	LDT2	0.53	0.56
tblVehicleEF	LDT2	0.23	0.26
tblVehicleEF	LDT2	5.3030e-003	5.2950e-003
tblVehicleEF	LDT2	1.0490e-003	1.0540e-003
tblVehicleEF	LDT2	0.12	0.13
tblVehicleEF	LDT2	0.18	0.19
tblVehicleEF	LDT2	0.10	0.10
tblVehicleEF	LDT2	0.08	0.09
tblVehicleEF	LDT2	0.53	0.56
tblVehicleEF	LDT2	0.25	0.28
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.02	0.02
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tblVehicleEF	LDT2	0.22	0.24
tblVehicleEF	LDT2	0.34	0.38
tblVehicleEF	LDT2	2.4060e-003	2.5700e-003
tblVehicleEF	LDT2	2.8740e-003	2.9410e-003
tblVehicleEF	LDT2	2.2050e-003	2.3500e-003

tblVehicleEF	LDT2	2.6420e-003	2.6960e-003
tblVehicleEF	LDT2	0.08	0.08
tblVehicleEF	LDT2	0.20	0.21
tblVehicleEF	LDT2	0.07	0.07
tblVehicleEF	LDT2	0.05	0.06
tblVehicleEF	LDT2	0.67	0.71
tblVehicleEF	LDT2	0.28	0.31
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tblVehicleEF	LDT2	1.0650e-003	1.0710e-003
tblVehicleEF	LDT2	0.08	0.08
tblVehicleEF	LDT2	0.20	0.21
tblVehicleEF	LDT2	0.07	0.07
tblVehicleEF	LDT2	0.07	0.08
tblVehicleEF	LDT2	0.67	0.71
tblVehicleEF	LDT2	0.30	0.33
tblVehicleEF	LHD1	1.3720e-003	1.3770e-003
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	0.20	0.20
tblVehicleEF	LHD1	1.99	2.19
tblVehicleEF	LHD1	6.12	6.49
tblVehicleEF	LHD1	8.14	8.22
tblVehicleEF	LHD1	598.53	602.22
tblVehicleEF	LHD1	47.83	48.16
tblVehicleEF	LHD1	0.04	0.04
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	1.24	1.34
tblVehicleEF	LHD1	1.65	1.68

tblVehicleEF	LHD1	3.6900e-004	3.7400e-004
tblVehicleEF	LHD1	0.04	0.04
tblVehicleEF	LHD1	8.7180e-003	8.7210e-003
tblVehicleEF	LHD1	7.9310e-003	8.3690e-003
tblVehicleEF	LHD1	1.6410e-003	1.7820e-003
tblVehicleEF	LHD1	3.4000e-004	3.4400e-004
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	7.2990e-003	7.7020e-003
tblVehicleEF	LHD1	1.5000e-003	1.6270e-003
tblVehicleEF	LHD1	3.2200e-003	3.3330e-003
tblVehicleEF	LHD1	0.08	0.08
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	1.9020e-003	1.9270e-003
tblVehicleEF	LHD1	0.14	0.15
tblVehicleEF	LHD1	0.43	0.43
tblVehicleEF	LHD1	0.57	0.60
tblVehicleEF	LHD1	8.6000e-005	8.7000e-005
tblVehicleEF	LHD1	6.1190e-003	6.0980e-003
tblVehicleEF	LHD1	6.0400e-004	6.0900e-004
tblVehicleEF	LHD1	3.2200e-003	3.3330e-003
tblVehicleEF	LHD1	0.08	0.08
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	1.9020e-003	1.9270e-003
tblVehicleEF	LHD1	0.16	0.18
tblVehicleEF	LHD1	0.43	0.43
tblVehicleEF	LHD1	0.60	0.64
tblVehicleEF	LHD1	1.3720e-003	1.3770e-003
tblVehicleEF	LHD1	0.02	0.02

tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	0.20	0.20
tblVehicleEF	LHD1	2.02	2.22
tblVehicleEF	LHD1	4.95	5.25
tblVehicleEF	LHD1	8.14	8.22
tblVehicleEF	LHD1	598.53	602.22
tblVehicleEF	LHD1	47.83	48.16
tblVehicleEF	LHD1	0.04	0.04
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	1.14	1.23
tblVehicleEF	LHD1	1.59	1.61
tblVehicleEF	LHD1	3.6900e-004	3.7400e-004
tblVehicleEF	LHD1	0.04	0.04
tblVehicleEF	LHD1	8.7180e-003	8.7210e-003
tblVehicleEF	LHD1	7.9310e-003	8.3690e-003
tblVehicleEF	LHD1	1.6410e-003	1.7820e-003
tblVehicleEF	LHD1	3.4000e-004	3.4400e-004
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	7.2990e-003	7.7020e-003
tblVehicleEF	LHD1	1.5000e-003	1.6270e-003
tblVehicleEF	LHD1	4.8240e-003	5.0030e-003
tblVehicleEF	LHD1	0.08	0.08
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	2.7710e-003	2.8300e-003
tblVehicleEF	LHD1	0.14	0.16
tblVehicleEF	LHD1	0.41	0.42
tblVehicleEF	LHD1	0.50	0.52
tblVehicleEF	LHD1	8.6000e-005	8.7000e-005

tblVehicleEF	LHD1	6.1200e-003	6.0990e-003
tblVehicleEF	LHD1	5.8300e-004	5.8700e-004
tblVehicleEF	LHD1	4.8240e-003	5.0030e-003
tblVehicleEF	LHD1	0.08	0.08
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	2.7710e-003	2.8300e-003
tblVehicleEF	LHD1	0.17	0.18
tblVehicleEF	LHD1	0.41	0.42
tblVehicleEF	LHD1	0.53	0.56
tblVehicleEF	LHD1	1.3720e-003	1.3770e-003
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	0.20	0.20
tblVehicleEF	LHD1	1.98	2.18
tblVehicleEF	LHD1	6.32	6.71
tblVehicleEF	LHD1	8.14	8.22
tblVehicleEF	LHD1	598.53	602.22
tblVehicleEF	LHD1	47.83	48.16
tblVehicleEF	LHD1	0.04	0.04
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	1.21	1.31
tblVehicleEF	LHD1	1.66	1.69
tblVehicleEF	LHD1	3.6900e-004	3.7400e-004
tblVehicleEF	LHD1	0.04	0.04
tblVehicleEF	LHD1	8.7180e-003	8.7210e-003
tblVehicleEF	LHD1	7.9310e-003	8.3690e-003
tblVehicleEF	LHD1	1.6410e-003	1.7820e-003
tblVehicleEF	LHD1	3.4000e-004	3.4400e-004

tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	7.2990e-003	7.7020e-003
tblVehicleEF	LHD1	1.5000e-003	1.6270e-003
tblVehicleEF	LHD1	3.5320e-003	3.6840e-003
tblVehicleEF	LHD1	0.09	0.09
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	1.9110e-003	1.9440e-003
tblVehicleEF	LHD1	0.14	0.15
tblVehicleEF	LHD1	0.46	0.47
tblVehicleEF	LHD1	0.58	0.61
tblVehicleEF	LHD1	8.6000e-005	8.7000e-005
tblVehicleEF	LHD1	6.1190e-003	6.0980e-003
tblVehicleEF	LHD1	6.0700e-004	6.1300e-004
tblVehicleEF	LHD1	3.5320e-003	3.6840e-003
tblVehicleEF	LHD1	0.09	0.09
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	1.9110e-003	1.9440e-003
tblVehicleEF	LHD1	0.16	0.18
tblVehicleEF	LHD1	0.46	0.47
tblVehicleEF	LHD1	0.62	0.65
tblVehicleEF	LHD2	1.1120e-003	1.1150e-003
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	0.16	0.16
tblVehicleEF	LHD2	1.44	1.65
tblVehicleEF	LHD2	4.21	4.59
tblVehicleEF	LHD2	8.92	9.01
tblVehicleEF	LHD2	572.59	576.77

tblVehicleEF	LHD2	35.16	35.55
tblVehicleEF	LHD2	6.2860e-003	6.2460e-003
tblVehicleEF	LHD2	0.08	0.08
tblVehicleEF	LHD2	2.03	2.19
tblVehicleEF	LHD2	1.17	1.19
tblVehicleEF	LHD2	9.2100e-004	9.3000e-004
tblVehicleEF	LHD2	0.06	0.06
tblVehicleEF	LHD2	9.7080e-003	9.7170e-003
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	1.1620e-003	1.3370e-003
tblVehicleEF	LHD2	8.4700e-004	8.5600e-004
tblVehicleEF	LHD2	0.03	0.03
tblVehicleEF	LHD2	2.4270e-003	2.4290e-003
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	1.0440e-003	1.1950e-003
tblVehicleEF	LHD2	2.2480e-003	2.4100e-003
tblVehicleEF	LHD2	0.06	0.06
tblVehicleEF	LHD2	0.03	0.03
tblVehicleEF	LHD2	1.3090e-003	1.3700e-003
tblVehicleEF	LHD2	0.12	0.14
tblVehicleEF	LHD2	0.33	0.34
tblVehicleEF	LHD2	0.39	0.42
tblVehicleEF	LHD2	5.7840e-003	5.7700e-003
tblVehicleEF	LHD2	4.3800e-004	4.4600e-004
tblVehicleEF	LHD2	2.2480e-003	2.4100e-003
tblVehicleEF	LHD2	0.06	0.06
tblVehicleEF	LHD2	0.03	0.03
tblVehicleEF	LHD2	1.3090e-003	1.3700e-003

tblVehicleEF	LHD2	0.15	0.16
tblVehicleEF	LHD2	0.33	0.34
tblVehicleEF	LHD2	0.42	0.45
tblVehicleEF	LHD2	1.1120e-003	1.1150e-003
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	0.16	0.16
tblVehicleEF	LHD2	1.45	1.66
tblVehicleEF	LHD2	3.44	3.76
tblVehicleEF	LHD2	8.92	9.01
tblVehicleEF	LHD2	572.59	576.77
tblVehicleEF	LHD2	35.16	35.55
tblVehicleEF	LHD2	6.2860e-003	6.2460e-003
tblVehicleEF	LHD2	0.08	0.08
tblVehicleEF	LHD2	1.91	2.05
tblVehicleEF	LHD2	1.12	1.15
tblVehicleEF	LHD2	9.2100e-004	9.3000e-004
tblVehicleEF	LHD2	0.06	0.06
tblVehicleEF	LHD2	9.7080e-003	9.7170e-003
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	1.1620e-003	1.3370e-003
tblVehicleEF	LHD2	8.4700e-004	8.5600e-004
tblVehicleEF	LHD2	0.03	0.03
tblVehicleEF	LHD2	2.4270e-003	2.4290e-003
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	1.0440e-003	1.1950e-003
tblVehicleEF	LHD2	3.3710e-003	3.6230e-003
tblVehicleEF	LHD2	0.06	0.06

tblVehicleEF	LHD2	0.03	0.03
tblVehicleEF	LHD2	1.9180e-003	2.0270e-003
tblVehicleEF	LHD2	0.13	0.14
tblVehicleEF	LHD2	0.32	0.33
tblVehicleEF	LHD2	0.34	0.37
tblVehicleEF	LHD2	5.7840e-003	5.7700e-003
tblVehicleEF	LHD2	4.2500e-004	4.3100e-004
tblVehicleEF	LHD2	3.3710e-003	3.6230e-003
tblVehicleEF	LHD2	0.06	0.06
tblVehicleEF	LHD2	0.03	0.03
tblVehicleEF	LHD2	1.9180e-003	2.0270e-003
tblVehicleEF	LHD2	0.15	0.16
tblVehicleEF	LHD2	0.32	0.33
tblVehicleEF	LHD2	0.37	0.40
tblVehicleEF	LHD2	1.1120e-003	1.1150e-003
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	0.16	0.16
tblVehicleEF	LHD2	1.44	1.64
tblVehicleEF	LHD2	4.35	4.74
tblVehicleEF	LHD2	8.92	9.01
tblVehicleEF	LHD2	572.59	576.77
tblVehicleEF	LHD2	35.16	35.55
tblVehicleEF	LHD2	6.2860e-003	6.2460e-003
tblVehicleEF	LHD2	0.08	0.08
tblVehicleEF	LHD2	1.99	2.15
tblVehicleEF	LHD2	1.18	1.20
tblVehicleEF	LHD2	9.2100e-004	9.3000e-004

tblVehicleEF	LHD2	0.06	0.06
tblVehicleEF	LHD2	9.7080e-003	9.7170e-003
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	1.1620e-003	1.3370e-003
tblVehicleEF	LHD2	8.4700e-004	8.5600e-004
tblVehicleEF	LHD2	0.03	0.03
tblVehicleEF	LHD2	2.4270e-003	2.4290e-003
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	1.0440e-003	1.1950e-003
tblVehicleEF	LHD2	2.4630e-003	2.6660e-003
tblVehicleEF	LHD2	0.07	0.07
tblVehicleEF	LHD2	0.03	0.03
tblVehicleEF	LHD2	1.3050e-003	1.3740e-003
tblVehicleEF	LHD2	0.12	0.14
tblVehicleEF	LHD2	0.36	0.38
tblVehicleEF	LHD2	0.40	0.43
tblVehicleEF	LHD2	5.7840e-003	5.7700e-003
tblVehicleEF	LHD2	4.4100e-004	4.4800e-004
tblVehicleEF	LHD2	2.4630e-003	2.6660e-003
tblVehicleEF	LHD2	0.07	0.07
tblVehicleEF	LHD2	0.03	0.03
tblVehicleEF	LHD2	1.3050e-003	1.3740e-003
tblVehicleEF	LHD2	0.15	0.16
tblVehicleEF	LHD2	0.36	0.38
tblVehicleEF	LHD2	0.43	0.46
tblVehicleEF	MCY	21.93	22.89
tblVehicleEF	MCY	9.77	9.71
tblVehicleEF	MCY	147.72	147.17

tblVehicleEF	MCY	45.02	46.38
tblVehicleEF	MCY	3.6930e-003	3.6960e-003
tblVehicleEF	MCY	1.17	1.19
tblVehicleEF	MCY	0.31	0.31
tblVehicleEF	MCY	0.04	0.04
tblVehicleEF	MCY	5.9100e-004	7.0000e-004
tblVehicleEF	MCY	2.0000e-003	2.3630e-003
tblVehicleEF	MCY	4.7600e-004	5.6000e-004
tblVehicleEF	MCY	1.5760e-003	1.8490e-003
tblVehicleEF	MCY	0.94	0.95
tblVehicleEF	MCY	0.47	0.50
tblVehicleEF	MCY	0.56	0.57
tblVehicleEF	MCY	2.47	2.51
tblVehicleEF	MCY	1.70	1.88
tblVehicleEF	MCY	2.14	2.17
tblVehicleEF	MCY	1.9370e-003	1.9330e-003
tblVehicleEF	MCY	6.8300e-004	6.9200e-004
tblVehicleEF	MCY	0.94	0.95
tblVehicleEF	MCY	0.47	0.50
tblVehicleEF	MCY	0.56	0.57
tblVehicleEF	MCY	2.71	2.76
tblVehicleEF	MCY	1.70	1.88
tblVehicleEF	MCY	2.30	2.34
tblVehicleEF	MCY	20.87	21.75
tblVehicleEF	MCY	8.70	8.68
tblVehicleEF	MCY	147.72	147.17
tblVehicleEF	MCY	45.02	46.38
tblVehicleEF	MCY	3.6930e-003	3.6960e-003

tblVehicleEF	MCY	1.02	1.03
tblVehicleEF	MCY	0.29	0.29
tblVehicleEF	MCY	0.04	0.04
tblVehicleEF	MCY	5.9100e-004	7.0000e-004
tblVehicleEF	MCY	2.0000e-003	2.3630e-003
tblVehicleEF	MCY	4.7600e-004	5.6000e-004
tblVehicleEF	MCY	1.5760e-003	1.8490e-003
tblVehicleEF	MCY	1.51	1.53
tblVehicleEF	MCY	0.52	0.54
tblVehicleEF	MCY	0.93	0.95
tblVehicleEF	MCY	2.39	2.42
tblVehicleEF	MCY	1.58	1.75
tblVehicleEF	MCY	1.87	1.89
tblVehicleEF	MCY	1.9180e-003	1.9120e-003
tblVehicleEF	MCY	6.5700e-004	6.6700e-004
tblVehicleEF	MCY	1.51	1.53
tblVehicleEF	MCY	0.52	0.54
tblVehicleEF	MCY	0.93	0.95
tblVehicleEF	MCY	2.62	2.66
tblVehicleEF	MCY	1.58	1.75
tblVehicleEF	MCY	2.01	2.04
tblVehicleEF	MCY	22.13	23.10
tblVehicleEF	MCY	9.96	9.89
tblVehicleEF	MCY	147.72	147.17
tblVehicleEF	MCY	45.02	46.38
tblVehicleEF	MCY	3.6930e-003	3.6960e-003
tblVehicleEF	MCY	1.15	1.16
tblVehicleEF	MCY	0.31	0.31

tblVehicleEF	MCY	0.04	0.04
tblVehicleEF	MCY	5.9100e-004	7.0000e-004
tblVehicleEF	MCY	2.0000e-003	2.3630e-003
tblVehicleEF	MCY	4.7600e-004	5.6000e-004
tblVehicleEF	MCY	1.5760e-003	1.8490e-003
tblVehicleEF	MCY	1.04	1.05
tblVehicleEF	MCY	0.62	0.65
tblVehicleEF	MCY	0.53	0.55
tblVehicleEF	MCY	2.49	2.53
tblVehicleEF	MCY	1.98	2.17
tblVehicleEF	MCY	2.20	2.23
tblVehicleEF	MCY	1.9410e-003	1.9360e-003
tblVehicleEF	MCY	6.8700e-004	6.9600e-004
tblVehicleEF	MCY	1.04	1.05
tblVehicleEF	MCY	0.62	0.65
tblVehicleEF	MCY	0.53	0.55
tblVehicleEF	MCY	2.73	2.78
tblVehicleEF	MCY	1.98	2.17
tblVehicleEF	MCY	2.36	2.40
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	2.72	2.87
tblVehicleEF	MDV	5.50	5.80
tblVehicleEF	MDV	594.46	606.41
tblVehicleEF	MDV	118.36	120.57
tblVehicleEF	MDV	0.13	0.13
tblVehicleEF	MDV	0.35	0.37
tblVehicleEF	MDV	0.53	0.56

tblVehicleEF	MDV	2.7190e-003	2.8070e-003
tblVehicleEF	MDV	3.4680e-003	3.5390e-003
tblVehicleEF	MDV	2.4980e-003	2.5760e-003
tblVehicleEF	MDV	3.1910e-003	3.2530e-003
tblVehicleEF	MDV	0.09	0.09
tblVehicleEF	MDV	0.20	0.20
tblVehicleEF	MDV	0.08	0.08
tblVehicleEF	MDV	0.08	0.09
tblVehicleEF	MDV	0.65	0.64
tblVehicleEF	MDV	0.48	0.51
tblVehicleEF	MDV	6.4550e-003	6.4380e-003
tblVehicleEF	MDV	1.3610e-003	1.3650e-003
tblVehicleEF	MDV	0.09	0.09
tblVehicleEF	MDV	0.20	0.20
tblVehicleEF	MDV	0.08	0.08
tblVehicleEF	MDV	0.12	0.13
tblVehicleEF	MDV	0.65	0.64
tblVehicleEF	MDV	0.51	0.54
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	2.92	3.08
tblVehicleEF	MDV	4.36	4.60
tblVehicleEF	MDV	619.80	632.24
tblVehicleEF	MDV	118.36	120.57
tblVehicleEF	MDV	0.13	0.13
tblVehicleEF	MDV	0.30	0.33
tblVehicleEF	MDV	0.49	0.52
tblVehicleEF	MDV	2.7190e-003	2.8070e-003

tblVehicleEF	MDV	3.4680e-003	3.5390e-003
tblVehicleEF	MDV	2.4980e-003	2.5760e-003
tblVehicleEF	MDV	3.1910e-003	3.2530e-003
tblVehicleEF	MDV	0.14	0.14
tblVehicleEF	MDV	0.21	0.21
tblVehicleEF	MDV	0.12	0.12
tblVehicleEF	MDV	0.09	0.09
tblVehicleEF	MDV	0.60	0.60
tblVehicleEF	MDV	0.41	0.43
tblVehicleEF	MDV	6.7330e-003	6.7150e-003
tblVehicleEF	MDV	1.3410e-003	1.3430e-003
tblVehicleEF	MDV	0.14	0.14
tblVehicleEF	MDV	0.21	0.21
tblVehicleEF	MDV	0.12	0.12
tblVehicleEF	MDV	0.12	0.13
tblVehicleEF	MDV	0.60	0.60
tblVehicleEF	MDV	0.44	0.46
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	2.64	2.79
tblVehicleEF	MDV	5.75	6.06
tblVehicleEF	MDV	585.07	596.84
tblVehicleEF	MDV	118.36	120.57
tblVehicleEF	MDV	0.13	0.13
tblVehicleEF	MDV	0.34	0.36
tblVehicleEF	MDV	0.53	0.57
tblVehicleEF	MDV	2.7190e-003	2.8070e-003
tblVehicleEF	MDV	3.4680e-003	3.5390e-003

tblVehicleEF	MDV	2.4980e-003	2.5760e-003
tblVehicleEF	MDV	3.1910e-003	3.2530e-003
tblVehicleEF	MDV	0.09	0.09
tblVehicleEF	MDV	0.23	0.22
tblVehicleEF	MDV	0.08	0.08
tblVehicleEF	MDV	0.08	0.09
tblVehicleEF	MDV	0.76	0.75
tblVehicleEF	MDV	0.50	0.53
tblVehicleEF	MDV	6.3530e-003	6.3360e-003
tblVehicleEF	MDV	1.3660e-003	1.3690e-003
tblVehicleEF	MDV	0.09	0.09
tblVehicleEF	MDV	0.23	0.22
tblVehicleEF	MDV	0.08	0.08
tblVehicleEF	MDV	0.12	0.12
tblVehicleEF	MDV	0.76	0.75
tblVehicleEF	MDV	0.53	0.56
tblVehicleEF	MH	6.45	7.77
tblVehicleEF	MH	10.81	11.97
tblVehicleEF	MH	665.50	670.28
tblVehicleEF	MH	34.38	35.76
tblVehicleEF	MH	1.6460e-003	1.6450e-003
tblVehicleEF	MH	1.62	1.75
tblVehicleEF	MH	0.96	1.03
tblVehicleEF	MH	0.05	0.05
tblVehicleEF	MH	8.4570e-003	8.4600e-003
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	2.1980e-003	2.6470e-003
tblVehicleEF	MH	0.02	0.02

tblVehicleEF	MH	2.1140e-003	2.1150e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	1.8800e-003	2.2420e-003
tblVehicleEF	MH	1.43	1.54
tblVehicleEF	MH	0.10	0.11
tblVehicleEF	MH	0.58	0.63
tblVehicleEF	MH	0.21	0.25
tblVehicleEF	MH	2.28	2.33
tblVehicleEF	MH	0.68	0.78
tblVehicleEF	MH	6.8630e-003	6.8640e-003
tblVehicleEF	MH	5.4300e-004	5.7500e-004
tblVehicleEF	MH	1.43	1.54
tblVehicleEF	MH	0.10	0.11
tblVehicleEF	MH	0.58	0.63
tblVehicleEF	MH	0.25	0.29
tblVehicleEF	MH	2.28	2.33
tblVehicleEF	MH	0.73	0.83
tblVehicleEF	MH	6.46	7.76
tblVehicleEF	MH	8.61	9.56
tblVehicleEF	MH	665.50	670.28
tblVehicleEF	MH	34.38	35.76
tblVehicleEF	MH	1.6460e-003	1.6450e-003
tblVehicleEF	MH	1.47	1.59
tblVehicleEF	MH	0.92	0.98
tblVehicleEF	MH	0.05	0.05
tblVehicleEF	MH	8.4570e-003	8.4600e-003
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	2.1980e-003	2.6470e-003

tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	2.1140e-003	2.1150e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	1.8800e-003	2.2420e-003
tblVehicleEF	MH	2.04	2.20
tblVehicleEF	MH	0.10	0.11
tblVehicleEF	MH	0.81	0.88
tblVehicleEF	MH	0.21	0.25
tblVehicleEF	MH	2.23	2.27
tblVehicleEF	MH	0.57	0.64
tblVehicleEF	MH	5.0500e-004	5.3300e-004
tblVehicleEF	MH	2.04	2.20
tblVehicleEF	MH	0.10	0.11
tblVehicleEF	MH	0.81	0.88
tblVehicleEF	MH	0.25	0.29
tblVehicleEF	MH	2.23	2.27
tblVehicleEF	MH	0.61	0.69
tblVehicleEF	MH	6.44	7.77
tblVehicleEF	MH	11.21	12.41
tblVehicleEF	MH	665.50	670.28
tblVehicleEF	MH	34.38	35.76
tblVehicleEF	MH	1.6460e-003	1.6450e-003
tblVehicleEF	MH	1.59	1.71
tblVehicleEF	MH	0.97	1.04
tblVehicleEF	MH	0.05	0.05
tblVehicleEF	MH	8.4570e-003	8.4600e-003
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	2.1980e-003	2.6470e-003

tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	2.1140e-003	2.1150e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	1.8800e-003	2.2420e-003
tblVehicleEF	MH	1.68	1.82
tblVehicleEF	MH	0.13	0.14
tblVehicleEF	MH	0.62	0.67
tblVehicleEF	MH	0.21	0.25
tblVehicleEF	MH	2.41	2.46
tblVehicleEF	MH	0.70	0.80
tblVehicleEF	MH	6.8630e-003	6.8640e-003
tblVehicleEF	MH	5.5000e-004	5.8300e-004
tblVehicleEF	MH	1.68	1.82
tblVehicleEF	MH	0.13	0.14
tblVehicleEF	MH	0.62	0.67
tblVehicleEF	MH	0.25	0.29
tblVehicleEF	MH	2.41	2.46
tblVehicleEF	MH	0.75	0.86
tblVehicleEF	MHD	7.6240e-003	9.1490e-003
tblVehicleEF	MHD	6.0220e-003	7.6140e-003
tblVehicleEF	MHD	1.84	1.98
tblVehicleEF	MHD	1.50	1.81
tblVehicleEF	MHD	21.80	23.70
tblVehicleEF	MHD	608.92	606.65
tblVehicleEF	MHD	1,004.74	1,015.49
tblVehicleEF	MHD	59.48	62.16
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	6.68	7.20

tblVehicleEF	MHD	3.73	4.49
tblVehicleEF	MHD	2.24	2.37
tblVehicleEF	MHD	0.03	0.04
tblVehicleEF	MHD	0.11	0.11
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	0.09	0.12
tblVehicleEF	MHD	3.7660e-003	4.5660e-003
tblVehicleEF	MHD	0.03	0.04
tblVehicleEF	MHD	0.05	0.05
tblVehicleEF	MHD	2.7940e-003	2.7920e-003
tblVehicleEF	MHD	0.08	0.11
tblVehicleEF	MHD	3.1700e-003	3.8030e-003
tblVehicleEF	MHD	3.3930e-003	3.7860e-003
tblVehicleEF	MHD	0.15	0.17
tblVehicleEF	MHD	0.16	0.20
tblVehicleEF	MHD	2.0290e-003	2.2230e-003
tblVehicleEF	MHD	0.18	0.22
tblVehicleEF	MHD	0.60	0.67
tblVehicleEF	MHD	1.48	1.66
tblVehicleEF	MHD	5.9580e-003	5.8760e-003
tblVehicleEF	MHD	9.9050e-003	9.9130e-003
tblVehicleEF	MHD	9.9800e-004	1.0540e-003
tblVehicleEF	MHD	3.3930e-003	3.7860e-003
tblVehicleEF	MHD	0.15	0.17
tblVehicleEF	MHD	0.19	0.22
tblVehicleEF	MHD	2.0290e-003	2.2230e-003
tblVehicleEF	MHD	0.21	0.26
tblVehicleEF	MHD	0.60	0.67

tblVehicleEF	MHD	1.58	1.78
tblVehicleEF	MHD	7.1850e-003	8.6220e-003
tblVehicleEF	MHD	6.0220e-003	7.6140e-003
tblVehicleEF	MHD	1.33	1.44
tblVehicleEF	MHD	1.51	1.81
tblVehicleEF	MHD	17.92	19.59
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tblVehicleEF	MHD	1,004.74	1,015.49
tblVehicleEF	MHD	59.48	62.16
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	6.90	7.43
tblVehicleEF	MHD	3.50	4.22
tblVehicleEF	MHD	2.15	2.27
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	0.11	0.11
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	0.09	0.12
tblVehicleEF	MHD	3.7660e-003	4.5660e-003
tblVehicleEF	MHD	0.02	0.03
tblVehicleEF	MHD	0.05	0.05
tblVehicleEF	MHD	2.7940e-003	2.7920e-003
tblVehicleEF	MHD	0.08	0.11
tblVehicleEF	MHD	3.1700e-003	3.8030e-003
tblVehicleEF	MHD	5.1450e-003	5.7560e-003
tblVehicleEF	MHD	0.15	0.17
tblVehicleEF	MHD	0.15	0.19
tblVehicleEF	MHD	3.0340e-003	3.3540e-003
tblVehicleEF	MHD	0.18	0.22

tblVehicleEF	MHD	0.59	0.65
tblVehicleEF	MHD	1.28	1.43
tblVehicleEF	MHD	6.3120e-003	6.2250e-003
tblVehicleEF	MHD	9.9050e-003	9.9130e-003
tblVehicleEF	MHD	9.3100e-004	9.8300e-004
tblVehicleEF	MHD	5.1450e-003	5.7560e-003
tblVehicleEF	MHD	0.15	0.17
tblVehicleEF	MHD	0.18	0.21
tblVehicleEF	MHD	3.0340e-003	3.3540e-003
tblVehicleEF	MHD	0.21	0.26
tblVehicleEF	MHD	0.59	0.65
tblVehicleEF	MHD	1.37	1.53
tblVehicleEF	MHD	8.2310e-003	9.8770e-003
tblVehicleEF	MHD	6.0220e-003	7.6140e-003
tblVehicleEF	MHD	2.53	2.73
tblVehicleEF	MHD	1.50	1.81
tblVehicleEF	MHD	22.55	24.49
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tblVehicleEF	MHD	1,004.74	1,015.49
tblVehicleEF	MHD	59.48	62.16
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tblVehicleEF	MHD	6.39	6.88
tblVehicleEF	MHD	3.66	4.41
tblVehicleEF	MHD	2.26	2.39
tblVehicleEF	MHD	0.03	0.05
tblVehicleEF	MHD	0.11	0.11
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	0.09	0.12

tblVehicleEF	MHD	3.7660e-003	4.5660e-003
tblVehicleEF	MHD	0.03	0.05
tblVehicleEF	MHD	0.05	0.05
tblVehicleEF	MHD	2.7940e-003	2.7920e-003
tblVehicleEF	MHD	0.08	0.11
tblVehicleEF	MHD	3.1700e-003	3.8030e-003
tblVehicleEF	MHD	3.7670e-003	4.2380e-003
tblVehicleEF	MHD	0.18	0.21
tblVehicleEF	MHD	0.18	0.21
tblVehicleEF	MHD	2.0590e-003	2.2660e-003
tblVehicleEF	MHD	0.18	0.22
tblVehicleEF	MHD	0.65	0.73
tblVehicleEF	MHD	1.52	1.71
tblVehicleEF	MHD	5.4690e-003	5.3940e-003
tblVehicleEF	MHD	9.9050e-003	9.9130e-003
tblVehicleEF	MHD	1.0110e-003	1.0680e-003
tblVehicleEF	MHD	3.7670e-003	4.2380e-003
tblVehicleEF	MHD	0.18	0.21
tblVehicleEF	MHD	0.20	0.24
tblVehicleEF	MHD	2.0590e-003	2.2660e-003
tblVehicleEF	MHD	0.21	0.26
tblVehicleEF	MHD	0.65	0.73
tblVehicleEF	MHD	1.63	1.83
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	3.2580e-003	3.4320e-003
tblVehicleEF	OBUS	2.24	2.30
tblVehicleEF	OBUS	1.51	1.74
tblVehicleEF	OBUS	10.82	11.22

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tblVehicleEF	OBUS	1,118.26	1,120.43
tblVehicleEF	OBUS	36.38	37.05
tblVehicleEF	OBUS	2.4290e-003	2.4260e-003
tblVehicleEF	OBUS	6.46	7.28
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tblVehicleEF	OBUS	1.49	1.53
tblVehicleEF	OBUS	0.02	0.06
tblVehicleEF	OBUS	0.10	0.09
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.07	0.10
tblVehicleEF	OBUS	1.0180e-003	1.1480e-003
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tblVehicleEF	OBUS	0.04	0.04
tblVehicleEF	OBUS	2.6340e-003	2.6200e-003
tblVehicleEF	OBUS	0.06	0.09
tblVehicleEF	OBUS	8.9600e-004	1.0010e-003
tblVehicleEF	OBUS	9.3300e-004	9.2800e-004
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tblVehicleEF	OBUS	0.30	0.29
tblVehicleEF	OBUS	0.68	0.71
tblVehicleEF	OBUS	5.6380e-003	5.5590e-003
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	5.6400e-004	5.7400e-004
tblVehicleEF	OBUS	9.3300e-004	9.2800e-004

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tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	3.2580e-003	3.4320e-003
tblVehicleEF	OBUS	1.63	1.67
tblVehicleEF	OBUS	1.53	1.76
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tblVehicleEF	OBUS	610.43	607.99
tblVehicleEF	OBUS	1,118.26	1,120.43
tblVehicleEF	OBUS	36.38	37.05
tblVehicleEF	OBUS	2.4290e-003	2.4260e-003
tblVehicleEF	OBUS	6.67	7.51
tblVehicleEF	OBUS	4.66	5.46
tblVehicleEF	OBUS	1.43	1.47
tblVehicleEF	OBUS	0.02	0.05
tblVehicleEF	OBUS	0.10	0.09
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.07	0.10
tblVehicleEF	OBUS	1.0180e-003	1.1480e-003
tblVehicleEF	OBUS	0.02	0.05
tblVehicleEF	OBUS	0.04	0.04
tblVehicleEF	OBUS	2.6340e-003	2.6200e-003
tblVehicleEF	OBUS	0.06	0.09
tblVehicleEF	OBUS	8.9600e-004	1.0010e-003

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tblVehicleEF	OBUS	0.43	0.53
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tblVehicleEF	OBUS	0.29	0.28
tblVehicleEF	OBUS	0.64	0.66
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	3.2580e-003	3.4320e-003
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tblVehicleEF	OBUS	36.38	37.05
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tblVehicleEF	OBUS	6.17	6.96
tblVehicleEF	OBUS	4.86	5.70

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tblVehicleEF	SBUS	0.09	0.09
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tblVehicleEF	SBUS	7.99	8.04
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tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.09	0.09
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tblVehicleEF	SBUS	0.03	0.03
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tblVehicleEF	SBUS	0.13	0.12
tblVehicleEF	SBUS	0.03	0.03
tblVehicleEF	SBUS	0.51	0.52
tblVehicleEF	SBUS	2.15	2.19
tblVehicleEF	SBUS	2.32	2.41
tblVehicleEF	SBUS	5.8550e-003	5.8270e-003
tblVehicleEF	SBUS	7.8420e-003	7.6510e-003
tblVehicleEF	SBUS	1.45	1.44
tblVehicleEF	SBUS	5.11	5.36
tblVehicleEF	SBUS	39.57	40.90
tblVehicleEF	SBUS	528.91	533.99

tblVehicleEF	SBUS	1,143.06	1,155.83
tblVehicleEF	SBUS	129.10	130.96
tblVehicleEF	SBUS	5.4300e-004	5.4700e-004
tblVehicleEF	SBUS	7.78	7.83
tblVehicleEF	SBUS	8.35	8.40
tblVehicleEF	SBUS	2.49	2.55
tblVehicleEF	SBUS	0.03	0.03
tblVehicleEF	SBUS	0.58	0.58
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.09	0.09
tblVehicleEF	SBUS	7.3940e-003	7.8690e-003
tblVehicleEF	SBUS	0.03	0.03
tblVehicleEF	SBUS	0.25	0.25
tblVehicleEF	SBUS	2.7720e-003	2.7730e-003
tblVehicleEF	SBUS	0.08	0.08
tblVehicleEF	SBUS	6.4760e-003	6.8680e-003
tblVehicleEF	SBUS	0.05	0.05
tblVehicleEF	SBUS	0.35	0.37
tblVehicleEF	SBUS	0.13	0.13
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	SBUS	0.45	0.46
tblVehicleEF	SBUS	2.76	2.81
tblVehicleEF	SBUS	2.54	2.64
tblVehicleEF	SBUS	5.1750e-003	5.1720e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	2.0230e-003	2.0530e-003
tblVehicleEF	SBUS	0.05	0.05
tblVehicleEF	SBUS	0.35	0.37

tblVehicleEF	SBUS	0.14	0.14
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	SBUS	0.50	0.51
tblVehicleEF	SBUS	2.76	2.81
tblVehicleEF	SBUS	2.71	2.83
tblVehicleEF	UBUS	5.24	5.41
tblVehicleEF	UBUS	8.34	8.46
tblVehicleEF	UBUS	2,257.16	2,287.55
tblVehicleEF	UBUS	21.78	22.10
tblVehicleEF	UBUS	3.1580e-003	3.1710e-003
tblVehicleEF	UBUS	14.49	14.75
tblVehicleEF	UBUS	0.89	0.90
tblVehicleEF	UBUS	0.23	0.24
tblVehicleEF	UBUS	7.3600e-004	7.7800e-004
tblVehicleEF	UBUS	0.21	0.22
tblVehicleEF	UBUS	6.5600e-004	6.8900e-004
tblVehicleEF	UBUS	4.5420e-003	4.5680e-003
tblVehicleEF	UBUS	0.09	0.09
tblVehicleEF	UBUS	2.5240e-003	2.5400e-003
tblVehicleEF	UBUS	0.85	0.86
tblVehicleEF	UBUS	0.62	0.61
tblVehicleEF	UBUS	0.61	0.62
tblVehicleEF	UBUS	0.02	0.02
tblVehicleEF	UBUS	3.7300e-004	3.7600e-004
tblVehicleEF	UBUS	4.5420e-003	4.5680e-003
tblVehicleEF	UBUS	0.09	0.09
tblVehicleEF	UBUS	2.5240e-003	2.5400e-003
tblVehicleEF	UBUS	0.95	0.96

tblVehicleEF	UBUS	0.62	0.61
tblVehicleEF	UBUS	0.65	0.66
tblVehicleEF	UBUS	5.27	5.43
tblVehicleEF	UBUS	7.00	7.11
tblVehicleEF	UBUS	2,257.16	2,287.55
tblVehicleEF	UBUS	21.78	22.10
tblVehicleEF	UBUS	3.1580e-003	3.1710e-003
tblVehicleEF	UBUS	13.66	13.91
tblVehicleEF	UBUS	0.86	0.86
tblVehicleEF	UBUS	0.23	0.24
tblVehicleEF	UBUS	7.3600e-004	7.7800e-004
tblVehicleEF	UBUS	0.21	0.22
tblVehicleEF	UBUS	6.5600e-004	6.8900e-004
tblVehicleEF	UBUS	6.4420e-003	6.4920e-003
tblVehicleEF	UBUS	0.09	0.09
tblVehicleEF	UBUS	3.5030e-003	3.5460e-003
tblVehicleEF	UBUS	0.86	0.87
tblVehicleEF	UBUS	0.58	0.56
tblVehicleEF	UBUS	0.54	0.55
tblVehicleEF	UBUS	0.02	0.02
tblVehicleEF	UBUS	3.5000e-004	3.5300e-004
tblVehicleEF	UBUS	6.4420e-003	6.4920e-003
tblVehicleEF	UBUS	0.09	0.09
tblVehicleEF	UBUS	3.5030e-003	3.5460e-003
tblVehicleEF	UBUS	0.96	0.97
tblVehicleEF	UBUS	0.58	0.56
tblVehicleEF	UBUS	0.58	0.59
tblVehicleEF	UBUS	5.23	5.40

tblVehicleEF	UBUS	8.57	8.69
tblVehicleEF	UBUS	2,257.16	2,287.55
tblVehicleEF	UBUS	21.78	22.10
tblVehicleEF	UBUS	3.1580e-003	3.1710e-003
tblVehicleEF	UBUS	14.21	14.47
tblVehicleEF	UBUS	0.90	0.91
tblVehicleEF	UBUS	0.23	0.24
tblVehicleEF	UBUS	7.3600e-004	7.7800e-004
tblVehicleEF	UBUS	0.21	0.22
tblVehicleEF	UBUS	6.5600e-004	6.8900e-004
tblVehicleEF	UBUS	5.3470e-003	5.3900e-003
tblVehicleEF	UBUS	0.11	0.11
tblVehicleEF	UBUS	2.7470e-003	2.7720e-003
tblVehicleEF	UBUS	0.85	0.86
tblVehicleEF	UBUS	0.73	0.71
tblVehicleEF	UBUS	0.62	0.63
tblVehicleEF	UBUS	0.02	0.02
tblVehicleEF	UBUS	3.7700e-004	3.8000e-004
tblVehicleEF	UBUS	5.3470e-003	5.3900e-003
tblVehicleEF	UBUS	0.11	0.11
tblVehicleEF	UBUS	2.7470e-003	2.7720e-003
tblVehicleEF	UBUS	0.94	0.96
tblVehicleEF	UBUS	0.73	0.71
tblVehicleEF	UBUS	0.67	0.68

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.0905	0.7376	0.4804	7.6000e-004	0.0213	0.0449	0.0661	9.4400e-003	0.0426	0.0521	0.0000	67.9894	67.9894	0.0147	0.0000	68.2977
Total	**0.0905**	**0.7376**	**0.4804**	**7.6000e-004**	**0.0213**	**0.0449**	**0.0661**	**9.4400e-003**	**0.0426**	**0.0521**	**0.0000**	**67.9894**	**67.9894**	**0.0147**	**0.0000**	**68.2977**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.0904	0.7367	0.4798	7.6000e-004	0.0167	0.0448	0.0616	6.0600e-003	0.0426	0.0486	0.0000	67.9153	67.9153	0.0147	0.0000	68.2233
Total	**0.0904**	**0.7367**	**0.4798**	**7.6000e-004**	**0.0167**	**0.0448**	**0.0616**	**6.0600e-003**	**0.0426**	**0.0486**	**0.0000**	**67.9153**	**67.9153**	**0.0147**	**0.0000**	**68.2233**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.0995**	**0.1180**	**0.1103**	**0.0000**	**21.3176**	**0.1337**	**6.9106**	**35.8051**	**0.1173**	**6.5886**	**0.0000**	**0.1090**	**0.1090**	**0.1362**	**0.0000**	**0.1090**

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	0.0416	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004
Energy	8.8000e-004	8.0300e-003	6.7500e-003	5.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	38.7866	38.7866	1.5500e-003	4.5000e-004	38.9574
Mobile	0.1524	0.1535	0.5728	1.1400e-003	0.0769	2.3600e-003	0.0793	0.0206	2.1700e-003	0.0228	0.0000	95.8715	95.8715	4.5400e-003	0.0000	95.9669
Waste						0.0000	0.0000		0.0000	0.0000	2.1923	0.0000	2.1923	0.1296	0.0000	4.9131
Water						0.0000	0.0000		0.0000	0.0000	0.6390	7.5052	8.1442	0.0660	1.6200e-003	10.0323
Total	**0.1949**	**0.1615**	**0.5797**	**1.1900e-003**	**0.0769**	**2.9700e-003**	**0.0799**	**0.0206**	**2.7800e-003**	**0.0234**	**2.8313**	**142.1635**	**144.9948**	**0.2016**	**2.0700e-003**	**149.8698**

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	0.0416	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004
Energy	8.8000e-004	8.0300e-003	6.7500e-003	5.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	38.7866	38.7866	1.5500e-003	4.5000e-004	38.9574
Mobile	0.1524	0.1535	0.5728	1.1400e-003	0.0769	2.3600e-003	0.0793	0.0206	2.1700e-003	0.0228	0.0000	95.8715	95.8715	4.5400e-003	0.0000	95.9669
Waste						0.0000	0.0000		0.0000	0.0000	2.1923	0.0000	2.1923	0.1296	0.0000	4.9131
Water						0.0000	0.0000		0.0000	0.0000	0.6390	7.5052	8.1442	0.0660	1.6200e-003	10.0313
Total	**0.1949**	**0.1615**	**0.5797**	**1.1900e-003**	**0.0769**	**2.9700e-003**	**0.0799**	**0.0206**	**2.7800e-003**	**0.0234**	**2.8313**	**142.1635**	**144.9948**	**0.2016**	**2.0700e-003**	**149.8688**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**4.9596e-003**	**0.0000**	**6.8059e-004**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/3/2015	8/7/2015	5	5	
2	Grading	Grading	8/10/2015	9/30/2015	5	38	
3	Paving	Paving	10/1/2015	10/9/2015	5	7	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Air Compressors	1	8.00	78	0.48
Site Preparation	Concrete/Industrial Saws	2	8.00	81	0.73
Site Preparation	Cranes	1	8.00	226	0.29
Site Preparation	Dumpers/Tenders	1	8.00	16	0.38
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Air Compressors	1	8.00	78	0.48
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Cranes	1	8.00	226	0.29
Grading	Dumpers/Tenders	1	8.00	16	0.38
Grading	Excavators	1	8.00	162	0.38
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Signal Boards	1	8.00	6	0.82
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Dumpers/Tenders	1	8.00	16	0.38
Paving	Excavators	1	8.00	162	0.38
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	80	0.38
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	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
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	18.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	12	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2015

Unmitigated Construction On-Site

Acres of Grading: 3

	ROG	NOx	CO	SO2	Fugitive 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					1.5900e-003	0.0000	1.5900e-003	1.7000e-004	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.0925	0.0522	8.0000e-005		5.9300e-003	5.9300e-003		5.6700e-003	5.6700e-003	0.0000	7.2540	7.2540	1.4800e-003	0.0000	7.2851
Total	**0.0105**	**0.0925**	**0.0522**	**8.0000e-005**	**1.5900e-003**	**5.9300e-003**	**7.5200e-003**	**1.7000e-004**	**5.6700e-003**	**5.8400e-003**	**0.0000**	**7.2540**	**7.2540**	**1.4800e-003**	**0.0000**	**7.2851**

3.2 Site Preparation - 2015

Unmitigated Construction Off-Site

Acres of Grading: 3

	ROG	NOx	CO	SO2	Fugitive 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	1.0700e-003	3.2000e-004	3.3100e-003	1.0000e-005	4.9000e-004	1.0000e-005	5.0000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.4978	0.4978	3.0000e-005	0.0000	0.4984
Total	**1.0700e-003**	**3.2000e-004**	**3.3100e-003**	**1.0000e-005**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4978**	**0.4978**	**3.0000e-005**	**0.0000**	**0.4984**

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					7.2000e-004	0.0000	7.2000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.0924	0.0521	8.0000e-005		5.9200e-003	5.9200e-003		5.6700e-003	5.6700e-003	0.0000	7.2453	7.2453	1.4800e-003	0.0000	7.2764
Total	**0.0105**	**0.0924**	**0.0521**	**8.0000e-005**	**7.2000e-004**	**5.9200e-003**	**6.6400e-003**	**8.0000e-005**	**5.6700e-003**	**5.7500e-003**	**0.0000**	**7.2453**	**7.2453**	**1.4800e-003**	**0.0000**	**7.2764**

3.2 Site Preparation - 2015

Mitigated Construction Off-Site

Acres of Grading: 3

	ROG	NOx	CO	SO2	Fugitive 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	1.0700e-003	3.2000e-004	3.3100e-003	1.0000e-005	4.9000e-004	1.0000e-005	5.0000e-004	1.3000e-004	0.0000	1.4000e-004	0.0000	0.4978	0.4978	3.0000e-005	0.0000	0.4984
Total	**1.0700e-003**	**3.2000e-004**	**3.3100e-003**	**1.0000e-005**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4978**	**0.4978**	**3.0000e-005**	**0.0000**	**0.4984**

3.3 Grading - 2015

Unmitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0145	0.0000	0.0145	7.8900e-003	0.0000	7.8900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0582	0.5350	0.3267	5.1000e-004		0.0325	0.0325		0.0310	0.0310	0.0000	46.0270	46.0270	0.0103	0.0000	46.2440
Total	**0.0582**	**0.5350**	**0.3267**	**5.1000e-004**	**0.0145**	**0.0325**	**0.0470**	**7.8900e-003**	**0.0310**	**0.0389**	**0.0000**	**46.0270**	**46.0270**	**0.0103**	**0.0000**	**46.2440**

3.3 Grading - 2015

Unmitigated Construction Off-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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	4.0000e-004	3.0100e-003	2.1700e-003	1.0000e-005	1.5000e-004	5.0000e-005	2.0000e-004	4.0000e-005	4.0000e-005	9.0000e-005	0.0000	0.6208	0.6208	1.0000e-005	0.0000	0.6209
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	9.0500e-003	2.6800e-003	0.0279	5.0000e-005	4.1600e-003	4.0000e-005	4.2100e-003	1.1100e-003	4.0000e-005	1.1400e-003	0.0000	4.2036	4.2036	2.5000e-004	0.0000	4.2088
Total	**9.4500e-003**	**5.6900e-003**	**0.0301**	**6.0000e-005**	**4.3100e-003**	**9.0000e-005**	**4.4100e-003**	**1.1500e-003**	**8.0000e-005**	**1.2300e-003**	**0.0000**	**4.8244**	**4.8244**	**2.6000e-004**	**0.0000**	**4.8297**

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					6.5100e-003	0.0000	6.5100e-003	3.5500e-003	0.0000	3.5500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0582	0.5344	0.3263	5.1000e-004		0.0325	0.0325		0.0310	0.0310	0.0000	45.9723	45.9723	0.0103	0.0000	46.1890
Total	**0.0582**	**0.5344**	**0.3263**	**5.1000e-004**	**6.5100e-003**	**0.0325**	**0.0390**	**3.5500e-003**	**0.0310**	**0.0345**	**0.0000**	**45.9723**	**45.9723**	**0.0103**	**0.0000**	**46.1890**

3.3 Grading - 2015

Mitigated Construction Off-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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	4.0000e-004	3.0100e-003	2.1700e-003	1.0000e-005	4.4600e-003	5.0000e-005	4.5000e-003	1.1000e-003	4.0000e-005	1.1400e-003	0.0000	0.6208	0.6208	1.0000e-005	0.0000	0.6209
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	9.0500e-003	2.6800e-003	0.0279	5.0000e-005	4.1600e-003	4.0000e-005	4.2100e-003	1.1100e-003	4.0000e-005	1.1400e-003	0.0000	4.2036	4.2036	2.5000e-004	0.0000	4.2088
Total	**9.4500e-003**	**5.6900e-003**	**0.0301**	**6.0000e-005**	**8.6200e-003**	**9.0000e-005**	**8.7100e-003**	**2.2100e-003**	**8.0000e-005**	**2.2800e-003**	**0.0000**	**4.8244**	**4.8244**	**2.6000e-004**	**0.0000**	**4.8297**

3.4 Paving - 2015

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	0.0104	0.1038	0.0655	1.0000e-004		6.3400e-003	6.3400e-003		5.8500e-003	5.8500e-003	0.0000	8.9991	8.9991	2.5600e-003	0.0000	9.0528
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0104**	**0.1038**	**0.0655**	**1.0000e-004**		**6.3400e-003**	**6.3400e-003**		**5.8500e-003**	**5.8500e-003**	**0.0000**	**8.9991**	**8.9991**	**2.5600e-003**	**0.0000**	**9.0528**

3.4 Paving - 2015

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	8.3000e-004	2.5000e-004	2.5700e-003	0.0000	3.8000e-004	0.0000	3.9000e-004	1.0000e-004	0.0000	1.1000e-004	0.0000	0.3872	0.3872	2.0000e-005	0.0000	0.3877
Total	**8.3000e-004**	**2.5000e-004**	**2.5700e-003**	**0.0000**	**3.8000e-004**	**0.0000**	**3.9000e-004**	**1.0000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3872**	**0.3872**	**2.0000e-005**	**0.0000**	**0.3877**

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	0.0104	0.1037	0.0654	1.0000e-004		6.3300e-003	6.3300e-003		5.8500e-003	5.8500e-003	0.0000	8.9884	8.9884	2.5500e-003	0.0000	9.0420
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0104**	**0.1037**	**0.0654**	**1.0000e-004**		**6.3300e-003**	**6.3300e-003**		**5.8500e-003**	**5.8500e-003**	**0.0000**	**8.9884**	**8.9884**	**2.5500e-003**	**0.0000**	**9.0420**

3.4 Paving - 2015

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	8.3000e-004	2.5000e-004	2.5700e-003	0.0000	3.8000e-004	0.0000	3.9000e-004	1.0000e-004	0.0000	1.1000e-004	0.0000	0.3872	0.3872	2.0000e-005	0.0000	0.3877
Total	**8.3000e-004**	**2.5000e-004**	**2.5700e-003**	**0.0000**	**3.8000e-004**	**0.0000**	**3.9000e-004**	**1.0000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3872**	**0.3872**	**2.0000e-005**	**0.0000**	**0.3877**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1524	0.1535	0.5728	1.1400e-003	0.0769	2.3600e-003	0.0793	0.0206	2.1700e-003	0.0228	0.0000	95.8715	95.8715	4.5400e-003	0.0000	95.9669
Unmitigated	0.1524	0.1535	0.5728	1.1400e-003	0.0769	2.3600e-003	0.0793	0.0206	2.1700e-003	0.0228	0.0000	95.8715	95.8715	4.5400e-003	0.0000	95.9669

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	60.71	11.50	5.92	203,045	203,045
Total	60.71	11.50	5.92	203,045	203,045

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.535275	0.058759	0.178478	0.127034	0.038632	0.006246	0.015618	0.028471	0.002426	0.003171	0.003696	0.000547	0.001645

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	30.0417	30.0417	1.3800e-003	2.9000e-004	30.1593
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	30.0417	30.0417	1.3800e-003	2.9000e-004	30.1593
NaturalGas Mitigated	8.8000e-004	8.0300e-003	6.7500e-003	5.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	8.7449	8.7449	1.7000e-004	1.6000e-004	8.7981
NaturalGas Unmitigated	8.8000e-004	8.0300e-003	6.7500e-003	5.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	8.7449	8.7449	1.7000e-004	1.6000e-004	8.7981

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	163873	8.8000e-004	8.0300e-003	6.7500e-003	5.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	8.7449	8.7449	1.7000e-004	1.6000e-004	8.7981
Total		**8.8000e-004**	**8.0300e-003**	**6.7500e-003**	**5.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**8.7449**	**8.7449**	**1.7000e-004**	**1.6000e-004**	**8.7981**

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					
General Light Industry	163873	8.8000e-004	8.0300e-003	6.7500e-003	5.0000e-005		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	8.7449	8.7449	1.7000e-004	1.6000e-004	8.7981
Total		**8.8000e-004**	**8.0300e-003**	**6.7500e-003**	**5.0000e-005**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**8.7449**	**8.7449**	**1.7000e-004**	**1.6000e-004**	**8.7981**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	104980	30.0417	1.3800e-003	2.9000e-004	30.1593
Total		**30.0417**	**1.3800e-003**	**2.9000e-004**	**30.1593**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	104980	30.0417	1.3800e-003	2.9000e-004	30.1593
Total		**30.0417**	**1.3800e-003**	**2.9000e-004**	**30.1593**

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	0.0416	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004
Unmitigated	0.0416	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-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	0.0101					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0315					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004
Total	**0.0416**	**0.0000**	**1.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-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	0.0101					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0315					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004
Total	**0.0416**	**0.0000**	**1.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	8.1442	0.0660	1.6200e-003	10.0313
Unmitigated	8.1442	0.0660	1.6200e-003	10.0323

7.2 Water by Land Use

Unmitigated

	Indoor/ Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	2.01419 / 0	8.1442	0.0660	1.6200e-003	10.0323
Total		**8.1442**	**0.0660**	**1.6200e-003**	**10.0323**

7.2 Water by Land Use

Mitigated

	Indoor/ Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	2.01419 / 0	8.1442	0.0660	1.6200e-003	10.0313
Total		**8.1442**	**0.0660**	**1.6200e-003**	**10.0313**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.1923	0.1296	0.0000	4.9131
Unmitigated	2.1923	0.1296	0.0000	4.9131

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	10.8	2.1923	0.1296	0.0000	4.9131
Total		**2.1923**	**0.1296**	**0.0000**	**4.9131**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	10.8	2.1923	0.1296	0.0000	4.9131
Total		**2.1923**	**0.1296**	**0.0000**	**4.9131**

9.0 Operational Offroad

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

10.0 Vegetation

Griffith Park Recycling Project - Pipelines

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	8.71	1000sqft	0.20	8,712.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2014
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - acreage adjusted to match contractor estimate

Construction Phase - Adjust phasing to match contractor data

Off-road Equipment - Adjust equipment list to match contractor data

Off-road Equipment - Adjust equipment list to match contractor data

Off-road Equipment - Adjust equipment list to match contractor data

Trips and VMT - Gang trucks and welder trucks added to worker trips

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	31.00

tblConstructionPhase	NumDays	5.00	35.00
tblConstructionPhase	NumDays	1.00	6.00
tblConstructionPhase	PhaseEndDate	2/21/2014	2/20/2014
tblConstructionPhase	PhaseEndDate	4/10/2014	2/28/2014
tblConstructionPhase	PhaseStartDate	1/10/2014	1/9/2014
tblConstructionPhase	PhaseStartDate	2/21/2014	1/11/2014
tblLandUse	LandUseSquareFeet	8,710.00	8,712.00
tblOffRoadEquipment	HorsePower	130.00	80.00
tblOffRoadEquipment	LoadFactor	0.36	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType	Rollers	Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType		Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	7.00	8.00

tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	18.00
tblTripsAndVMT	WorkerTripNumber	30.00	10.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2014	8.7923	68.3276	41.5286	0.0647	1.7179	4.3393	6.0571	0.5865	4.1521	4.7385	0.0000	6,411.6704	6,411.6704	1.4405	0.0000	6,441.9214
Total	**8.7923**	**68.3276**	**41.5286**	**0.0647**	**1.7179**	**4.3393**	**6.0571**	**0.5865**	**4.1521**	**4.7385**	**0.0000**	**6,411.6704**	**6,411.6704**	**1.4405**	**0.0000**	**6,441.9214**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2014	8.7853	68.2654	41.4934	0.0646	1.2425	4.3353	5.5778	0.3839	4.1483	4.5322	0.0000	6,406.2603	6,406.2603	1.4392	0.0000	6,436.4840
Total	**8.7853**	**68.2654**	**41.4934**	**0.0646**	**1.2425**	**4.3353**	**5.5778**	**0.3839**	**4.1483**	**4.5322**	**0.0000**	**6,406.2603**	**6,406.2603**	**1.4392**	**0.0000**	**6,436.4840**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.0797**	**0.0911**	**0.0847**	**0.0928**	**27.6709**	**0.0917**	**7.9135**	**34.5366**	**0.0915**	**4.3545**	**0.0000**	**0.0844**	**0.0844**	**0.0902**	**0.0000**	**0.0844**

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	0.2279	1.0000e-005	9.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.9100e-003	1.9100e-003	1.0000e-005		2.0300e-003
Energy	4.8400e-003	0.0440	0.0370	2.6000e-004		3.3500e-003	3.3500e-003		3.3500e-003	3.3500e-003		52.8196	52.8196	1.0100e-003	9.7000e-004	53.1410
Mobile	1.2395	1.0950	4.1290	8.1700e-003	0.5704	0.0173	0.5877	0.1525	0.0159	0.1683		759.9272	759.9272	0.0365		760.6930
Total	**1.4722**	**1.1390**	**4.1669**	**8.4300e-003**	**0.5704**	**0.0206**	**0.5910**	**0.1525**	**0.0192**	**0.1717**		**812.7486**	**812.7486**	**0.0375**	**9.7000e-004**	**813.8361**

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	0.2279	1.0000e-005	9.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.9100e-003	1.9100e-003	1.0000e-005		2.0300e-003
Energy	4.8400e-003	0.0440	0.0370	2.6000e-004		3.3500e-003	3.3500e-003		3.3500e-003	3.3500e-003		52.8196	52.8196	1.0100e-003	9.7000e-004	53.1410
Mobile	1.2395	1.0950	4.1290	8.1700e-003	0.5704	0.0173	0.5877	0.1525	0.0159	0.1683		759.9272	759.9272	0.0365		760.6930
Total	**1.4722**	**1.1390**	**4.1669**	**8.4300e-003**	**0.5704**	**0.0206**	**0.5910**	**0.1525**	**0.0192**	**0.1717**		**812.7486**	**812.7486**	**0.0375**	**9.7000e-004**	**813.8361**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/2/2014	1/9/2014	5	6	
2	Grading	Grading	1/9/2014	2/20/2014	5	31	
3	Paving	Paving	1/11/2014	2/28/2014	5	35	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Air Compressors	1	8.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Site Preparation	Concrete/Industrial Saws	2	8.00	81	0.73
Paving	Dumpers/Tenders	1	8.00	16	0.38
Site Preparation	Cranes	1	8.00	226	0.29
Site Preparation	Dumpers/Tenders	1	8.00	16	0.38
Grading	Air Compressors	1	8.00	78	0.48
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	80	0.38
Grading	Cranes	1	8.00	226	0.29
Paving	Excavators	1	8.00	162	0.38
Grading	Dumpers/Tenders	1	8.00	16	0.38
Grading	Excavators	1	8.00	162	0.38
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Signal Boards	1	8.00	6	0.82
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Graders	1	8.00	174	0.41
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	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
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	18.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	12	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2014

Unmitigated Construction On-Site

Acres of Grading: 3

	ROG	NOx	CO	SO2	Fugitive 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					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	4.4256	38.4491	21.0050	0.0322		2.5134	2.5134		2.4089	2.4089		3,211.2148	3,211.2148	0.6698		3,225.2797
Total	**4.4256**	**38.4491**	**21.0050**	**0.0322**	**0.5303**	**2.5134**	**3.0436**	**0.0573**	**2.4089**	**2.4662**		**3,211.2148**	**3,211.2148**	**0.6698**		**3,225.2797**

3.2 Site Preparation - 2014

Unmitigated Construction Off-Site

Acres of Grading: 3

	ROG	NOx	CO	SO2	Fugitive 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	0.5269	0.1374	1.4386	2.4700e-003	0.2012	2.1500e-003	0.2034	0.0534	1.9700e-003	0.0553		222.6779	222.6779	0.0142		222.9764
Total	**0.5269**	**0.1374**	**1.4386**	**2.4700e-003**	**0.2012**	**2.1500e-003**	**0.2034**	**0.0534**	**1.9700e-003**	**0.0553**		**222.6779**	**222.6779**	**0.0142**		**222.9764**

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					0.2386	0.0000	0.2386	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	4.4216	38.4138	20.9858	0.0322		2.5111	2.5111		2.4067	2.4067	0.0000	3,208.2687	3,208.2687	0.6691		3,222.3206
Total	**4.4216**	**38.4138**	**20.9858**	**0.0322**	**0.2386**	**2.5111**	**2.7497**	**0.0258**	**2.4067**	**2.4325**	**0.0000**	**3,208.2687**	**3,208.2687**	**0.6691**		**3,222.3206**

3.2 Site Preparation - 2014

Mitigated Construction Off-Site

Acres of Grading: 3

	ROG	NOx	CO	SO2	Fugitive 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	0.5269	0.1374	1.4386	2.4700e-003	0.2012	2.1500e-003	0.2034	0.0534	1.9700e-003	0.0553		222.6779	222.6779	0.0142		222.9764
Total	**0.5269**	**0.1374**	**1.4386**	**2.4700e-003**	**0.2012**	**2.1500e-003**	**0.2034**	**0.0534**	**1.9700e-003**	**0.0553**		**222.6779**	**222.6779**	**0.0142**		**222.9764**

3.3 Grading - 2014

Unmitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	3.2209	29.3717	17.3307	0.0268		1.8174	1.8174		1.7354	1.7354		2,685.7448	2,685.7448	0.6103		2,698.5608
Total	**3.2209**	**29.3717**	**17.3307**	**0.0268**	**0.7528**	**1.8174**	**2.5702**	**0.4138**	**1.7354**	**2.1492**		**2,685.7448**	**2,685.7448**	**0.6103**		**2,698.5608**

3.3 Grading - 2014

Unmitigated Construction Off-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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	0.0334	0.2168	0.1559	4.3000e-004	0.0101	3.9300e-003	0.0140	2.7700e-003	3.6200e-003	6.3800e-003		44.6131	44.6131	4.0000e-004		44.6215
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	0.5855	0.1526	1.5984	2.7400e-003	0.2236	2.3900e-003	0.2260	0.0593	2.1900e-003	0.0615		247.4199	247.4199	0.0158		247.7515
Total	**0.6189**	**0.3694**	**1.7543**	**3.1700e-003**	**0.2337**	**6.3200e-003**	**0.2400**	**0.0621**	**5.8100e-003**	**0.0679**		**292.0330**	**292.0330**	**0.0162**		**292.3730**

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					0.3387	0.0000	0.3387	0.1862	0.0000	0.1862			0.0000			0.0000
Off-Road	3.2180	29.3448	17.3148	0.0268		1.8158	1.8158		1.7338	1.7338	0.0000	2,683.2807	2,683.2807	0.6097		2,696.0850
Total	**3.2180**	**29.3448**	**17.3148**	**0.0268**	**0.3387**	**1.8158**	**2.1545**	**0.1862**	**1.7338**	**1.9200**	**0.0000**	**2,683.2807**	**2,683.2807**	**0.6097**		**2,696.0850**

3.3 Grading - 2014

Mitigated Construction Off-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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	0.0334	0.2168	0.1559	4.3000e-004	0.2404	3.9300e-003	0.2443	0.0593	3.6200e-003	0.0629		44.6131	44.6131	4.0000e-004		44.6215
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	0.5855	0.1526	1.5984	2.7400e-003	0.2236	2.3900e-003	0.2260	0.0593	2.1900e-003	0.0615		247.4199	247.4199	0.0158		247.7515
Total	**0.6189**	**0.3694**	**1.7543**	**3.1700e-003**	**0.4640**	**6.3200e-003**	**0.4703**	**0.1186**	**5.8100e-003**	**0.1244**		**292.0330**	**292.0330**	**0.0162**		**292.3730**

3.4 Paving - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.0295	30.6583	18.7122	0.0279		1.8713	1.8713		1.7271	1.7271		2,863.4669	2,863.4669	0.8062		2,880.3960
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.0295**	**30.6583**	**18.7122**	**0.0279**		**1.8713**	**1.8713**		**1.7271**	**1.7271**		**2,863.4669**	**2,863.4669**	**0.8062**		**2,880.3960**

3.4 Paving - 2014

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	0.2927	0.0763	0.7992	1.3700e-003	0.1118	1.2000e-003	0.1130	0.0296	1.0900e-003	0.0307		123.7099	123.7099	7.9000e-003		123.8758
Total	**0.2927**	**0.0763**	**0.7992**	**1.3700e-003**	**0.1118**	**1.2000e-003**	**0.1130**	**0.0296**	**1.0900e-003**	**0.0307**		**123.7099**	**123.7099**	**7.9000e-003**		**123.8758**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.0267	30.6302	18.6950	0.0278		1.8696	1.8696		1.7255	1.7255	0.0000	2,860.8398	2,860.8398	0.8054		2,877.7534
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.0267**	**30.6302**	**18.6950**	**0.0278**		**1.8696**	**1.8696**		**1.7255**	**1.7255**	**0.0000**	**2,860.8398**	**2,860.8398**	**0.8054**		**2,877.7534**

3.4 Paving - 2014

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	0.2927	0.0763	0.7992	1.3700e-003	0.1118	1.2000e-003	0.1130	0.0296	1.0900e-003	0.0307		123.7099	123.7099	7.9000e-003		123.8758
Total	**0.2927**	**0.0763**	**0.7992**	**1.3700e-003**	**0.1118**	**1.2000e-003**	**0.1130**	**0.0296**	**1.0900e-003**	**0.0307**		**123.7099**	**123.7099**	**7.9000e-003**		**123.8758**

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	1.2395	1.0950	4.1290	8.1700e-003	0.5704	0.0173	0.5877	0.1525	0.0159	0.1683		759.9272	759.9272	0.0365		760.6930
Unmitigated	1.2395	1.0950	4.1290	8.1700e-003	0.5704	0.0173	0.5877	0.1525	0.0159	0.1683		759.9272	759.9272	0.0365		760.6930

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	60.71	11.50	5.92	203,045	203,045
Total	60.71	11.50	5.92	203,045	203,045

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.535275	0.058759	0.178478	0.127034	0.038632	0.006246	0.015618	0.028471	0.002426	0.003171	0.003696	0.000547	0.001645

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	4.8400e-003	0.0440	0.0370	2.6000e-004		3.3500e-003	3.3500e-003		3.3500e-003	3.3500e-003		52.8196	52.8196	1.0100e-003	9.7000e-004	53.1410
NaturalGas Unmitigated	4.8400e-003	0.0440	0.0370	2.6000e-004		3.3500e-003	3.3500e-003		3.3500e-003	3.3500e-003		52.8196	52.8196	1.0100e-003	9.7000e-004	53.1410

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	448.966	4.8400e-003	0.0440	0.0370	2.6000e-004		3.3500e-003	3.3500e-003		3.3500e-003	3.3500e-003		52.8196	52.8196	1.0100e-003	9.7000e-004	53.1410
Total		**4.8400e-003**	**0.0440**	**0.0370**	**2.6000e-004**		**3.3500e-003**	**3.3500e-003**		**3.3500e-003**	**3.3500e-003**		**52.8196**	**52.8196**	**1.0100e-003**	**9.7000e-004**	**53.1410**

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					
General Light Industry	0.448966	4.8400e-003	0.0440	0.0370	2.6000e-004		3.3500e-003	3.3500e-003		3.3500e-003	3.3500e-003		52.8196	52.8196	1.0100e-003	9.7000e-004	53.1410
Total		**4.8400e-003**	**0.0440**	**0.0370**	**2.6000e-004**		**3.3500e-003**	**3.3500e-003**		**3.3500e-003**	**3.3500e-003**		**52.8196**	**52.8196**	**1.0100e-003**	**9.7000e-004**	**53.1410**

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	0.2279	1.0000e-005	9.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.9100e-003	1.9100e-003	1.0000e-005		2.0300e-003
Unmitigated	0.2279	1.0000e-005	9.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.9100e-003	1.9100e-003	1.0000e-005		2.0300e-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	0.0553					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1725					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.0000e-005	1.0000e-005	9.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.9100e-003	1.9100e-003	1.0000e-005		2.0300e-003
Total	**0.2279**	**1.0000e-005**	**9.3000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.9100e-003**	**1.9100e-003**	**1.0000e-005**		**2.0300e-003**

6.2 Area by SubCategory

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	0.0553					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1725					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.0000e-005	1.0000e-005	9.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.9100e-003	1.9100e-003	1.0000e-005		2.0300e-003
Total	**0.2279**	**1.0000e-005**	**9.3000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.9100e-003**	**1.9100e-003**	**1.0000e-005**		**2.0300e-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

10.0 Vegetation

Griffith Park Recycling Project - Pipelines Phase 2

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	8.71	1000sqft	0.20	8,712.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2015
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - acreage adjusted to match contractor estimate

Construction Phase - Adjust phasing to match contractor data

Off-road Equipment - Adjust equipment list to match contractor data

Off-road Equipment - Adjust equipment list to match contractor data

Off-road Equipment - Adjust equipment list to match contractor data

Trips and VMT - Gang trucks and welder trucks added to worker trips

Construction Off-road Equipment Mitigation -

Grading -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	38.00
tblConstructionPhase	NumDays	5.00	7.00
tblConstructionPhase	NumDays	1.00	5.00
tblConstructionPhase	PhaseStartDate	8/8/2015	8/10/2015
tblGrading	MaterialExported	0.00	1,520.00
tblGrading	MaterialImported	0.00	1,300.00
tblLandUse	LandUseSquareFeet	8,710.00	8,712.00
tblOffRoadEquipment	HorsePower	130.00	80.00
tblOffRoadEquipment	LoadFactor	0.36	0.38
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType	Rollers	Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType		Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	PhaseName		Paving
tblOffRoadEquipment	PhaseName		Paving
tblOffRoadEquipment	PhaseName		Paving
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2015
tblTripsAndVMT	HaulingTripNumber	0.00	18.00
tblTripsAndVMT	WorkerTripNumber	30.00	10.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	4.6074	37.0516	22.2239	0.0348	0.8543	2.3717	3.2092	0.4004	2.2692	2.3913	0.0000	3,423.4182	3,423.4182	0.8123	0.0000	3,440.4773
Total	**4.6074**	**37.0516**	**22.2239**	**0.0348**	**0.8543**	**2.3717**	**3.2092**	**0.4004**	**2.2692**	**2.3913**	**0.0000**	**3,423.4182**	**3,423.4182**	**0.8123**	**0.0000**	**3,440.4773**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	4.6035	37.0177	22.2048	0.0348	0.7436	2.3696	2.8571	0.2709	2.2672	2.3514	0.0000	3,420.4874	3,420.4874	0.8116	0.0000	3,437.5309
Total	**4.6035**	**37.0177**	**22.2048**	**0.0348**	**0.7436**	**2.3696**	**2.8571**	**0.2709**	**2.2672**	**2.3514**	**0.0000**	**3,420.4874**	**3,420.4874**	**0.8116**	**0.0000**	**3,437.5309**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.0836**	**0.0915**	**0.0860**	**0.0862**	**12.9523**	**0.0919**	**10.9727**	**32.3401**	**0.0917**	**1.6673**	**0.0000**	**0.0856**	**0.0856**	**0.0911**	**0.0000**	**0.0856**

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	0.2279	1.0000e-005	9.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.9100e-003	1.9100e-003	1.0000e-005		2.0200e-003
Energy	4.8400e-003	0.0440	0.0370	2.6000e-004		3.3500e-003	3.3500e-003		3.3500e-003	3.3500e-003		52.8196	52.8196	1.0100e-003	9.7000e-004	53.1410
Mobile	1.0609	1.0357	4.2160	8.5700e-003	0.5704	0.0172	0.5876	0.1525	0.0158	0.1683		795.5632	795.5632	0.0365		796.3287
Total	**1.2937**	**1.0797**	**4.2539**	**8.8300e-003**	**0.5704**	**0.0205**	**0.5910**	**0.1525**	**0.0191**	**0.1716**		**848.3846**	**848.3846**	**0.0375**	**9.7000e-004**	**849.4717**

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	0.2279	1.0000e-005	9.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.9100e-003	1.9100e-003	1.0000e-005		2.0200e-003
Energy	4.8400e-003	0.0440	0.0370	2.6000e-004		3.3500e-003	3.3500e-003		3.3500e-003	3.3500e-003		52.8196	52.8196	1.0100e-003	9.7000e-004	53.1410
Mobile	1.0609	1.0357	4.2160	8.5700e-003	0.5704	0.0172	0.5876	0.1525	0.0158	0.1683		795.5632	795.5632	0.0365		796.3287
Total	**1.2937**	**1.0797**	**4.2539**	**8.8300e-003**	**0.5704**	**0.0205**	**0.5910**	**0.1525**	**0.0191**	**0.1716**		**848.3846**	**848.3846**	**0.0375**	**9.7000e-004**	**849.4717**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/3/2015	8/7/2015	5	5	
2	Grading	Grading	8/10/2015	9/30/2015	5	38	
3	Paving	Paving	10/1/2015	10/9/2015	5	7	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Air Compressors	1	8.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Site Preparation	Concrete/Industrial Saws	2	8.00	81	0.73
Paving	Dumpers/Tenders	1	8.00	16	0.38
Site Preparation	Cranes	1	8.00	226	0.29
Site Preparation	Dumpers/Tenders	1	8.00	16	0.38
Grading	Air Compressors	1	8.00	78	0.48
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	80	0.38
Grading	Cranes	1	8.00	226	0.29
Paving	Excavators	1	8.00	162	0.38
Grading	Dumpers/Tenders	1	8.00	16	0.38
Grading	Excavators	1	8.00	162	0.38
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Signal Boards	1	8.00	6	0.82
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Graders	1	8.00	174	0.41
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	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
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	18.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	12	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2015

Unmitigated Construction On-Site

Acres of Grading: 3

	ROG	NOx	CO	SO2	Fugitive 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					0.6363	0.0000	0.6363	0.0687	0.0000	0.0687			0.0000			0.0000
Off-Road	4.2010	36.9400	20.8476	0.0322		2.3697	2.3697		2.2674	2.2674		3,194.5623	3,194.5623	0.6524		3,208.2619
Total	**4.2010**	**36.9400**	**20.8476**	**0.0322**	**0.6363**	**2.3697**	**3.0060**	**0.0687**	**2.2674**	**2.3361**		**3,194.5623**	**3,194.5623**	**0.6524**		**3,208.2619**

3.2 Site Preparation - 2015

Unmitigated Construction Off-Site

Acres of Grading: 3

	ROG	NOx	CO	SO2	Fugitive 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	0.4064	0.1116	1.3763	2.6200e-003	0.2012	2.0100e-003	0.2032	0.0534	1.8400e-003	0.0552		228.8559	228.8559	0.0131		229.1301
Total	**0.4064**	**0.1116**	**1.3763**	**2.6200e-003**	**0.2012**	**2.0100e-003**	**0.2032**	**0.0534**	**1.8400e-003**	**0.0552**		**228.8559**	**228.8559**	**0.0131**		**229.1301**

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					0.2863	0.0000	0.2863	0.0309	0.0000	0.0309			0.0000			0.0000
Off-Road	4.1971	36.9061	20.8285	0.0322		2.3676	2.3676		2.2653	2.2653	0.0000	3,191.6315	3,191.6315	0.6518		3,205.3184
Total	**4.1971**	**36.9061**	**20.8285**	**0.0322**	**0.2863**	**2.3676**	**2.6539**	**0.0309**	**2.2653**	**2.2962**	**0.0000**	**3,191.6315**	**3,191.6315**	**0.6518**		**3,205.3184**

3.2 Site Preparation - 2015

Mitigated Construction Off-Site

Acres of Grading: 3

	ROG	NOx	CO	SO2	Fugitive 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	0.4064	0.1116	1.3763	2.6200e-003	0.2012	2.0100e-003	0.2032	0.0534	1.8400e-003	0.0552		228.8559	228.8559	0.0131		229.1301
Total	**0.4064**	**0.1116**	**1.3763**	**2.6200e-003**	**0.2012**	**2.0100e-003**	**0.2032**	**0.0534**	**1.8400e-003**	**0.0552**		**228.8559**	**228.8559**	**0.0131**		**229.1301**

3.3 Grading - 2015

Unmitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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					0.6225	0.0000	0.6225	0.3388	0.0000	0.3388			0.0000			0.0000
Off-Road	3.0620	28.1248	17.1931	0.0268		1.7099	1.7099		1.6304	1.6304		2,669.2179	2,669.2179	0.5992		2,681.8019
Total	**3.0620**	**28.1248**	**17.1931**	**0.0268**	**0.6225**	**1.7099**	**2.3324**	**0.3388**	**1.6304**	**1.9693**		**2,669.2179**	**2,669.2179**	**0.5992**		**2,681.8019**

3.3 Grading - 2015

Unmitigated Construction Off-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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	0.0206	0.1503	0.1025	3.5000e-004	8.2500e-003	2.4800e-003	0.0107	2.2600e-003	2.2800e-003	4.5400e-003		36.0517	36.0517	2.9000e-004		36.0579
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	0.4516	0.1240	1.5292	2.9100e-003	0.2236	2.2300e-003	0.2258	0.0593	2.0500e-003	0.0613		254.2843	254.2843	0.0145		254.5891
Total	**0.4721**	**0.2743**	**1.6317**	**3.2600e-003**	**0.2318**	**4.7100e-003**	**0.2365**	**0.0616**	**4.3300e-003**	**0.0659**		**290.3360**	**290.3360**	**0.0148**		**290.6469**

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					0.2801	0.0000	0.2801	0.1525	0.0000	0.1525			0.0000			0.0000
Off-Road	3.0592	28.0990	17.1773	0.0268		1.7083	1.7083		1.6289	1.6289	0.0000	2,666.7691	2,666.7691	0.5987		2,679.3415
Total	**3.0592**	**28.0990**	**17.1773**	**0.0268**	**0.2801**	**1.7083**	**1.9885**	**0.1525**	**1.6289**	**1.7814**	**0.0000**	**2,666.7691**	**2,666.7691**	**0.5987**		**2,679.3415**

3.3 Grading - 2015

Mitigated Construction Off-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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	0.0206	0.1503	0.1025	3.5000e-004	0.2400	2.4800e-003	0.2424	0.0591	2.2800e-003	0.0614		36.0517	36.0517	2.9000e-004		36.0579
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	0.4516	0.1240	1.5292	2.9100e-003	0.2236	2.2300e-003	0.2258	0.0593	2.0500e-003	0.0613		254.2843	254.2843	0.0145		254.5891
Total	**0.4721**	**0.2743**	**1.6317**	**3.2600e-003**	**0.4635**	**4.7100e-003**	**0.4682**	**0.1184**	**4.3300e-003**	**0.1227**		**290.3360**	**290.3360**	**0.0148**		**290.6469**

3.4 Paving - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9641	29.6651	18.7088	0.0278		1.8121	1.8121		1.6724	1.6724		2,834.2316	2,834.2316	0.8051		2,851.1383
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.9641**	**29.6651**	**18.7088**	**0.0278**		**1.8121**	**1.8121**		**1.6724**	**1.6724**		**2,834.2316**	**2,834.2316**	**0.8051**		**2,851.1383**

3.4 Paving - 2015

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	0.2258	0.0620	0.7646	1.4500e-003	0.1118	1.1200e-003	0.1129	0.0296	1.0200e-003	0.0307		127.1422	127.1422	7.2600e-003		127.2945
Total	**0.2258**	**0.0620**	**0.7646**	**1.4500e-003**	**0.1118**	**1.1200e-003**	**0.1129**	**0.0296**	**1.0200e-003**	**0.0307**		**127.1422**	**127.1422**	**7.2600e-003**		**127.2945**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.9613	29.6378	18.6917	0.0278		1.8105	1.8105		1.6709	1.6709	0.0000	2,831.6313	2,831.6313	0.8043		2,848.5226
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.9613**	**29.6378**	**18.6917**	**0.0278**		**1.8105**	**1.8105**		**1.6709**	**1.6709**	**0.0000**	**2,831.6313**	**2,831.6313**	**0.8043**		**2,848.5226**

3.4 Paving - 2015

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	0.2258	0.0620	0.7646	1.4500e-003	0.1118	1.1200e-003	0.1129	0.0296	1.0200e-003	0.0307		127.1422	127.1422	7.2600e-003		127.2945
Total	**0.2258**	**0.0620**	**0.7646**	**1.4500e-003**	**0.1118**	**1.1200e-003**	**0.1129**	**0.0296**	**1.0200e-003**	**0.0307**		**127.1422**	**127.1422**	**7.2600e-003**		**127.2945**

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	1.0609	1.0357	4.2160	8.5700e-003	0.5704	0.0172	0.5876	0.1525	0.0158	0.1683		795.5632	795.5632	0.0365		796.3287
Unmitigated	1.0609	1.0357	4.2160	8.5700e-003	0.5704	0.0172	0.5876	0.1525	0.0158	0.1683		795.5632	795.5632	0.0365		796.3287

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	60.71	11.50	5.92	203,045	203,045
Total	60.71	11.50	5.92	203,045	203,045

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.535275	0.058759	0.178478	0.127034	0.038632	0.006246	0.015618	0.028471	0.002426	0.003171	0.003696	0.000547	0.001645

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	4.8400e-003	0.0440	0.0370	2.6000e-004		3.3500e-003	3.3500e-003		3.3500e-003	3.3500e-003		52.8196	52.8196	1.0100e-003	9.7000e-004	53.1410
NaturalGas Unmitigated	4.8400e-003	0.0440	0.0370	2.6000e-004		3.3500e-003	3.3500e-003		3.3500e-003	3.3500e-003		52.8196	52.8196	1.0100e-003	9.7000e-004	53.1410

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	448.966	4.8400e-003	0.0440	0.0370	2.6000e-004		3.3500e-003	3.3500e-003		3.3500e-003	3.3500e-003		52.8196	52.8196	1.0100e-003	9.7000e-004	53.1410
Total		**4.8400e-003**	**0.0440**	**0.0370**	**2.6000e-004**		**3.3500e-003**	**3.3500e-003**		**3.3500e-003**	**3.3500e-003**		**52.8196**	**52.8196**	**1.0100e-003**	**9.7000e-004**	**53.1410**

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					
General Light Industry	0.448966	4.8400e-003	0.0440	0.0370	2.6000e-004		3.3500e-003	3.3500e-003		3.3500e-003	3.3500e-003		52.8196	52.8196	1.0100e-003	9.7000e-004	53.1410
Total		**4.8400e-003**	**0.0440**	**0.0370**	**2.6000e-004**		**3.3500e-003**	**3.3500e-003**		**3.3500e-003**	**3.3500e-003**		**52.8196**	**52.8196**	**1.0100e-003**	**9.7000e-004**	**53.1410**

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	0.2279	1.0000e-005	9.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.9100e-003	1.9100e-003	1.0000e-005		2.0200e-003
Unmitigated	0.2279	1.0000e-005	9.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.9100e-003	1.9100e-003	1.0000e-005		2.0200e-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	0.0553					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1725					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.0000e-005	1.0000e-005	9.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.9100e-003	1.9100e-003	1.0000e-005		2.0200e-003
Total	**0.2279**	**1.0000e-005**	**9.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.9100e-003**	**1.9100e-003**	**1.0000e-005**		**2.0200e-003**

6.2 Area by SubCategory

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	0.0553					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1725					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.0000e-005	1.0000e-005	9.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.9100e-003	1.9100e-003	1.0000e-005		2.0200e-003
Total	**0.2279**	**1.0000e-005**	**9.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.9100e-003**	**1.9100e-003**	**1.0000e-005**		**2.0200e-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

10.0 Vegetation

LADWP Griffith Tank Replacement and Pump Station

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	20.00	1000sqft	0.46	20,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2014
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Adjust phasing to match contractor data

Off-road Equipment - Adjust equipment mix based on contractor data

Off-road Equipment - Adjust equipment mix based on contractor data

Off-road Equipment - Adjust equipment mix based on contractor data

Off-road Equipment - Adjust equipment mix based on contractor data

Off-road Equipment - Adjust equipment mix based on contractor data

Off-road Equipment - Adjust equipment mix based on contractor data

Off-road Equipment -

Grading -

Demolition -

Trips and VMT - Adjust haul trips to match contractor data. Adjust construction worker trips based on contractor data

Vehicle Trips - No daily vehicle trips associated with tank and pumps station

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	13.00
tblConstructionPhase	NumDays	10.00	3.00
tblConstructionPhase	NumDays	2.00	5.00
tblConstructionPhase	NumDays	5.00	43.00
tblConstructionPhase	NumDays	5.00	1.00
tblConstructionPhase	NumDays	100.00	17.00
tblConstructionPhase	PhaseEndDate	5/12/2015	5/13/2015
tblConstructionPhase	PhaseStartDate	3/13/2015	3/15/2015
tblGrading	MaterialExported	0.00	2,000.00
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Dumpers/Tenders

tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	1.00	4.00
tblOffRoadEquipment	UsageHours	6.00	1.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblTripsAndVMT	HaulingTripNumber	32.00	9.00
tblTripsAndVMT	HaulingTripNumber	250.00	200.00
tblTripsAndVMT	WorkerTripNumber	15.00	22.00
tblTripsAndVMT	WorkerTripNumber	5.00	4.00
tblTripsAndVMT	WorkerTripNumber	25.00	8.00
tblTripsAndVMT	WorkerTripNumber	8.00	50.00
tblTripsAndVMT	WorkerTripNumber	20.00	12.00

tblTripsAndVMT	WorkerTripNumber	8.00	22.00
tblTripsAndVMT	WorkerTripNumber	18.00	12.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.1139	0.8344	0.5930	9.6000e-004	0.0225	0.0499	0.0724	7.7000e-003	0.0468	0.0545	0.0000	85.2004	85.2004	0.0179	0.0000	85.5769
Total	**0.1139**	**0.8344**	**0.5930**	**9.6000e-004**	**0.0225**	**0.0499**	**0.0724**	**7.7000e-003**	**0.0468**	**0.0545**	**0.0000**	**85.2004**	**85.2004**	**0.0179**	**0.0000**	**85.5769**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.1138	0.8335	0.5924	9.6000e-004	0.0278	0.0498	0.0776	8.9900e-003	0.0467	0.0557	0.0000	85.1197	85.1197	0.0179	0.0000	85.4957
Total	**0.1138**	**0.8335**	**0.5924**	**9.6000e-004**	**0.0278**	**0.0498**	**0.0776**	**8.9900e-003**	**0.0467**	**0.0557**	**0.0000**	**85.1197**	**85.1197**	**0.0179**	**0.0000**	**85.4957**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.0966**	**0.1127**	**0.1012**	**0.0000**	**-23.4694**	**0.1204**	**-7.2248**	**-16.7532**	**0.1283**	**-2.2953**	**0.0000**	**0.0948**	**0.0948**	**0.1115**	**0.0000**	**0.0949**

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	0.0955	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-004	5.0000e-004	0.0000	0.0000	5.3000e-004
Energy	2.0300e-003	0.0184	0.0155	1.1000e-004		1.4000e-003	1.4000e-003		1.4000e-003	1.4000e-003	0.0000	89.0417	89.0417	3.5500e-003	1.0200e-003	89.4338
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	5.0342	0.0000	5.0342	0.2975	0.0000	11.2819
Water						0.0000	0.0000		0.0000	0.0000	1.4673	17.2336	18.7009	0.1515	3.7200e-003	23.0363
Total	**0.0975**	**0.0184**	**0.0158**	**1.1000e-004**	**0.0000**	**1.4000e-003**	**1.4000e-003**	**0.0000**	**1.4000e-003**	**1.4000e-003**	**6.5015**	**106.2758**	**112.7773**	**0.4526**	**4.7400e-003**	**123.7525**

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	0.0955	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-004	5.0000e-004	0.0000	0.0000	5.3000e-004
Energy	2.0300e-003	0.0184	0.0155	1.1000e-004		1.4000e-003	1.4000e-003		1.4000e-003	1.4000e-003	0.0000	89.0417	89.0417	3.5500e-003	1.0200e-003	89.4338
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	5.0342	0.0000	5.0342	0.2975	0.0000	11.2819
Water						0.0000	0.0000		0.0000	0.0000	1.4673	17.2336	18.7009	0.1515	3.7200e-003	23.0339
Total	**0.0975**	**0.0184**	**0.0158**	**1.1000e-004**	**0.0000**	**1.4000e-003**	**1.4000e-003**	**0.0000**	**1.4000e-003**	**1.4000e-003**	**6.5015**	**106.2758**	**112.7773**	**0.4525**	**4.7400e-003**	**123.7501**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**6.6290e-003**	**0.0000**	**1.8909e-003**

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	3/2/2015	3/4/2015	5	3	
2	Site Preparation	Site Preparation	3/5/2015	3/5/2015	5	1	
3	Grading	Grading	3/6/2015	3/12/2015	5	5	
4	Uttilities/Subgrade	Paving	3/15/2015	5/13/2015	5	43	
5	Building Construction	Building Construction	5/14/2015	6/1/2015	5	13	
6	Tank	Building Construction	6/2/2015	6/24/2015	5	17	
7	Paving	Paving	6/25/2015	6/25/2015	5	1	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Tank	Pumps	1	8.00	84	0.74
Grading	Excavators	1	7.00	162	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Dumpers/Tenders	2	8.00	16	0.38
Building Construction	Cranes	1	8.00	226	0.29
Tank	Plate Compactors	1	8.00	8	0.43
Grading	Rollers	1	8.00	80	0.38
Grading	Dumpers/Tenders	4	8.00	16	0.38
Building Construction	Cement and Mortar Mixers	2	2.00	9	0.56
Building Construction	Pumps	1	8.00	84	0.74
Grading	Rubber Tired Dozers	1	4.00	255	0.40
Tank	Welders	1	8.00	46	0.45
Demolition	Tractors/Loaders/Backhoes	1	1.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Building Construction	Plate Compactors	1	8.00	8	0.43
Site Preparation	Tractors/Loaders/Backhoes	1	4.00	97	0.37

Tank	Cranes	1	8.00	226	0.29
Uttilities/Subgrade	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
Tank	Tractors/Loaders/Backhoes	1	1.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Uttilities/Subgrade	Excavators	1	8.00	162	0.38
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Forklifts	2	6.00	89	0.20
Tank	Forklifts	2	6.00	89	0.20
Site Preparation	Graders	1	8.00	174	0.41
Uttilities/Subgrade	Pavers	1	7.00	125	0.42
Uttilities/Subgrade	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Uttilities/Subgrade	Tractors/Loaders/Backhoes	1	7.00	97	0.37
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	6	22.00	0.00	9.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	10	8.00	0.00	200.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	10	50.00	3.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Uttilities/Subgrade	8	12.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Tank	7	22.00	3.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	12.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2015

Unmitigated Construction On-Site

Acres of Grading: 0.5

	ROG	NOx	CO	SO2	Fugitive 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					3.4700e-003	0.0000	3.4700e-003	5.2000e-004	0.0000	5.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1400e-003	0.0174	0.0126	2.0000e-005		1.2200e-003	1.2200e-003		1.1700e-003	1.1700e-003	0.0000	1.6325	1.6325	3.0000e-004	0.0000	1.6389
Total	**2.1400e-003**	**0.0174**	**0.0126**	**2.0000e-005**	**3.4700e-003**	**1.2200e-003**	**4.6900e-003**	**5.2000e-004**	**1.1700e-003**	**1.6900e-003**	**0.0000**	**1.6325**	**1.6325**	**3.0000e-004**	**0.0000**	**1.6389**

3.2 Demolition - 2015

Unmitigated Construction Off-Site

Acres of Grading: 0.5

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-004	1.5000e-003	1.0900e-003	0.0000	8.0000e-005	2.0000e-005	1.0000e-004	2.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.3104	0.3104	0.0000	0.0000	0.3105
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-004	2.3000e-004	2.4300e-003	0.0000	3.6000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3651	0.3651	2.0000e-005	0.0000	0.3655
Total	**9.9000e-004**	**1.7300e-003**	**3.5200e-003**	**0.0000**	**4.4000e-004**	**2.0000e-005**	**4.7000e-004**	**1.2000e-004**	**2.0000e-005**	**1.4000e-004**	**0.0000**	**0.6755**	**0.6755**	**2.0000e-005**	**0.0000**	**0.6760**

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					3.4700e-003	0.0000	3.4700e-003	5.2000e-004	0.0000	5.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1400e-003	0.0174	0.0126	2.0000e-005		1.2200e-003	1.2200e-003		1.1700e-003	1.1700e-003	0.0000	1.6306	1.6306	3.0000e-004	0.0000	1.6369
Total	**2.1400e-003**	**0.0174**	**0.0126**	**2.0000e-005**	**3.4700e-003**	**1.2200e-003**	**4.6900e-003**	**5.2000e-004**	**1.1700e-003**	**1.6900e-003**	**0.0000**	**1.6306**	**1.6306**	**3.0000e-004**	**0.0000**	**1.6369**

3.2 Demolition - 2015

Mitigated Construction Off-Site

Acres of Grading: 0.5

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-004	1.5000e-003	1.0900e-003	0.0000	1.9000e-004	2.0000e-005	2.2000e-004	5.0000e-005	2.0000e-005	7.0000e-005	0.0000	0.3104	0.3104	0.0000	0.0000	0.3105
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-004	2.3000e-004	2.4300e-003	0.0000	3.6000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3651	0.3651	2.0000e-005	0.0000	0.3655
Total	**9.9000e-004**	**1.7300e-003**	**3.5200e-003**	**0.0000**	**5.5000e-004**	**2.0000e-005**	**5.9000e-004**	**1.5000e-004**	**2.0000e-005**	**1.7000e-004**	**0.0000**	**0.6755**	**0.6755**	**2.0000e-005**	**0.0000**	**0.6760**

3.3 Site Preparation - 2015

Unmitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.2000e-004	6.2900e-003	3.1000e-003	0.0000		3.7000e-004	3.7000e-004		3.4000e-004	3.4000e-004	0.0000	0.3723	0.3723	1.1000e-004	0.0000	0.3747
Total	**6.2000e-004**	**6.2900e-003**	**3.1000e-003**	**0.0000**	**2.7000e-004**	**3.7000e-004**	**6.4000e-004**	**3.0000e-005**	**3.4000e-004**	**3.7000e-004**	**0.0000**	**0.3723**	**0.3723**	**1.1000e-004**	**0.0000**	**0.3747**

3.3 Site Preparation - 2015

Unmitigated Construction Off-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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	5.0000e-005	1.0000e-005	1.5000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0221	0.0221	0.0000	0.0000	0.0222
Total	**5.0000e-005**	**1.0000e-005**	**1.5000e-004**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0221**	**0.0221**	**0.0000**	**0.0000**	**0.0222**

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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.2000e-004	6.2800e-003	3.0900e-003	0.0000		3.7000e-004	3.7000e-004		3.4000e-004	3.4000e-004	0.0000	0.3719	0.3719	1.1000e-004	0.0000	0.3742
Total	**6.2000e-004**	**6.2800e-003**	**3.0900e-003**	**0.0000**	**2.7000e-004**	**3.7000e-004**	**6.4000e-004**	**3.0000e-005**	**3.4000e-004**	**3.7000e-004**	**0.0000**	**0.3719**	**0.3719**	**1.1000e-004**	**0.0000**	**0.3742**

3.3 Site Preparation - 2015

Mitigated Construction Off-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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	5.0000e-005	1.0000e-005	1.5000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0221	0.0221	0.0000	0.0000	0.0222
Total	**5.0000e-005**	**1.0000e-005**	**1.5000e-004**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0221**	**0.0221**	**0.0000**	**0.0000**	**0.0222**

3.4 Grading - 2015

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					7.6400e-003	0.0000	7.6400e-003	4.1500e-003	0.0000	4.1500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.3000e-003	0.0671	0.0475	6.0000e-005		4.1700e-003	4.1700e-003		3.9300e-003	3.9300e-003	0.0000	5.7970	5.7970	1.3700e-003	0.0000	5.8258
Total	**7.3000e-003**	**0.0671**	**0.0475**	**6.0000e-005**	**7.6400e-003**	**4.1700e-003**	**0.0118**	**4.1500e-003**	**3.9300e-003**	**8.0800e-003**	**0.0000**	**5.7970**	**5.7970**	**1.3700e-003**	**0.0000**	**5.8258**

3.4 Grading - 2015

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	4.4700e-003	0.0334	0.0241	7.0000e-005	1.7100e-003	5.2000e-004	2.2400e-003	4.7000e-004	4.8000e-004	9.5000e-004	0.0000	6.8977	6.8977	6.0000e-005	0.0000	6.8989
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8000e-004	1.4000e-004	1.4700e-003	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2212	0.2212	1.0000e-005	0.0000	0.2215
Total	**4.9500e-003**	**0.0336**	**0.0256**	**7.0000e-005**	**1.9300e-003**	**5.2000e-004**	**2.4600e-003**	**5.3000e-004**	**4.8000e-004**	**1.0100e-003**	**0.0000**	**7.1190**	**7.1190**	**7.0000e-005**	**0.0000**	**7.1204**

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					7.6400e-003	0.0000	7.6400e-003	4.1500e-003	0.0000	4.1500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2900e-003	0.0670	0.0474	6.0000e-005		4.1600e-003	4.1600e-003		3.9200e-003	3.9200e-003	0.0000	5.7902	5.7902	1.3700e-003	0.0000	5.8189
Total	**7.2900e-003**	**0.0670**	**0.0474**	**6.0000e-005**	**7.6400e-003**	**4.1600e-003**	**0.0118**	**4.1500e-003**	**3.9200e-003**	**8.0700e-003**	**0.0000**	**5.7902**	**5.7902**	**1.3700e-003**	**0.0000**	**5.8189**

3.4 Grading - 2015

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	4.4700e-003	0.0334	0.0241	7.0000e-005	6.8800e-003	5.2000e-004	7.4000e-003	1.7400e-003	4.8000e-004	2.2200e-003	0.0000	6.8977	6.8977	6.0000e-005	0.0000	6.8989
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8000e-004	1.4000e-004	1.4700e-003	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2212	0.2212	1.0000e-005	0.0000	0.2215
Total	**4.9500e-003**	**0.0336**	**0.0256**	**7.0000e-005**	**7.1000e-003**	**5.2000e-004**	**7.6200e-003**	**1.8000e-003**	**4.8000e-004**	**2.2800e-003**	**0.0000**	**7.1190**	**7.1190**	**7.0000e-005**	**0.0000**	**7.1204**

3.5 Uttilities/Subgrade - 2015

Unmitigated Construction On-Site

Acres of Paving: 0

	ROG	NOx	CO	SO2	Fugitive 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	0.0350	0.3528	0.2322	3.5000e-004		0.0207	0.0207		0.0192	0.0192	0.0000	32.1648	32.1648	9.0300e-003	0.0000	32.3544
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0350**	**0.3528**	**0.2322**	**3.5000e-004**		**0.0207**	**0.0207**		**0.0192**	**0.0192**	**0.0000**	**32.1648**	**32.1648**	**9.0300e-003**	**0.0000**	**32.3544**

3.5 Uttilities/Subgrade - 2015

Unmitigated Construction Off-Site

Acres of Paving: 0

	ROG	NOx	CO	SO2	Fugitive 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	6.1400e-003	1.8200e-003	0.0190	4.0000e-005	2.8300e-003	3.0000e-005	2.8600e-003	7.5000e-004	3.0000e-005	7.8000e-004	0.0000	2.8540	2.8540	1.7000e-004	0.0000	2.8576
Total	**6.1400e-003**	**1.8200e-003**	**0.0190**	**4.0000e-005**	**2.8300e-003**	**3.0000e-005**	**2.8600e-003**	**7.5000e-004**	**3.0000e-005**	**7.8000e-004**	**0.0000**	**2.8540**	**2.8540**	**1.7000e-004**	**0.0000**	**2.8576**

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	0.0349	0.3523	0.2319	3.5000e-004		0.0207	0.0207		0.0191	0.0191	0.0000	32.1265	32.1265	9.0200e-003	0.0000	32.3159
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0349**	**0.3523**	**0.2319**	**3.5000e-004**		**0.0207**	**0.0207**		**0.0191**	**0.0191**	**0.0000**	**32.1265**	**32.1265**	**9.0200e-003**	**0.0000**	**32.3159**

3.5 Uttilities/Subgrade - 2015

Mitigated Construction Off-Site

Acres of Paving: 0

	ROG	NOx	CO	SO2	Fugitive 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	6.1400e-003	1.8200e-003	0.0190	4.0000e-005	2.8300e-003	3.0000e-005	2.8600e-003	7.5000e-004	3.0000e-005	7.8000e-004	0.0000	2.8540	2.8540	1.7000e-004	0.0000	2.8576
Total	**6.1400e-003**	**1.8200e-003**	**0.0190**	**4.0000e-005**	**2.8300e-003**	**3.0000e-005**	**2.8600e-003**	**7.5000e-004**	**3.0000e-005**	**7.8000e-004**	**0.0000**	**2.8540**	**2.8540**	**1.7000e-004**	**0.0000**	**2.8576**

3.6 Building Construction - 2015

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	0.0212	0.1716	0.1048	1.6000e-004		0.0115	0.0115		0.0109	0.0109	0.0000	14.0231	14.0231	3.3800e-003	0.0000	14.0941
Total	**0.0212**	**0.1716**	**0.1048**	**1.6000e-004**		**0.0115**	**0.0115**		**0.0109**	**0.0109**	**0.0000**	**14.0231**	**14.0231**	**3.3800e-003**	**0.0000**	**14.0941**

3.6 Building Construction - 2015

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	3.5000e-004	2.0200e-003	2.5000e-003	0.0000	1.2000e-004	3.0000e-005	1.5000e-004	3.0000e-005	3.0000e-005	6.0000e-005	0.0000	0.3925	0.3925	0.0000	0.0000	0.3925
Worker	7.7400e-003	2.2900e-003	0.0239	5.0000e-005	3.5600e-003	4.0000e-005	3.6000e-003	9.5000e-004	3.0000e-005	9.8000e-004	0.0000	3.5952	3.5952	2.1000e-004	0.0000	3.5997
Total	**8.0900e-003**	**4.3100e-003**	**0.0264**	**5.0000e-005**	**3.6800e-003**	**7.0000e-005**	**3.7500e-003**	**9.8000e-004**	**6.0000e-005**	**1.0400e-003**	**0.0000**	**3.9876**	**3.9876**	**2.1000e-004**	**0.0000**	**3.9922**

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	0.0212	0.1714	0.1047	1.6000e-004		0.0115	0.0115		0.0109	0.0109	0.0000	14.0064	14.0064	3.3800e-003	0.0000	14.0774
Total	**0.0212**	**0.1714**	**0.1047**	**1.6000e-004**		**0.0115**	**0.0115**		**0.0109**	**0.0109**	**0.0000**	**14.0064**	**14.0064**	**3.3800e-003**	**0.0000**	**14.0774**

3.6 Building Construction - 2015

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	3.5000e-004	2.0200e-003	2.5000e-003	0.0000	1.2000e-004	3.0000e-005	1.5000e-004	3.0000e-005	3.0000e-005	6.0000e-005	0.0000	0.3925	0.3925	0.0000	0.0000	0.3925
Worker	7.7400e-003	2.2900e-003	0.0239	5.0000e-005	3.5600e-003	4.0000e-005	3.6000e-003	9.5000e-004	3.0000e-005	9.8000e-004	0.0000	3.5952	3.5952	2.1000e-004	0.0000	3.5997
Total	**8.0900e-003**	**4.3100e-003**	**0.0264**	**5.0000e-005**	**3.6800e-003**	**7.0000e-005**	**3.7500e-003**	**9.8000e-004**	**6.0000e-005**	**1.0400e-003**	**0.0000**	**3.9876**	**3.9876**	**2.1000e-004**	**0.0000**	**3.9922**

3.7 Tank - 2015

Unmitigated Construction On-Site

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0

	ROG	NOx	CO	SO2	Fugitive 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	0.0218	0.1681	0.0971	1.5000e-004		0.0107	0.0107		0.0103	0.0103	0.0000	13.4083	13.4083	2.9900e-003	0.0000	13.4710
Total	**0.0218**	**0.1681**	**0.0971**	**1.5000e-004**		**0.0107**	**0.0107**		**0.0103**	**0.0103**	**0.0000**	**13.4083**	**13.4083**	**2.9900e-003**	**0.0000**	**13.4710**

3.7 Tank - 2015

Unmitigated Construction Off-Site

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0

	ROG	NOx	CO	SO2	Fugitive 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	4.6000e-004	2.6400e-003	3.2700e-003	1.0000e-005	1.6000e-004	4.0000e-005	2.0000e-004	4.0000e-005	4.0000e-005	8.0000e-005	0.0000	0.5132	0.5132	0.0000	0.0000	0.5133
Worker	4.4500e-003	1.3200e-003	0.0138	3.0000e-005	2.0500e-003	2.0000e-005	2.0700e-003	5.4000e-004	2.0000e-005	5.6000e-004	0.0000	2.0686	2.0686	1.2000e-004	0.0000	2.0712
Total	**4.9100e-003**	**3.9600e-003**	**0.0170**	**4.0000e-005**	**2.2100e-003**	**6.0000e-005**	**2.2700e-003**	**5.8000e-004**	**6.0000e-005**	**6.4000e-004**	**0.0000**	**2.5818**	**2.5818**	**1.2000e-004**	**0.0000**	**2.5845**

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	0.0217	0.1679	0.0970	1.5000e-004		0.0107	0.0107		0.0103	0.0103	0.0000	13.3923	13.3923	2.9800e-003	0.0000	13.4550
Total	**0.0217**	**0.1679**	**0.0970**	**1.5000e-004**		**0.0107**	**0.0107**		**0.0103**	**0.0103**	**0.0000**	**13.3923**	**13.3923**	**2.9800e-003**	**0.0000**	**13.4550**

3.7 Tank - 2015

Mitigated Construction Off-Site

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0

	ROG	NOx	CO	SO2	Fugitive 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	4.6000e-004	2.6400e-003	3.2700e-003	1.0000e-005	1.6000e-004	4.0000e-005	2.0000e-004	4.0000e-005	4.0000e-005	8.0000e-005	0.0000	0.5132	0.5132	0.0000	0.0000	0.5133
Worker	4.4500e-003	1.3200e-003	0.0138	3.0000e-005	2.0500e-003	2.0000e-005	2.0700e-003	5.4000e-004	2.0000e-005	5.6000e-004	0.0000	2.0686	2.0686	1.2000e-004	0.0000	2.0712
Total	**4.9100e-003**	**3.9600e-003**	**0.0170**	**4.0000e-005**	**2.2100e-003**	**6.0000e-005**	**2.2700e-003**	**5.8000e-004**	**6.0000e-005**	**6.4000e-004**	**0.0000**	**2.5818**	**2.5818**	**1.2000e-004**	**0.0000**	**2.5845**

3.8 Paving - 2015

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	6.0000e-004	5.7700e-003	3.6800e-003	1.0000e-005		3.6000e-004	3.6000e-004		3.4000e-004	3.4000e-004	0.0000	0.4960	0.4960	1.3000e-004	0.0000	0.4989
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.0000e-004**	**5.7700e-003**	**3.6800e-003**	**1.0000e-005**		**3.6000e-004**	**3.6000e-004**		**3.4000e-004**	**3.4000e-004**	**0.0000**	**0.4960**	**0.4960**	**1.3000e-004**	**0.0000**	**0.4989**

3.8 Paving - 2015

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	1.4000e-004	4.0000e-005	4.4000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0664	0.0664	0.0000	0.0000	0.0665
Total	**1.4000e-004**	**4.0000e-005**	**4.4000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0664**	**0.0664**	**0.0000**	**0.0000**	**0.0665**

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	6.0000e-004	5.7600e-003	3.6700e-003	1.0000e-005		3.6000e-004	3.6000e-004		3.3000e-004	3.3000e-004	0.0000	0.4954	0.4954	1.3000e-004	0.0000	0.4983
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.0000e-004**	**5.7600e-003**	**3.6700e-003**	**1.0000e-005**		**3.6000e-004**	**3.6000e-004**		**3.3000e-004**	**3.3000e-004**	**0.0000**	**0.4954**	**0.4954**	**1.3000e-004**	**0.0000**	**0.4983**

3.8 Paving - 2015

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	1.4000e-004	4.0000e-005	4.4000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0664	0.0664	0.0000	0.0000	0.0665
Total	**1.4000e-004**	**4.0000e-005**	**4.4000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0664**	**0.0664**	**0.0000**	**0.0000**	**0.0665**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.535275	0.058759	0.178478	0.127034	0.038632	0.006246	0.015618	0.028471	0.002426	0.003171	0.003696	0.000547	0.001645

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	68.9662	68.9662	3.1700e-003	6.6000e-004	69.2361
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	68.9662	68.9662	3.1700e-003	6.6000e-004	69.2361
NaturalGas Mitigated	2.0300e-003	0.0184	0.0155	1.1000e-004		1.4000e-003	1.4000e-003		1.4000e-003	1.4000e-003	0.0000	20.0755	20.0755	3.8000e-004	3.7000e-004	20.1976
NaturalGas Unmitigated	2.0300e-003	0.0184	0.0155	1.1000e-004		1.4000e-003	1.4000e-003		1.4000e-003	1.4000e-003	0.0000	20.0755	20.0755	3.8000e-004	3.7000e-004	20.1976

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	376200	2.0300e-003	0.0184	0.0155	1.1000e-004		1.4000e-003	1.4000e-003		1.4000e-003	1.4000e-003	0.0000	20.0755	20.0755	3.8000e-004	3.7000e-004	20.1976
Total		**2.0300e-003**	**0.0184**	**0.0155**	**1.1000e-004**		**1.4000e-003**	**1.4000e-003**		**1.4000e-003**	**1.4000e-003**	**0.0000**	**20.0755**	**20.0755**	**3.8000e-004**	**3.7000e-004**	**20.1976**

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					
General Light Industry	376200	2.0300e-003	0.0184	0.0155	1.1000e-004		1.4000e-003	1.4000e-003		1.4000e-003	1.4000e-003	0.0000	20.0755	20.0755	3.8000e-004	3.7000e-004	20.1976
Total		**2.0300e-003**	**0.0184**	**0.0155**	**1.1000e-004**		**1.4000e-003**	**1.4000e-003**		**1.4000e-003**	**1.4000e-003**	**0.0000**	**20.0755**	**20.0755**	**3.8000e-004**	**3.7000e-004**	**20.1976**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	241000	68.9662	3.1700e-003	6.6000e-004	69.2361
Total		**68.9662**	**3.1700e-003**	**6.6000e-004**	**69.2361**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	241000	68.9662	3.1700e-003	6.6000e-004	69.2361
Total		**68.9662**	**3.1700e-003**	**6.6000e-004**	**69.2361**

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	0.0955	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-004	5.0000e-004	0.0000	0.0000	5.3000e-004
Unmitigated	0.0955	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-004	5.0000e-004	0.0000	0.0000	5.3000e-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	0.0232					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0723					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-004	5.0000e-004	0.0000	0.0000	5.3000e-004
Total	**0.0955**	**0.0000**	**2.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**5.0000e-004**	**5.0000e-004**	**0.0000**	**0.0000**	**5.3000e-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	0.0232					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0723					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-004	5.0000e-004	0.0000	0.0000	5.3000e-004
Total	**0.0955**	**0.0000**	**2.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**5.0000e-004**	**5.0000e-004**	**0.0000**	**0.0000**	**5.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	18.7009	0.1515	3.7200e-003	23.0339
Unmitigated	18.7009	0.1515	3.7200e-003	23.0363

7.2 Water by Land Use

Unmitigated

	Indoor/ Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	4.625 / 0	18.7009	0.1515	3.7200e-003	23.0363
Total		**18.7009**	**0.1515**	**3.7200e-003**	**23.0363**

7.2 Water by Land Use

Mitigated

	Indoor/ Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	4.625 / 0	18.7009	0.1515	3.7200e-003	23.0339
Total		**18.7009**	**0.1515**	**3.7200e-003**	**23.0339**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	5.0342	0.2975	0.0000	11.2819
Unmitigated	5.0342	0.2975	0.0000	11.2819

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	24.8	5.0342	0.2975	0.0000	11.2819
Total		**5.0342**	**0.2975**	**0.0000**	**11.2819**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	24.8	5.0342	0.2975	0.0000	11.2819
Total		**5.0342**	**0.2975**	**0.0000**	**11.2819**

9.0 Operational Offroad

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

10.0 Vegetation

LADWP Griffith Tank Replacement and Pump Station

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	20.00	1000sqft	0.46	20,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	11			**Operational Year**	2014
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Adjust phasing to match contractor data

Off-road Equipment - Adjust equipment mix based on contractor data

Off-road Equipment - Adjust equipment mix based on contractor data

Off-road Equipment - Adjust equipment mix based on contractor data

Off-road Equipment - Adjust equipment mix based on contractor data

Off-road Equipment - Adjust equipment mix based on contractor data

Off-road Equipment - Adjust equipment mix based on contractor data

Off-road Equipment -

Grading -

Demolition -

Trips and VMT - Adjust haul trips to match contractor data. Adjust construction worker trips based on contractor data

Vehicle Trips - No daily vehicle trips associated with tank and pumps station

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	13.00
tblConstructionPhase	NumDays	10.00	3.00
tblConstructionPhase	NumDays	2.00	5.00
tblConstructionPhase	NumDays	5.00	43.00
tblConstructionPhase	NumDays	5.00	1.00
tblConstructionPhase	NumDays	100.00	17.00
tblConstructionPhase	PhaseEndDate	5/12/2015	5/13/2015
tblConstructionPhase	PhaseStartDate	3/13/2015	3/15/2015
tblGrading	MaterialExported	0.00	2,000.00
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Dumpers/Tenders

tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	1.00	4.00
tblOffRoadEquipment	UsageHours	6.00	1.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblTripsAndVMT	HaulingTripNumber	32.00	9.00
tblTripsAndVMT	HaulingTripNumber	250.00	200.00
tblTripsAndVMT	WorkerTripNumber	15.00	22.00
tblTripsAndVMT	WorkerTripNumber	5.00	4.00
tblTripsAndVMT	WorkerTripNumber	25.00	8.00
tblTripsAndVMT	WorkerTripNumber	8.00	50.00
tblTripsAndVMT	WorkerTripNumber	20.00	12.00

tblTripsAndVMT	WorkerTripNumber	8.00	22.00
tblTripsAndVMT	WorkerTripNumber	18.00	12.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	4.8374	39.5849	28.2533	0.0567	3.8421	1.8776	5.7197	1.8764	1.7648	3.6411	0.0000	5,702.1383	5,702.1383	0.6342	0.0000	5,715.4554
Total	**4.8374**	**39.5849**	**28.2533**	**0.0567**	**3.8421**	**1.8776**	**5.7197**	**1.8764**	**1.7648**	**3.6411**	**0.0000**	**5,702.1383**	**5,702.1383**	**0.6342**	**0.0000**	**5,715.4554**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	4.8347	39.5602	28.2359	0.0567	5.9575	1.8760	7.8335	2.3956	1.7633	4.1589	0.0000	5,699.7932	5,699.7932	0.6336	0.0000	5,713.0987
Total	**4.8347**	**39.5602**	**28.2359**	**0.0567**	**5.9575**	**1.8760**	**7.8335**	**2.3956**	**1.7633**	**4.1589**	**0.0000**	**5,699.7932**	**5,699.7932**	**0.6336**	**0.0000**	**5,713.0987**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.0554**	**0.0622**	**0.0617**	**0.0529**	**-55.0573**	**0.0815**	**-36.9574**	**-27.6723**	**0.0822**	**-14.2207**	**0.0000**	**0.0411**	**0.0411**	**0.0883**	**0.0000**	**0.0412**

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	0.5232	2.0000e-005	2.1300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.3800e-003	4.3800e-003	1.0000e-005		4.6500e-003
Energy	0.0111	0.1011	0.0849	6.1000e-004		7.6800e-003	7.6800e-003		7.6800e-003	7.6800e-003		121.2571	121.2571	2.3200e-003	2.2200e-003	121.9950
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	**0.5343**	**0.1011**	**0.0870**	**6.1000e-004**	**0.0000**	**7.6900e-003**	**7.6900e-003**	**0.0000**	**7.6900e-003**	**7.6900e-003**		**121.2614**	**121.2614**	**2.3300e-003**	**2.2200e-003**	**121.9997**

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	0.5232	2.0000e-005	2.1300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.3800e-003	4.3800e-003	1.0000e-005		4.6500e-003
Energy	0.0111	0.1011	0.0849	6.1000e-004		7.6800e-003	7.6800e-003		7.6800e-003	7.6800e-003		121.2571	121.2571	2.3200e-003	2.2200e-003	121.9950
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	**0.5343**	**0.1011**	**0.0870**	**6.1000e-004**	**0.0000**	**7.6900e-003**	**7.6900e-003**	**0.0000**	**7.6900e-003**	**7.6900e-003**		**121.2614**	**121.2614**	**2.3300e-003**	**2.2200e-003**	**121.9997**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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	3/2/2015	3/4/2015	5	3	
2	Site Preparation	Site Preparation	3/5/2015	3/5/2015	5	1	
3	Grading	Grading	3/6/2015	3/12/2015	5	5	
4	Uttilities/Subgrade	Paving	3/15/2015	5/13/2015	5	43	
5	Building Construction	Building Construction	5/14/2015	6/1/2015	5	13	
6	Tank	Building Construction	6/2/2015	6/24/2015	5	17	
7	Paving	Paving	6/25/2015	6/25/2015	5	1	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Tank	Pumps	1	8.00	84	0.74
Grading	Excavators	1	7.00	162	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Dumpers/Tenders	2	8.00	16	0.38
Building Construction	Cranes	1	8.00	226	0.29
Tank	Plate Compactors	1	8.00	8	0.43
Grading	Rollers	1	8.00	80	0.38
Grading	Dumpers/Tenders	4	8.00	16	0.38
Building Construction	Cement and Mortar Mixers	2	2.00	9	0.56

Building Construction	Pumps	1	8.00	84	0.74
Grading	Rubber Tired Dozers	1	4.00	255	0.40
Tank	Welders	1	8.00	46	0.45
Demolition	Tractors/Loaders/Backhoes	1	1.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Building Construction	Plate Compactors	1	8.00	8	0.43
Site Preparation	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Tank	Cranes	1	8.00	226	0.29
Uttilities/Subgrade	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
Tank	Tractors/Loaders/Backhoes	1	1.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Uttilities/Subgrade	Excavators	1	8.00	162	0.38
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Forklifts	2	6.00	89	0.20
Tank	Forklifts	2	6.00	89	0.20
Site Preparation	Graders	1	8.00	174	0.41
Uttilities/Subgrade	Pavers	1	7.00	125	0.42
Uttilities/Subgrade	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Uttilities/Subgrade	Tractors/Loaders/Backhoes	1	7.00	97	0.37
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	6	22.00	0.00	9.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	10	8.00	0.00	200.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	10	50.00	3.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Uttilities/Subgrade	8	12.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Tank	7	22.00	3.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	12.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2015

Unmitigated Construction On-Site

Acres of Grading: 0.5

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.3111	0.0000	2.3111	0.3499	0.0000	0.3499			0.0000			0.0000
Off-Road	1.4261	11.5979	8.4082	0.0124		0.8142	0.8142		0.7833	0.7833		1,199.7113	1,199.7113	0.2218		1,204.3682
Total	**1.4261**	**11.5979**	**8.4082**	**0.0124**	**2.3111**	**0.8142**	**3.1253**	**0.3499**	**0.7833**	**1.1332**		**1,199.7113**	**1,199.7113**	**0.2218**		**1,204.3682**

3.2 Demolition - 2015

Unmitigated Construction Off-Site

Acres of Grading: 0.5

	ROG	NOx	CO	SO2	Fugitive 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	0.1304	0.9519	0.6489	2.2400e-003	0.0522	0.0157	0.0679	0.0143	0.0144	0.0287		228.3275	228.3275	1.8600e-003		228.3665
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	0.4967	0.1364	1.6822	3.2000e-003	0.2459	2.4600e-003	0.2484	0.0652	2.2500e-003	0.0675		279.7127	279.7127	0.0160		280.0480
Total	**0.6271**	**1.0883**	**2.3311**	**5.4400e-003**	**0.2981**	**0.0182**	**0.3163**	**0.0795**	**0.0167**	**0.0962**		**508.0402**	**508.0402**	**0.0178**		**508.4144**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.3111	0.0000	2.3111	0.3499	0.0000	0.3499			0.0000			0.0000
Off-Road	1.4248	11.5873	8.4005	0.0124		0.8134	0.8134		0.7826	0.7826	0.0000	1,198.6107	1,198.6107	0.2216		1,203.2632
Total	**1.4248**	**11.5873**	**8.4005**	**0.0124**	**2.3111**	**0.8134**	**3.1245**	**0.3499**	**0.7826**	**1.1325**	**0.0000**	**1,198.6107**	**1,198.6107**	**0.2216**		**1,203.2632**

3.2 Demolition - 2015

Mitigated Construction Off-Site

Acres of Grading: 0.5

	ROG	NOx	CO	SO2	Fugitive 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	0.1304	0.9519	0.6489	2.2400e-003	0.1316	0.0157	0.1473	0.0338	0.0144	0.0482		228.3275	228.3275	1.8600e-003		228.3665
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	0.4967	0.1364	1.6822	3.2000e-003	0.2459	2.4600e-003	0.2484	0.0652	2.2500e-003	0.0675		279.7127	279.7127	0.0160		280.0480
Total	**0.6271**	**1.0883**	**2.3311**	**5.4400e-003**	**0.3775**	**0.0182**	**0.3956**	**0.0990**	**0.0167**	**0.1157**		**508.0402**	**508.0402**	**0.0178**		**508.4144**

3.3 Site Preparation - 2015

Unmitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.2420	12.5839	6.1935	7.8000e-003		0.7454	0.7454		0.6858	0.6858		820.8103	820.8103	0.2451		825.9563
Total	**1.2420**	**12.5839**	**6.1935**	**7.8000e-003**	**0.5303**	**0.7454**	**1.2756**	**0.0573**	**0.6858**	**0.7430**		**820.8103**	**820.8103**	**0.2451**		**825.9563**

3.3 Site Preparation - 2015

Unmitigated Construction Off-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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	0.0903	0.0248	0.3059	5.8000e-004	0.0447	4.5000e-004	0.0452	0.0119	4.1000e-004	0.0123		50.8569	50.8569	2.9000e-003		50.9178
Total	**0.0903**	**0.0248**	**0.3059**	**5.8000e-004**	**0.0447**	**4.5000e-004**	**0.0452**	**0.0119**	**4.1000e-004**	**0.0123**		**50.8569**	**50.8569**	**2.9000e-003**		**50.9178**

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					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.2409	12.5723	6.1878	7.8000e-003		0.7447	0.7447		0.6851	0.6851	0.0000	820.0573	820.0573	0.2448		825.1985
Total	**1.2409**	**12.5723**	**6.1878**	**7.8000e-003**	**0.5303**	**0.7447**	**1.2750**	**0.0573**	**0.6851**	**0.7424**	**0.0000**	**820.0573**	**820.0573**	**0.2448**		**825.1985**

3.3 Site Preparation - 2015

Mitigated Construction Off-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive 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	0.0903	0.0248	0.3059	5.8000e-004	0.0447	4.5000e-004	0.0452	0.0119	4.1000e-004	0.0123		50.8569	50.8569	2.9000e-003		50.9178
Total	**0.0903**	**0.0248**	**0.3059**	**5.8000e-004**	**0.0447**	**4.5000e-004**	**0.0452**	**0.0119**	**4.1000e-004**	**0.0123**		**50.8569**	**50.8569**	**2.9000e-003**		**50.9178**

3.4 Grading - 2015

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					3.0563	0.0000	3.0563	1.6620	0.0000	1.6620			0.0000			0.0000
Off-Road	2.9188	26.8435	18.9895	0.0256		1.6674	1.6674		1.5715	1.5715		2,556.0578	2,556.0578	0.6036		2,568.7333
Total	**2.9188**	**26.8435**	**18.9895**	**0.0256**	**3.0563**	**1.6674**	**4.7237**	**1.6620**	**1.5715**	**3.2335**		**2,556.0578**	**2,556.0578**	**0.6036**		**2,568.7333**

3.4 Grading - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.7379	12.6917	8.6522	0.0299	0.6964	0.2092	0.9057	0.1907	0.1924	0.3831		3,044.3667	3,044.3667	0.0248		3,044.8865
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	0.1806	0.0496	0.6117	1.1600e-003	0.0894	8.9000e-004	0.0903	0.0237	8.2000e-004	0.0245		101.7137	101.7137	5.8000e-003		101.8356
Total	**1.9186**	**12.7413**	**9.2639**	**0.0311**	**0.7859**	**0.2101**	**0.9960**	**0.2144**	**0.1933**	**0.4077**		**3,146.0804**	**3,146.0804**	**0.0306**		**3,146.7221**

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					3.0563	0.0000	3.0563	1.6620	0.0000	1.6620			0.0000			0.0000
Off-Road	2.9162	26.8189	18.9721	0.0256		1.6659	1.6659		1.5701	1.5701	0.0000	2,553.7128	2,553.7128	0.6030		2,566.3766
Total	**2.9162**	**26.8189**	**18.9721**	**0.0256**	**3.0563**	**1.6659**	**4.7222**	**1.6620**	**1.5701**	**3.2320**	**0.0000**	**2,553.7128**	**2,553.7128**	**0.6030**		**2,566.3766**

3.4 Grading - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.7379	12.6917	8.6522	0.0299	2.8118	0.2092	3.0210	0.7099	0.1924	0.9024		3,044.3667	3,044.3667	0.0248		3,044.8865
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	0.1806	0.0496	0.6117	1.1600e-003	0.0894	8.9000e-004	0.0903	0.0237	8.2000e-004	0.0245		101.7137	101.7137	5.8000e-003		101.8356
Total	**1.9186**	**12.7413**	**9.2639**	**0.0311**	**2.9012**	**0.2101**	**3.1114**	**0.7336**	**0.1933**	**0.9269**		**3,146.0804**	**3,146.0804**	**0.0306**		**3,146.7221**

3.5 Uttilities/Subgrade - 2015

Unmitigated Construction On-Site

Acres of Paving: 0

	ROG	NOx	CO	SO2	Fugitive 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	1.6258	16.4075	10.7978	0.0164		0.9648	0.9648		0.8912	0.8912		1,649.0984	1,649.0984	0.4628		1,658.8175
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6258**	**16.4075**	**10.7978**	**0.0164**		**0.9648**	**0.9648**		**0.8912**	**0.8912**		**1,649.0984**	**1,649.0984**	**0.4628**		**1,658.8175**

3.5 Uttilities/Subgrade - 2015

Unmitigated Construction Off-Site

Acres of Paving: 0

	ROG	NOx	CO	SO2	Fugitive 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	0.2709	0.0744	0.9175	1.7500e-003	0.1341	1.3400e-003	0.1355	0.0356	1.2300e-003	0.0368		152.5706	152.5706	8.7100e-003		152.7534
Total	**0.2709**	**0.0744**	**0.9175**	**1.7500e-003**	**0.1341**	**1.3400e-003**	**0.1355**	**0.0356**	**1.2300e-003**	**0.0368**		**152.5706**	**152.5706**	**8.7100e-003**		**152.7534**

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	1.6243	16.3925	10.7878	0.0164		0.9639	0.9639		0.8904	0.8904	0.0000	1,647.5854	1,647.5854	0.4624		1,657.2956
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6243**	**16.3925**	**10.7878**	**0.0164**		**0.9639**	**0.9639**		**0.8904**	**0.8904**	**0.0000**	**1,647.5854**	**1,647.5854**	**0.4624**		**1,657.2956**

3.5 Uttilities/Subgrade - 2015

Mitigated Construction Off-Site

Acres of Paving: 0

	ROG	NOx	CO	SO2	Fugitive 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	0.2709	0.0744	0.9175	1.7500e-003	0.1341	1.3400e-003	0.1355	0.0356	1.2300e-003	0.0368		152.5706	152.5706	8.7100e-003		152.7534
Total	**0.2709**	**0.0744**	**0.9175**	**1.7500e-003**	**0.1341**	**1.3400e-003**	**0.1355**	**0.0356**	**1.2300e-003**	**0.0368**		**152.5706**	**152.5706**	**8.7100e-003**		**152.7534**

3.6 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.2650	26.3943	16.1234	0.0241		1.7740	1.7740		1.6780	1.6780		2,378.1301	2,378.1301	0.5735		2,390.1735
Total	**3.2650**	**26.3943**	**16.1234**	**0.0241**		**1.7740**	**1.7740**		**1.6780**	**1.6780**		**2,378.1301**	**2,378.1301**	**0.5735**		**2,390.1735**

3.6 Building Construction - 2015

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	0.0514	0.2966	0.3331	6.6000e-004	0.0187	4.9700e-003	0.0237	5.3200e-003	4.5700e-003	9.8900e-003		66.7856	66.7856	5.4000e-004		66.7969
Worker	1.1289	0.3100	3.8231	7.2700e-003	0.5589	5.5800e-003	0.5645	0.1482	5.1200e-003	0.1533		635.7107	635.7107	0.0363		636.4726
Total	**1.1803**	**0.6066**	**4.1562**	**7.9300e-003**	**0.5776**	**0.0106**	**0.5881**	**0.1535**	**9.6900e-003**	**0.1632**		**702.4964**	**702.4964**	**0.0368**		**703.2695**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.2620	26.3700	16.1086	0.0241		1.7724	1.7724		1.6764	1.6764	0.0000	2,375.9483	2,375.9483	0.5730		2,387.9806
Total	**3.2620**	**26.3700**	**16.1086**	**0.0241**		**1.7724**	**1.7724**		**1.6764**	**1.6764**	**0.0000**	**2,375.9483**	**2,375.9483**	**0.5730**		**2,387.9806**

3.6 Building Construction - 2015

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	0.0514	0.2966	0.3331	6.6000e-004	0.0187	4.9700e-003	0.0237	5.3200e-003	4.5700e-003	9.8900e-003		66.7856	66.7856	5.4000e-004		66.7969
Worker	1.1289	0.3100	3.8231	7.2700e-003	0.5589	5.5800e-003	0.5645	0.1482	5.1200e-003	0.1533		635.7107	635.7107	0.0363		636.4726
Total	**1.1803**	**0.6066**	**4.1562**	**7.9300e-003**	**0.5776**	**0.0106**	**0.5881**	**0.1535**	**9.6900e-003**	**0.1632**		**702.4964**	**702.4964**	**0.0368**		**703.2695**

3.7 Tank - 2015

Unmitigated Construction On-Site

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5598	19.7738	11.4212	0.0179		1.2627	1.2627		1.2070	1.2070		1,738.8326	1,738.8326	0.3876		1,746.9712
Total	**2.5598**	**19.7738**	**11.4212**	**0.0179**		**1.2627**	**1.2627**		**1.2070**	**1.2070**		**1,738.8326**	**1,738.8326**	**0.3876**		**1,746.9712**

3.7 Tank - 2015

Unmitigated Construction Off-Site

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0

	ROG	NOx	CO	SO2	Fugitive 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	0.0514	0.2966	0.3331	6.6000e-004	0.0187	4.9700e-003	0.0237	5.3200e-003	4.5700e-003	9.8900e-003		66.7856	66.7856	5.4000e-004		66.7969
Worker	0.4967	0.1364	1.6822	3.2000e-003	0.2459	2.4600e-003	0.2484	0.0652	2.2500e-003	0.0675		279.7127	279.7127	0.0160		280.0480
Total	**0.5481**	**0.4330**	**2.0152**	**3.8600e-003**	**0.2646**	**7.4300e-003**	**0.2720**	**0.0705**	**6.8200e-003**	**0.0774**		**346.4984**	**346.4984**	**0.0165**		**346.8448**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5575	19.7556	11.4107	0.0179		1.2616	1.2616		1.2059	1.2059	0.0000	1,737.2373	1,737.2373	0.3872		1,745.3685
Total	**2.5575**	**19.7556**	**11.4107**	**0.0179**		**1.2616**	**1.2616**		**1.2059**	**1.2059**	**0.0000**	**1,737.2373**	**1,737.2373**	**0.3872**		**1,745.3685**

3.7 Tank - 2015

Mitigated Construction Off-Site

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0

	ROG	NOx	CO	SO2	Fugitive 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	0.0514	0.2966	0.3331	6.6000e-004	0.0187	4.9700e-003	0.0237	5.3200e-003	4.5700e-003	9.8900e-003		66.7856	66.7856	5.4000e-004		66.7969
Worker	0.4967	0.1364	1.6822	3.2000e-003	0.2459	2.4600e-003	0.2484	0.0652	2.2500e-003	0.0675		279.7127	279.7127	0.0160		280.0480
Total	**0.5481**	**0.4330**	**2.0152**	**3.8600e-003**	**0.2646**	**7.4300e-003**	**0.2720**	**0.0705**	**6.8200e-003**	**0.0774**		**346.4984**	**346.4984**	**0.0165**		**346.8448**

3.8 Paving - 2015

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	1.2092	11.5427	7.3586	0.0111		0.7247	0.7247		0.6703	0.6703		1,093.5433	1,093.5433	0.2970		1,099.7794
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2092**	**11.5427**	**7.3586**	**0.0111**		**0.7247**	**0.7247**		**0.6703**	**0.6703**		**1,093.5433**	**1,093.5433**	**0.2970**		**1,099.7794**

3.8 Paving - 2015

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	0.2709	0.0744	0.9175	1.7500e-003	0.1341	1.3400e-003	0.1355	0.0356	1.2300e-003	0.0368		152.5706	152.5706	8.7100e-003		152.7534
Total	**0.2709**	**0.0744**	**0.9175**	**1.7500e-003**	**0.1341**	**1.3400e-003**	**0.1355**	**0.0356**	**1.2300e-003**	**0.0368**		**152.5706**	**152.5706**	**8.7100e-003**		**152.7534**

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	1.2081	11.5321	7.3518	0.0111		0.7240	0.7240		0.6697	0.6697	0.0000	1,092.5401	1,092.5401	0.2967		1,098.7705
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2081**	**11.5321**	**7.3518**	**0.0111**		**0.7240**	**0.7240**		**0.6697**	**0.6697**	**0.0000**	**1,092.5401**	**1,092.5401**	**0.2967**		**1,098.7705**

3.8 Paving - 2015

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	0.2709	0.0744	0.9175	1.7500e-003	0.1341	1.3400e-003	0.1355	0.0356	1.2300e-003	0.0368		152.5706	152.5706	8.7100e-003		152.7534
Total	**0.2709**	**0.0744**	**0.9175**	**1.7500e-003**	**0.1341**	**1.3400e-003**	**0.1355**	**0.0356**	**1.2300e-003**	**0.0368**		**152.5706**	**152.5706**	**8.7100e-003**		**152.7534**

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

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.535275	0.058759	0.178478	0.127034	0.038632	0.006246	0.015618	0.028471	0.002426	0.003171	0.003696	0.000547	0.001645

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0111	0.1011	0.0849	6.1000e-004		7.6800e-003	7.6800e-003		7.6800e-003	7.6800e-003		121.2571	121.2571	2.3200e-003	2.2200e-003	121.9950
NaturalGas Unmitigated	0.0111	0.1011	0.0849	6.1000e-004		7.6800e-003	7.6800e-003		7.6800e-003	7.6800e-003		121.2571	121.2571	2.3200e-003	2.2200e-003	121.9950

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	1030.68	0.0111	0.1011	0.0849	6.1000e-004		7.6800e-003	7.6800e-003		7.6800e-003	7.6800e-003		121.2571	121.2571	2.3200e-003	2.2200e-003	121.9950
Total		**0.0111**	**0.1011**	**0.0849**	**6.1000e-004**		**7.6800e-003**	**7.6800e-003**		**7.6800e-003**	**7.6800e-003**		**121.2571**	**121.2571**	**2.3200e-003**	**2.2200e-003**	**121.9950**

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					
General Light Industry	1.03068	0.0111	0.1011	0.0849	6.1000e-004		7.6800e-003	7.6800e-003		7.6800e-003	7.6800e-003		121.2571	121.2571	2.3200e-003	2.2200e-003	121.9950
Total		**0.0111**	**0.1011**	**0.0849**	**6.1000e-004**		**7.6800e-003**	**7.6800e-003**		**7.6800e-003**	**7.6800e-003**		**121.2571**	**121.2571**	**2.3200e-003**	**2.2200e-003**	**121.9950**

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	0.5232	2.0000e-005	2.1300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.3800e-003	4.3800e-003	1.0000e-005		4.6500e-003
Unmitigated	0.5232	2.0000e-005	2.1300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.3800e-003	4.3800e-003	1.0000e-005		4.6500e-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	0.1270					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3960					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.2000e-004	2.0000e-005	2.1300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.3800e-003	4.3800e-003	1.0000e-005		4.6500e-003
Total	**0.5232**	**2.0000e-005**	**2.1300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.3800e-003**	**4.3800e-003**	**1.0000e-005**		**4.6500e-003**

6.2 Area by SubCategory

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	0.1270					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3960					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.2000e-004	2.0000e-005	2.1300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.3800e-003	4.3800e-003	1.0000e-005		4.6500e-003
Total	**0.5232**	**2.0000e-005**	**2.1300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.3800e-003**	**4.3800e-003**	**1.0000e-005**		**4.6500e-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

10.0 Vegetation