INITIAL STUDY/ MITIGATED NEGATIVE DECLARATION

NORTH HOLLYWOOD CHLORINATION STATIONS AND NHOU2IR WEST TREATMENT PROJECT

PREPARED BY

Los Angeles Department of Water & Power

Environmental Affairs
111 North Hope Street, Room 1044
Los Angeles, California 90012

WITH ASSISTANCE FROM

DUDEK

27372 Calle Arroyo
San Juan Capistrano, California 92675

OCTOBER 2022

PRINTED ON 30% POST-CONSUMER RECYCLED MATERIAL.

TABLE OF CONTENTS

SECTION PAGE NO.

ACRONYMS AND ABBREVIATIONS I

1 INTRODUCTION 1
- 1.1 Overview of the Project 1
- 1.2 California Environmental Quality Act and Scope of IS/MND 1
- 1.3 Existing Setting 3
  - 1.3.1 NHW Chlorination Station 3
  - 1.3.2 RT Chlorination Station and NHOU2IR Groundwater Treatment Facility 3
  - 1.3.3 NHC Chlorination Station 4
- 1.4 Project Background and Purpose 5

2 PROJECT DESCRIPTION 15
- 2.1 Proposed Chlorination Station Capacities 15
- 2.2 OSHG Systems 16
- 2.3 Proposed Chlorination Station Components 17
  - 2.3.1 NHW Chlorination Station 17
  - 2.3.2 RT Chlorination Station 17
  - 2.3.3 NHC Chlorination Station 18
- 2.4 Project Construction 18
  - 2.4.1 NHW Chlorination Station Modifications 18
  - 2.4.2 RT Chlorination Station Upgrade Construction 19
  - 2.4.3 NHC Chlorination Station Construction 20
- 2.5 Project Operation 23
  - 2.5.1 NHW Chlorination Station Operation 23
  - 2.5.2 RT Chlorination Station Operation 23
  - 2.5.3 NHC Chlorination Station Operation 24
  - 2.5.4 NHOU2IR Treatment Facility Operation 24
- 2.6 Discretionary Approvals Required for the Project 27

3 INITIAL STUDY CHECKLIST 35
- 3.1 Aesthetics 41
- 3.2 Agriculture and Forestry Resources 44
- 3.3 Air Quality 47
- 3.4 Biological Resources 63
- 3.5 Cultural Resources 70
- 3.6 Energy 75
- 3.7 Geology and Soils 80

3.8 Greenhouse Gas Emissions ... 87
3.9 Hazards and Hazardous Materials ... 95
3.10 Hydrology and Water Quality ... 104
3.11 Land Use and Planning ... 113
3.12 Mineral Resources ... 115
3.13 Noise ... 116
3.14 Population and Housing ... 127
3.15 Public Services ... 129
3.16 Recreation ... 130
3.17 Transportation ... 131
3.18 Tribal Cultural Resources ... 139
3.19 Utilities and Service Systems ... 143
3.20 Wildfire ... 148
3.21 Mandatory Findings of Significance ... 150

4 REPORT PREPARERS ... 157

APPENDICES

A Air Quality and Greenhouse Gas Modeling Outputs
B Biological Resources Database Results
C Cultural and Tribal Cultural Resources Reports
D Noise
E Transportation

FIGURES

1 Project Location ... 7
2 North Hollywood West Property ... 9
3 Rinaldi-Toluca (Lankershim Yard) Property ... 11
4 North Hollywood Central Property ... 13
5 North Hollywood West Chlorination Station ... 29
6 Rinaldi-Toluca Chlorination Station ... 31
7 North Hollywood Central Chlorination Station ... 33

TABLES

2-1 Capacities at Proposed Chlorination Stations 16
2-2 Chlorination Stations Construction Equipment, Truck Roundtrips, and Personnel 22
3.3-1 SCAQMD Air Quality Significance Thresholds 50
3.3-2 Estimated Maximum Daily Construction Criteria Air Pollutant Emissions 54
3.3-3 Estimated Maximum Daily Operation Criteria Air Pollutant Emissions 56
3.3-4 Localized Significance Thresholds Analysis for the Project 58
3.6-1 Project Construction Petroleum Demand 76
3.6-2 Annual Electricity Demand 77
3.6-3 Annual Operational Petroleum Demand 79
3.8-1 Estimated Annual Construction GHG Emissions 90
3.8-2 Estimated Annual Operational GHG Emissions 91
3.13-1 Measured Existing Outdoor Ambient Sound Levels on March 15, 2022 117
3.17-1 Peak Phase Construction Trip Generation 134

INTENTIONALLY LEFT BLANK

ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
AB	Assembly Bill
AOP	advanced oxidation process
AQMP	Air Quality Management Plan
bgs	below ground surface
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CH_4	methane
CHRIS	California Historical Resources Information System
CNDDB	California Natural Diversity Database
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CRHR	California Register of Historical Resources
CRMMP	cultural resources monitoring and mitigation plan
dB	decibel
dBA	A-weighted decibel
DDW	Division of Drinking Water
EO	Executive Order
EPA	U.S. Environmental Protection Agency
FHWA	Federal Highway Administration
GHG	greenhouse gas
GIS	geographic information systems
gpm	gallons per minute
GWP	global warming potential
HFC	hydrofluorocarbon
in/sec	inches per second
IS	initial study
IS/MND	initial study/mitigated negative declaration
kWh	kilowatt-hours
L_{90}	sound pressure level exceeded 90% of the measured time period
LACM	Natural History Museum of Los Angeles County
LADOT	Los Angeles Department of Transportation

Acronym/Abbreviation	Definition
LADWP	Los Angeles Department of Water and Power
LAMC	Los Angeles Municipal Code
LARW	Low-Activity Radioactive Waste
LASAN	City of Los Angeles Bureau of Sanitation
L_{eq}	energy-equivalent continuous sound level
LLRW	Low-Level Radioactive Waste
L_{max}	maximum sound level during the measurement interval
LPGAC	liquid-phase granular activated carbon
LST	localized significance threshold
MND	mitigated negative declaration
MT	metric ton
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NF_3	nitrogen trifluoride
NHC	North Hollywood Central
NHOU	North Hollywood Operable Unit
NHOU2IR	North Hollywood Operable Unit Second Interim Remedy
NHPS	North Hollywood Pump Station
NHW	North Hollywood West
NO_x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NSR	noise-sensitive receptor
OSHG	on-site hypochlorite generation
PFC	perfluorocarbon
ppd	pounds per day
ppv	peak particle velocity
RCNM	Roadway Construction Noise Model
RT	Rinaldi-Toluca
RTP	Regional Transportation Plan
SB	Senate Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SF_6	sulfur hexafluoride
SFB	San Fernando Groundwater Basin

Acronym/Abbreviation	Definition
SLTRP	Strategic Long-Term Resource Plan
SR	State Route
SRA	Source-Receptor Area
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TENORM	technologically enhanced naturally occurring radioactive material
UAIZ	Urban Agriculture Incentive Zone
ULARA	Upper Los Angeles River Area
UV	ultraviolet
VHFHSZ	very high fire hazard severity zone
VMT	vehicle miles traveled
VOC	volatile organic compound
VP	vertebrate paleontology
WBA	weak base anion

INTENTIONALLY LEFT BLANK

1 INTRODUCTION

1.1 Overview of the Project

The Los Angeles Department of Water and Power (LADWP) proposes to expand the treatment capacity of its existing Rinaldi-Toluca (RT) and North Hollywood West (NHW) Chlorination Stations, and to replace its existing North Hollywood Chlorination Station with the new North Hollywood Central (NHC) Chlorination Station. LADWP also proposes to assume operation of a groundwater remediation facility related to the North Hollywood Operable Unit (NHOU) Second Interim Remedy (NHOU2IR), which is currently being constructed by Honeywell International Inc. on the same property as the RT Chlorination Station pursuant to orders issued by the U.S. Environmental Protection Agency (EPA) under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). LADWP would direct treated water from the NHOU2IR facility to the expanded RT Chlorination Station, where the water would be disinfected. This initial study (IS)/mitigated negative declaration (MND) for the North Hollywood Chlorination Stations and NHOU2IR West Treatment Project (referred to herein as the Proposed Project) addresses the construction of the three chlorination stations, the operations of the chlorination stations, and LADWP's use of the NHOU2IR facility to supply treated drinking water. The construction of the NHOU2IR facility is being completed under orders from EPA and does not require discretionary action by LADWP or any other state or local agency and is not a component of the Proposed Project. The Proposed Project would provide the capability to safely and effectively disinfect water pumped from the RT Well Field, the NHW Well Field, and the western portion of the NHOU, all of which would be operated in a manner consistent with LADWP's historical use of its well fields to help meet current and projected demand for drinking water in the City of Los Angeles (the City). This disinfection capability would help ensure the reliability and sustainability of the City's drinking water system by reducing dependence on imported water supplies, consistent with goals established in the 2020 LADWP Urban Water Management Plan. The water disinfected at the chlorination stations would feed into the existing sump and forebay located at the LADWP North Hollywood Pump Station (NHPS) property. From the NHPS forebay, drinking water enters the LADWP water distribution system directly or after passing through the NHPS, providing supplies to large portions of the City. The construction of the chlorination stations, including a testing and commissioning period at each station, is preliminarily scheduled to begin in the latter part of 2023 and be completed in the first quarter of 2026. The initial phase of the NHOU2IR facility is anticipated to begin operation in 2023, and full operation of the facility is anticipated to begin in 2024.

1.2 California Environmental Quality Act and Scope of IS/MND

The California Environmental Quality Act (CEQA; California Public Resources Code Section 21000 et seq.) applies to proposed projects initiated by, funded by, and/or requiring discretionary approvals from state or local government agencies. The construction and operation of the new and expanded chlorination stations and the use of water treated at the NHOU2IR facility for municipal drinking water constitute a project as defined by CEQA (California Public Resources Code Section 21065). Section 15367 of the CEQA Guidelines (14 CCR 15000–15387) states that a CEQA lead agency is "the public agency which has the principal responsibility for carrying out or approving a project." Therefore, as the agency responsible for approving and implementing the Proposed Project, LADWP is the lead agency responsible for compliance with CEQA.

As the CEQA lead agency, LADWP must complete an environmental review to determine if implementation of the Proposed Project may result in significant adverse environmental impacts and to propose measures, as feasible, to reduce or eliminate any such identified impacts. LADWP has prepared a CEQA IS to assist in making this determination. Based on the nature and scope of the Proposed Project and the evaluation contained in the IS environmental checklist (included in Chapter 3 of this IS/MND), LADWP, as the lead agency, has concluded that an MND is the proper level of CEQA environmental documentation for the Proposed Project. The IS shows that impacts caused by the Proposed Project either would be less than significant or would be reduced to a less-than-significant level with the incorporation of appropriate mitigation measures, as included herein. This conclusion is supported by CEQA Guidelines Section 15070, which states that an MND can be prepared when:

> …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.

Although located at different sites, the construction and operation of the three chlorination stations analyzed in this IS/MND is considered a single project because the stations are relatively close to each other, their implementation schedules are concurrent, and, as discussed further below, they would work in conjunction with each other to provide disinfected and treated drinking water to the sump at the NHPS property. Because the NHOU2IR facility is being constructed pursuant to orders from the EPA, no state or local agency has discretionary authority related to this action; therefore, the construction is not a project subject to CEQA. Similarly, operation of the NHOU2IR facility is a federally mandated, non-discretionary EPA cleanup requirement. However, the treatment of groundwater from the NHOU2IR facility for use as drinking water could be considered a discretionary action subject to CEQA. The findings regarding the NHOU2IR facility in this IS/MND are extremely conservative because they include, for information, emissions associated with operation of the NHOU2IR treatment facilities (which would occur with or without the Proposed Project). Further, the serving of such water is subject to LADWP seeking approval from the California State Water Resources Control Board (SWRCB) Division of Drinking Water (DDW). The IS/MND will be used by DDW, as a CEQA responsible agency, to evaluate issuance of any amendment to an existing drinking water permit or issuance of new drinking water permits for the NHW Chlorination Station, RT Chlorination Station, NHC Chlorination Station, and the NHOU2IR to LADWP.

1.3 Existing Setting

The sites for the Proposed Project facilities (Project Sites) are located in the southeast San Fernando Valley within the highly urbanized North Hollywood community of Los Angeles (Figure 1, Project Location).

1.3.1 NHW Chlorination Station

The existing NHW Chlorination Station, which would be modified to expand its capacity under the Proposed Project, is located within the approximately 4.5-acre LADWP NHW Well Field property, the entrance for which is at 12403 Vanowen Street (Figure 2, North Hollywood West Property). In addition to the well heads, the well field property includes the recently constructed NHW Wellhead groundwater treatment facility, which will remove chemical contaminants from the groundwater pumped at certain wells in the well field. The treatment facility occupies approximately 2.5 acres in the northern part of the property. The existing chlorination station, which has been in service since 2014, is an approximately 2,000-square-foot building located in the southern end of the property, near the Vanowen Street entrance. The well field property directly abuts the Hollywood Freeway (State Route [SR] 170) to the east and the Valley Plaza Sports Complex playing fields to the west and north. Development in the vicinity of the NHW Well Field consists predominantly of medium-density multi-family residential uses and low-density single-family residential uses, with some community commercial uses located at major intersections. The well field property itself has a general plan land use designation of Open Space and is zoned OS-1XL (Open Space) (City of Los Angeles n.d.).

1.3.2 RT Chlorination Station and NHOU2IR Groundwater Treatment Facility

The existing RT Chlorination Station, which would also be modified to expand its capacity under the Proposed Project, is located within the approximately 1.75-acre LADWP Lankershim Yard property, at 11845 Vose Street (Figure 3, Rinaldi-Toluca [Lankershim Yard] Property). The NHOU2IR groundwater treatment facility is currently under construction at Lankershim Yard, under orders issued by the EPA. The treatment facility would remove chemical contaminants from the groundwater pumped at extraction wells located in the western portion of the NHOU, in the general area of LADWP’s former North Hollywood East Well Field, which has been inactivated due to contamination of the groundwater aquifer. When completed, the treatment facility would occupy approximately 1 acre within Lankershim Yard, primarily along the east side of the property. The existing chlorination station, which has been in service since 2014, is an approximately 2,000-square-foot building located on the west-central side of the property. Lankershim Yard is immediately surrounded by light industrial uses. The broader vicinity consists of light industrial uses to the west, north, and east, and medium-density multi-family residential uses to the south. Lankershim Yard itself has a general plan land use designation of Light Manufacturing and is zoned M2-1VL (Light Industrial Zone) (City of Los Angeles n.d.).

1.3.3 NHC Chlorination Station

The site for the replacement NHC Chlorination Station is on the approximately 3.75-acre NHPS property, which is located at 11805 Vanowen Street (Figure 4, North Hollywood Central Property). The NHPS property occupies the entire block encompassed by Vanowen Street on the south, Hinds Avenue on the west, Dehougne Street on the north, and Morella Avenue on the east. A pump station and associated facilities have been located on the property since the 1930s, but the facilities were rebuilt in the early 1990s. The pump station facilities currently occupy approximately 1.7 acres in the southern half of the property, and consist of the pump station building (which also contains five hydroelectric generation units), the sump and forebay, the existing North Hollywood Chlorination Station, and other support functions. The NHC groundwater treatment facility is currently under construction on the property. The treatment facility will remove chemical contaminants from the groundwater pumped at certain wells in the RT Well Field. The facilities will occupy approximately 1.7 acres in the central part of the property.

The proposed replacement NHC Chlorination Station would occupy approximately 0.35 acres along Dehougne Street at the northern end of the property. The address for the station would be 6859 Morella Avenue, where the main entrance would be located. The parcel on the southeast corner of Dehougne Street and Hinds Avenue is currently occupied by temporary trailers for administrative functions supporting the construction of the NHC groundwater treatment facility. The trailers will vacate the site prior to the start of construction for the replacement NHC Chlorination Station in the latter part of 2023.

The NHPS property includes several general plan land use and zoning designations. The parcels fronting Vanowen Street, where the pump station, hydroelectric generation units, and the existing chlorination station are located, have a land use designation of Public Facilities and are zoned R3-1 (Multiple Dwelling Zone). The parcels at the north end of the property, where the proposed replacement chlorination station and a portion of the NHC treatment facility would be located, have a land use designation of Low Medium II Residential and are zoned RD1.5-1 (Restricted Density Multiple Dwelling Zone). The balance of the NHPS property, located between Hinds Avenue and Morella Avenue, where the NHPS sump and forebay are currently located and where the majority of the NHC treatment facility will be located, has a land use designation of Public Facilities and is zoned PF-1XL (Public Facilities) (City of Los Angeles n.d.).

Uses immediately adjacent to the NHPS property (along Vanowen Street, Hinds Avenue, Dehougne Street, and Morella Avenue) consist primarily of multi-family residential units. An LADWP-owned parcel on the northeast corner of Vanowen Street and Morella Avenue, across from the NHPS at 11759 Vanowen Street, is free of any permanent structures and is currently being used as a laydown and construction support area for the NHC groundwater treatment facility construction. The broader surrounding area also consists primarily of multi-family residences, with light industrial and community commercial and service functions farther to the north and east of NHPS and single-family residential uses farther to the south.

1.4 Project Background and Purpose

The EPA's 2006 Ground Water Rule (71 FR 65573–65660) requires public water systems that use groundwater as a direct source of drinking water to employ disinfection treatment technologies that achieve a 4-log (99.99%) inactivation or removal of viruses. A 4-log virus inactivation can be achieved through the injection of chlorine into the water at designated locations in the distribution system. When chlorine is added to water, it first reacts with inorganic and organic materials present in the water; as a result, the chlorine is not initially available for disinfection. This is termed the "chlorine demand" of the water. "Contact time" is a measurement of the length of time it takes for a given concentration of the free chlorine remaining after demand is met to achieve 4-log inactivation. "Chlorine residual" is the amount of chlorine remaining after the demand and contact time requirements have been achieved. This chlorine residual, when combined with ammonia to form chloramines, is important to provide continued disinfection of the drinking water as it is transmitted through pipelines to customers.

Chlorine for water treatment is available in several forms but can be produced at the point of use, rather than imported as a pre-manufactured product, by combining salt and water to form a brine solution that chemically reacts when exposed to an electrical charge to create a solution of sodium hypochlorite, a chlorine compound that can then be injected into the water to provide disinfection. Such a point-of-use system is known as on-site hypochlorite generation (OSHG).

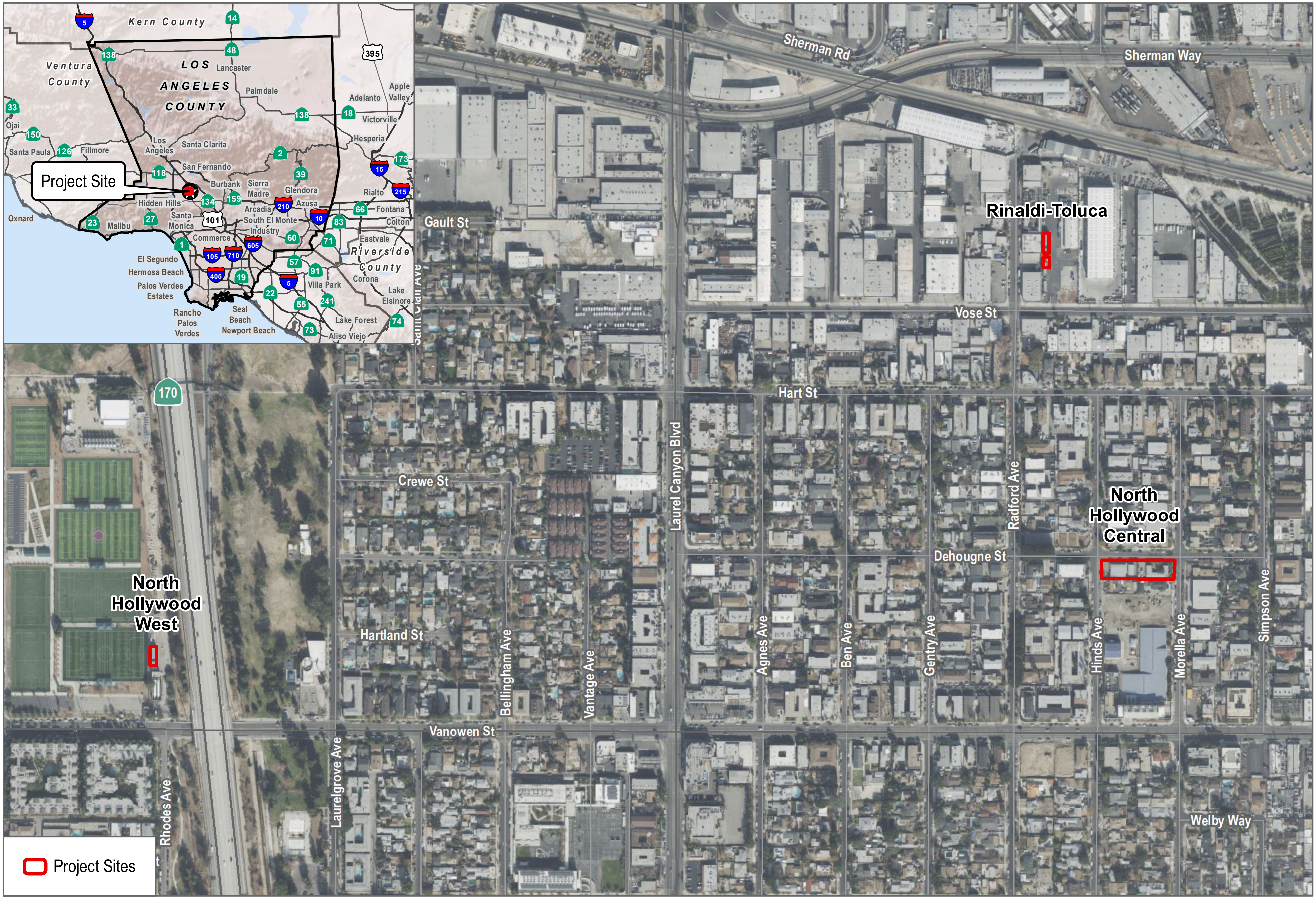
The existing NHW and RT Chlorination Stations are OSHG systems that provide for primary disinfection in compliance with the Ground Water Rule and achieve the desired chlorine residual prior to the addition of ammonia to the water at the NHPS property to form chloramines. The existing North Hollywood Chlorination Station, which first entered service in the early 1990s, uses gaseous chlorine that is delivered to the station in canisters. However, the existing station has not been in operation for several years due to safety concerns related to the transport and handling of gaseous chlorine. These safety concerns have been alleviated by the OSHG systems at the NHW and RT Chlorination Stations, which currently provide the disinfection for water delivered to the NHPS property without the need to operate the existing North Hollywood Chlorination Station. The NHW Chlorination Station has the capacity to provide for demand, contact time required to achieve 4-log virus inactivation, and chlorine residual for a flow of approximately 30 to 35 cubic feet per second (cfs) of water. The RT Chlorination Station has the capacity to provide for demand, contact time, and chlorine residual for a flow of up to approximately 50 cfs.

However, the NHW Well Field, NHC, and NHOU2IR groundwater treatment facility will restore well pumping capacity that has been curtailed by the past, temporary inactivation of contaminated wells. This restored capacity is consistent with LADWP's historical use and the City's water rights. Therefore, additional chlorination capacity is required at the existing NHW and RT Chlorination Stations, and the capacity of the existing gaseous chlorine North Hollywood Chlorination Station must be replaced and expanded to provide disinfection to enable the restored operation of the well fields. This would help ensure the operational flexibility, reliability, and resilience of the City's drinking water system and increase the sustainability of the system by reducing dependence on imported water supplies.

References

71 FR 65573–65660. Final Rule; *National Primary Drinking Water Regulations: Ground Water Rule*. November 8, 2006.

City of Los Angeles. n.d. Zoning Information and Map Access System (ZIMAS). City of Los Angeles, Department of Planning. Accessed March 2022. zimas.lacity.org.



SOURCE: Bing Imagery 2021

Los Angeles Department of Water & Power

FIGURE 1

Project Location

LADWP Chlorination Stations MND

INTENTIONALLY LEFT BLANK

SOURCE: Bing Imagery 2021

LA DWP Los Angeles Department of Water & Power

FIGURE 2

North Hollywood West Property

LADWP Chlorination Stations MND

INTENTIONALLY LEFT BLANK

SOURCE: Bing Imagery 2021

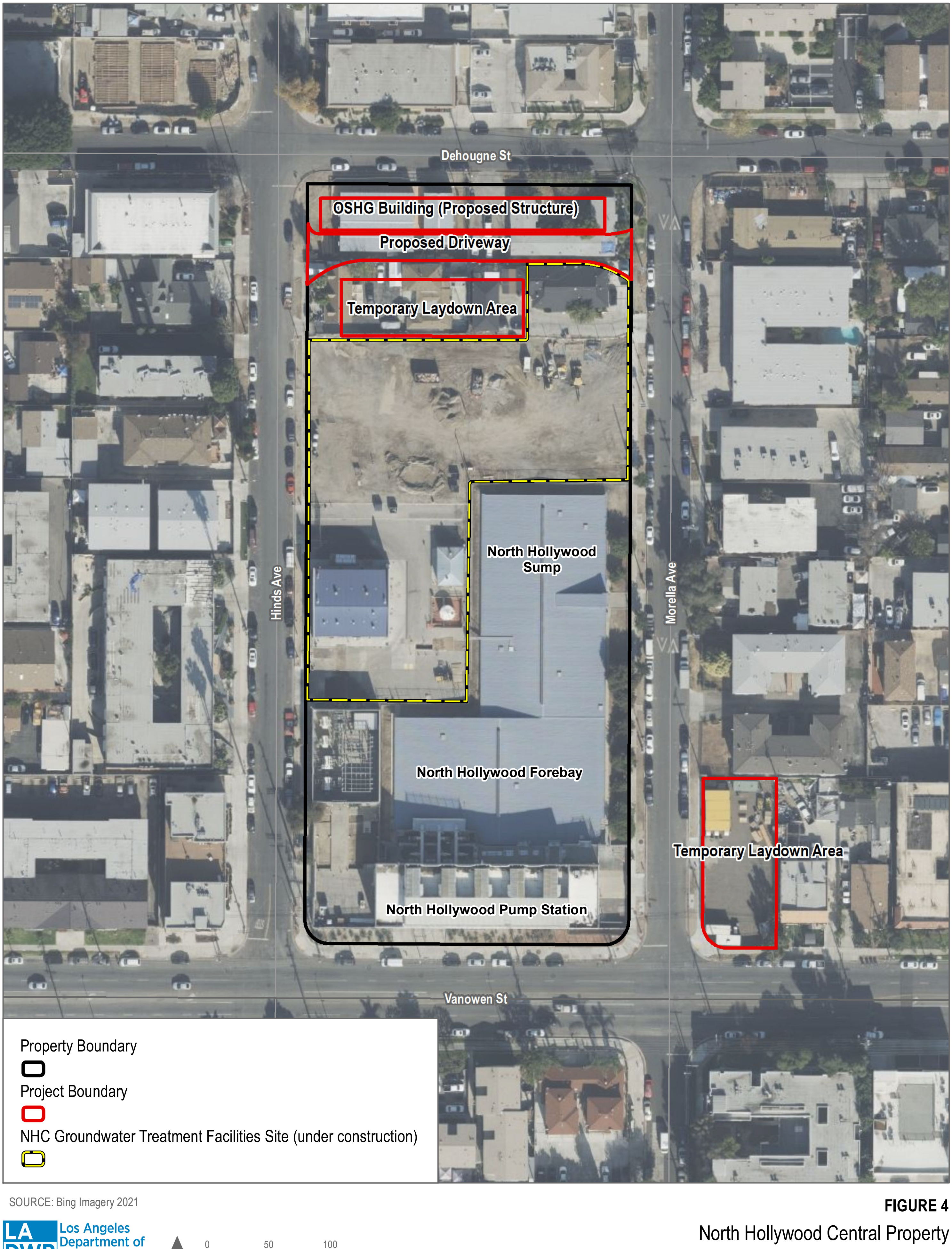
LA DWP Los Angeles Department of Water & Power

0 50 100 Feet

FIGURE 3

Rinaldi-Toluca (Lankershim Yard) Property

INTENTIONALLY LEFT BLANK



SOURCE: Bing Imagery 2021

Los Angeles Department of Water & Power

FIGURE 4

North Hollywood Central Property

LADWP Chlorination Stations MND

INTENTIONALLY LEFT BLANK

2 PROJECT DESCRIPTION

2.1 Proposed Chlorination Station Capacities

The capacities of the expanded NHW and RT Chlorination Stations and the replacement NHC Chlorination Station were established based on the combined flow rates of the wells that would feed each chlorination station. Historical data shows the NHW Well Field can provide a flow of approximately 62 cfs from both untreated and treated wells, all of which would be routed to the existing NHW Chlorination Station chlorine injection point and then to the NHPS sump. Historical data shows the RT Well Field can provide a flow of approximately 117 cfs. This includes approximately 79 cfs from untreated RT wells. Upon completion of the NHC groundwater treatment facility currently under construction at the NHPS property, there would be approximately 38 cfs from treated wells. The flow from the untreated RT wells would be routed to the existing RT Chlorination Station chlorine injection point and then to the NHPS sump. The flow from the treated RT wells would be injected with chlorine from the replacement NHC Chlorination Station and then routed to the NHPS sump. The NHOU2IR treatment facility currently under construction at Lankershim Yard would provide a flow of approximately 12 cfs, which would be routed to a new chlorine injection point supplied from the RT Chlorination Station and then to the NHPS sump. In addition, it is anticipated that approximately 9 cfs may also be provided to Lankershim Yard and the RT Chlorination Station in the future from other LADWP well fields in the vicinity.

Based on the above flow requirements at the various well fields and the need, for safety reasons, to replace the existing gaseous chlorine North Hollywood Chlorination Station with an OSHG system, the capacity of the NHW and RT Chlorination Stations would be expanded. The expanded stations would provide for chlorine demand and contact time only, and the chlorine residual dosing for water flowing from the NHW and RT stations would be provided from the replacement NHC Chlorination Station at the NHPS property. Shifting the chlorine residual dosing to the replacement NHC Chlorination Station would limit the extent of modifications required at the NHW and RT Chlorination Stations to accommodate the projected flows, thereby avoiding major reconstruction of the facilities. Therefore, the existing NHW Chlorination Station would be expanded to provide for demand and contact time for approximately 62 cfs of untreated and treated groundwater flows from the NHW Well Field. The existing RT Chlorination Station would be expanded to provide for demand and contact time for approximately 79 cfs of untreated groundwater flows from the RT Well Field, 12 cfs of treated groundwater flow from the NHOU2IR treatment facility, and 9 cfs of future flow from other wells (a total of approximately 100 cfs). The replacement NHC Chlorination Station would provide for chlorine demand, contact time, and chlorine residual for approximately 38 cfs of treated groundwater flows from the RT Well Field and chlorine residual for approximately 162 cfs from the NHW and RT Chlorination Stations. The volume of flow and the type of treatment that would be provided at each chlorination station for the various well fields is shown in Table 2-1.

Table 2-1. Capacities at Proposed Chlorination Stations

Well Field	Flow (cfs)	Chlorine Demand	Contact Time	Chlorine Residual
NHW Well Field treated and untreated	62	NHW CS	NHW CS	NHC CS
RT Well Field treated	38	NHC CS	NHC CS	NHC CS
RT Well Field untreated	79	RT CS	RT CS	NHC CS
NHOU2IR treated	12	RT CS	RT CS	NHC CS
Future	9	RT CS	RT CS	NHC CS

Notes: cfs = cubic feet per second; NHW = North Hollywood West; RT = Rinaldi-Toluca; NHOU2IR = North Hollywood Operable Unit Second Interim Remedy; CS = Chlorination Station.

2.2 OSHG Systems

As discussed in Section 1.4, Project Background and Purpose, an OSHG system uses salt (sodium chloride), water, and electricity to create a sodium hypochlorite solution that is then injected into drinking water to provide disinfection. In an OSHG system, such as at the existing NHW and RT Chlorination Stations as well as the proposed replacement NHC Chlorination Station, a brine solution is created by adding salt to a tank of water. The brine is then passed through an electrolytic cell (the OSHG) in which a direct electrical current induces a chemical reaction to create a dilute sodium hypochlorite solution of 0.8% concentration in water. The sodium hypochlorite solution is then passed into storage tanks from which it is injected into the well water collector lines.

At this very low concentration, the sodium hypochlorite solution from the OSHG is an unregulated non-hazardous substance. It is also chemically very stable, reducing issues of degradation that are common with other forms of higher-concentration chlorine used in drinking water disinfection processes. It therefore provides a predictable supply of free available chlorine for primary disinfection and chlorine residual dosing. Because the production process occurs on site and is not dependent on the delivery and storage of bulk hypochlorite or chlorine gas (the most common chlorine alternatives to OSHG), the volume of the sodium hypochlorite required can be closely controlled in real time based on demand, increasing system efficiency and further reducing potential degradation. In addition, since only inert food-grade salt and potable water in the presence of an electrical charge are required to generate the dilute sodium hypochlorite solution, OSHG systems avoid the transport, handling, and storage of hazardous materials associated with other chlorination methods.

2.3 Proposed Chlorination Station Components

2.3.1 NHW Chlorination Station

The existing NHW Chlorination Station's OSHG system has a capacity to produce 800 pounds per day (ppd) of chlorine equivalent in the form of 0.8% sodium hypochlorite solution. In addition to the OSHG unit itself, the existing station includes one brine tank, two sodium hypochlorite tanks, and appurtenant equipment such as piping, water softener, a chemical dosing system, and instrumentation. All these systems and equipment are housed within the existing 2,000-square-foot chlorination station building on the NHW Well Field property. Under the Proposed Project, the NHW OSHG system would be upgraded to produce 1,200 ppd of chlorine equivalent, which would require replacing the existing OSHG unit and upgrading the metering pumps and power supply. This upgrade would also involve modifications to the existing monitoring and control systems to allow for both on-site and remote operation of the OSHG. In addition, the station building would be retrofitted to comply with current seismic codes. The existing brine and sodium hypochlorite tanks are adequately sized to accommodate the upgrade to a 1,200 ppd OSHG. All these modifications would be accommodated within the existing chlorination station building. The existing chlorine injection point in Vanowen Street, south of the station, would require no modifications.

2.3.2 RT Chlorination Station

The existing RT Chlorination Station's OSHG system also has a capacity to produce 800 ppd of chlorine equivalent in the form of 0.8% sodium hypochlorite solution. In addition to the OSHG unit itself, the existing station includes one brine tank, two sodium hypochlorite tanks, and appurtenant equipment such as piping, water softener, a chemical dosing system, and instrumentation. All these systems and equipment are housed within the existing 2,000-square-foot chlorination station building on the Lankershim Yard property. Under the Proposed Project, the RT OSHG system would be upgraded to produce 2,000 ppd of chlorine equivalent, which would require replacing the existing OSHG unit and upgrading the metering pumps and power supply. The existing brine tank housed in the chlorination station building would be converted to a sodium hypochlorite tank, and two new 10,000-gallon brine tanks would be installed. This upgrade would also require new pipe connections and would involve modifications to the existing monitoring and control systems to allow for both on-site and remote operation of the OSHG. In addition, the station building would be retrofitted to comply with current seismic codes. The water from the untreated RT wells would be injected with chlorine from the upgraded chlorination station at the existing chlorine injection point in Lankershim Yard, east of the station. No modifications to this injection point would be required. The water from the NHOU2IR treatment facility would be injected with chlorine at a new injection point in Lankershim Yard on the 24-inch collector line that is being installed under the NHOU2IR.

2.3.3 NHC Chlorination Station

The replacement NHC Chlorination Station would include two 2,000 ppd OSHG units, two 10,000-gallon brine tanks, and five 13,000-gallon sodium hypochlorite tanks. The facility would also include water softening equipment and all necessary plumbing, electrical, and monitoring and control systems. These components would require an approximately 6,000-square-foot single-story building. Site improvements would include truck access, security fencing, and perimeter landscaping.

2.4 Project Construction

As currently planned, the construction of the chlorination stations would begin in the latter part of 2023 and be complete in early 2026. This would include a testing and commissioning period at each station ranging from 4 to 6 months. However, the specific construction activities and schedules would vary at each station, depending on the scope of the work and the required in-service dates.

Construction activities would typically occur Monday through Friday during daytime hours, beginning no earlier than 7:00 a.m. and generally ending by 5:00 p.m. Personnel may arrive on site prior to 7:00 a.m. to conduct safety meetings and other pre-construction activities, but no noise-generating construction activities would occur before 7:00 a.m. Likewise, personnel may remain on site after 5:00 p.m. to conduct closeout activities, but noise-generating construction activities would generally not occur after 5:00 p.m., except under unusual circumstances. Construction on Saturdays may also occasionally be necessary but is generally not anticipated. On Saturdays, noise-generating construction activities would not begin before 8:00 a.m. and would normally end by 5:00 p.m. No construction work would occur on Sundays or federal holidays, except under emergency conditions.

Temporary trailers for construction management activities and temporary laydown areas and storage facilities for construction materials and equipment would be required. All required administrative, staging, storage, and laydown areas related to Proposed Project construction would be located within the respective LADWP properties for each chlorination station.

2.4.1 NHW Chlorination Station Modifications

The primary component of the facility upgrade for the NHW Chlorination Station is the replacement of the existing OSHG unit, which is housed within the structure (Figure 5, North Hollywood West Chlorination Station). This upgrade will not require any expansion of the existing NHW Chlorination Station structure or any additional permanent facilities outside the structure. Excluding mobilization activities that would precede actual construction, work at the site would begin in the last quarter of 2023 with the installation of a temporary OSHG system that would provide for disinfection of the well field water during the upgrade of the existing chlorination station. The temporary system, which would be housed in a trailer adjacent to the existing chlorination station on the NHW Well Field property, would take approximately 12 months to complete, including equipment installation, connections to the water system, and testing and commissioning. After the temporary system is operational, work on the existing facility upgrade would take approximately 10 months to complete. This would be followed by an approximately 5-month testing and commissioning period, with a projected in-service date at the end of 2025.

Equipment necessary to support construction would consist primarily of a forklift. However, a 20-ton crane would be used during a 3-month period for the installation of the temporary OSHG system, and a backhoe would be required for approximately 3 months during the existing facility upgrade. The number of daily construction personnel would reach a peak of 10 for several months during the existing facility upgrade. A limited number of truck trips to deliver materials and supplies would be required on a daily basis. All construction activities, including staging, storage, laydown, and worker parking, would be confined to the NHW Well Field property.

2.4.2 RT Chlorination Station Upgrade Construction

The replacement of the existing OSHG unit at the RT Chlorination Station and the conversion of the existing brine tank to a sodium hypochlorite tank would occur within the existing structure. However, because additional brine storage capacity would be required, two new 8,050-gallon brine tanks would be installed within a new approximately 1,000-square-foot metal clad structure adjacent to and south of the existing chlorination station on the Lankershim Yard property (Figure 6, Rinaldi-Toluca Chlorination Station). The larger OSHG unit would need upgraded electrical service, which would require the installation of new underground conduits from the electrical service equipment in the southeast corner of Lankershim Yard. New chlorination injection equipment in an underground vault at the NHOU2IR 24-inch well collector line would also be installed beneath the pavement east of the chlorination station.

Excluding mobilization activities that would precede actual construction, work at the site would begin in the early part of 2024 with the installation of a temporary OSHG system, which would be housed in a trailer adjacent to the existing chlorination station in Lankershim Yard. The installation of the temporary system would take approximately 8 months to complete, including equipment installation, connections to the water system, and testing and commissioning. After the temporary system is operational, work on the existing facility upgrade would take approximately 10 months to complete. This would be followed by an approximately 6-month testing and commissioning period, with a projected in-service date in early 2026.

Equipment necessary to support construction would consist primarily of a forklift. However, a 20-ton crane would be used during a 3-month period for the installation of the temporary OSHG system, and a backhoe and concrete pump truck would be required for several months during the existing facility upgrade. These pieces of equipment would serve specialized purposes during the construction process and would generally only be operated for limited periods when required for specific tasks. Therefore, individual pieces of equipment would not operate continuously during the day and generally would not operate simultaneously. The number of daily construction personnel would reach a peak of 14 during the upgrade of the existing facility. A limited number of truck trips to deliver materials and supplies would be required on daily basis. This would include dump trucks to haul excavated material from the site to local landfills and deliver backfill material to provide a solid foundation beneath the proposed brine tank facility. This task would involve the excavation of approximately 250 cubic yards of material and the importation of a like amount of structural backfill. All construction activities, including staging, storage, laydown, and worker parking, would be confined to the Lankershim Yard property.

2.4.3 NHC Chlorination Station Construction

The replacement NHC Chlorination Station would be a single-story concrete building with poured-in-place walls, fronting Dehougne Street, at the north end of the NHPS property. The building would be approximately 230 feet long, 26 feet wide, and 30 feet tall. It would include separate rooms for the brine tanks, the sodium hypochlorite tanks and the OSHG unit, the water softener system, the control equipment, and the electrical equipment (Figure 7, North Hollywood Central Chlorination Station). An approximately 20-foot-wide concrete driveway would be constructed behind the building with entrances from Morella Avenue and Hinds Avenue to provide truck access during operations. An emergency generator on a concrete pad would be located adjacent to the building along Morella Avenue. The perimeter around the building along Hinds Avenue, Dehougne Street, and Morella Avenue would be landscaped, and a security fence and a new sidewalk would be installed.

Construction activities that would involve most of the truck delivery trips and heavy equipment operations would take approximately 10 months, preliminarily from the third quarter of 2023 to mid-2024. Work on the chlorination station would continue until mid-2025 to finalize the mechanical, electrical, and communications systems as well as site improvements. Following this final construction stage, an approximately 4-month testing and commissioning period would take place, with a projected in-service date in mid-2025. Most construction activities, including staging, storage, and laydown, would be accommodated within the NHPS property. This includes the LADWP-owned parcel on the northeast corner of Vanowen Street and Morella Avenue. However, it may be necessary to operate some equipment from adjacent streets during certain activities, which may entail brief lane closures. Parking along Hinds Avenue, Dehougne Street, and Morella Avenue on the side of the street adjacent to the facility would also be restricted during construction. The sidewalk adjacent to the facility on the south side of Dehougne Street, the east side of Hinds Avenue, and the west side of Morella Avenue would also be closed throughout construction. Construction worker parking would be accommodated on the property or at off-site parking locations, as necessary.

The construction of the chlorination station would entail several tasks, including over-excavation, shoring, backfilling, and compaction of the site; installation of under-slab utilities; construction of foundations and structures; installation of equipment, including the sodium hypochlorite and brine tanks, the OSGH unit, and associated plumbing, electrical, communications, and metering systems; and site improvements, including the access driveway, landscaping, fencing, and sidewalk.

Various pieces of equipment would be required during the construction process, including an excavator, a front-end loader, a compaction roller, a 20-ton truck crane and a 50-ton truck crane, a backhoe, a concrete pump truck, a skid steer, and a forklift. These pieces of equipment would serve specialized purposes during the construction process and would generally be operated only for limited periods when required for specific tasks. Therefore, individual pieces of equipment would not operate continuously during the day, nor would all pieces of equipment operate simultaneously.

Trucks would be required to transport material to and from the site during the construction period. This would include dump trucks to haul excavated material from the site to local landfills and deliver backfill material to provide a solid foundation beneath the proposed facilities. This task would involve the excavation of approximately 2,500 cubic yards of material and the importation of a lesser amount of structural backfill due to the space taken up by the foundation and other below-grade structures. This would require an average of approximately seven truck trips per day over a 2-month period. During the remainder of facility construction, the estimated average daily number of daily truck trips to and from the site would range from one to three. This would include flatbed trucks to deliver large and/or heavier loads, tractor-trailers or box trucks to deliver smaller loads, and concrete trucks. The estimated average daily number of on-site workers is anticipated to peak at approximately 20 for a 1-month period during construction. All construction-related activities, including staging, storage, laydown, and worker parking, would be confined to the NHPS property, including a temporary laydown area located to the south of the proposed chlorination station site.

The projected average daily numbers of on-site personnel and equipment and off-site truck trips for each month of Proposed Project construction at the chlorination stations are indicated in Table 2-2.

Table 2-2. Chlorination Stations Construction Equipment, Truck Roundtrips, and Personnel

	2023						2024												2025												2026		
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
North Hollywood Central Chlorination Station																																	
Equipment	0	0	7	9	9	7	8	6	6	6	6	7	2	4	2	2	2	2	2	2	2	2	1	1	1	1							
Truck Trips	1	1	8	10	3	3	2	2	2	2	2	3	1	1	1	1	1	1	0	0	0	0	0	0	0	0							
Personnel	1	2	7	12	12	17	17	17	17	12	12	17	12	12	20	17	7	7	2	2	2	2	2	2	2	2							
North Hollywood West Chlorination Station																																	
Equipment		0	0	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	2	1	2	1	1	1	1	1	1			
Truck Trips		0	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0			
Personnel		1	2	7	7	7	7	7	7	7	7	7	7	7	7	9	9	9	9	10	10	10	9	9	5	2	2	2	2	2			
Rinaldi-Toluca Chlorination Station																																	
Equipment							0	0	2	2	2	1	1	1	1	1	5	4	4	4	3	3	3	1	1	1	1	1	1	1	1	1	1
Truck Trips							0	0	1	1	1	1	1	0	0	0	4	4	2	2	3	3	2	1	1	1	0	0	0	0	0	0	0
Personnel							1	2	7	7	7	7	7	7	7	7	11	11	9	9	9	12	14	9	9	9	2	2	2	2	2	2	2
Consolidated Chlorination Stations Construction Equipment, Truck Roundtrips, and Personnel																																	
Equipment	0	0	7	11	11	9	9	7	9	9	9	9	4	4	4	4	8	7	7	9	8	7	5	4	3	3	2	2	2	2	1	1	1
Truck Trips	1	1	9	11	4	4	3	3	4	4	4	5	2	1	1	2	6	6	3	3	4	4	3	2	2	1	0	0	0	0	0	0	0
Personnel	1	3	9	19	19	24	25	26	31	26	26	31	26	26	34	33	27	27	20	21	21	24	25	20	16	13	4	4	4	4	2	2	2

2.5 Project Operation

2.5.1 NHW Chlorination Station Operation

Future operation of the NHW Chlorination Station would remain essentially the same as the existing operation. As is currently the case, the station would not be permanently staffed, but may be visited daily to monitor operations and conduct routine inspections, maintenance, and repairs as required. No additional LADWP personnel beyond current operations would be necessary. All systems would also be monitored remotely. The station would be operational 24 hours a day, 7 days a week, but would only operate on an as-needed basis to provide for chlorine demand and contact time, depending on the flow of water at a given time from the NHW wells. Increased salt supplies would be required to accommodate the increased production capacity of the OSHG. However, this would not change the number of truck deliveries to the station, which would remain at about one every 2 weeks. Additional supplies of potable water would also be required to provide for increased rate of use of brine solution. However, all potable water feeding the OSHG system would be returned to the potable water system with minimal loss of volume at the NHW well collector line chlorine injection point. Increased electrical energy would be required to operate the larger OSHG and associated systems. It is estimated that approximately 3,000 kilowatt-hours (kWh) per day would be consumed to run the station at maximum capacity (1,200 ppd), compared to the existing maximum load of approximately 2,515 kWh per day (800 ppd). The same periodic maintenance and replacement of the facility components would occur after Project implementation as before.

2.5.2 RT Chlorination Station Operation

Future operation of the RT Chlorination Station would remain essentially the same as the existing operation. As is currently the case, the station would not be permanently staffed, but may be visited daily to monitor operations and conduct routine inspections, maintenance, and repairs as required. No additional LADWP personnel beyond current operations would be necessary. All systems would also be monitored remotely. The station would be operational 24 hours a day, 7 days a week, but would only operate on an as-needed basis to provide for chlorine demand and contact time, depending on the flow of water at a given time from the well fields feeding the station. Increased salt supplies would be required to accommodate the increased production capacity of the OSHG. However, this would not result in an increased number of truck deliveries to the station, which would remain at about one every 2 weeks. Additional supplies of potable water would be required to provide for increased volumes and rate of use of brine solution. However, all potable water feeding the OSHG system would be returned to the potable water system with minimal loss of volume at the chlorine injection points adjacent to the station. Increased electrical energy would be required to operate the larger OSHG and associated systems. It is estimated that approximately 5,500 kWh per day would be consumed to run the station at maximum capacity (2,000 ppd), compared to the existing maximum load of approximately 2,525 kWh per day (800 ppd). The same periodic maintenance and replacement of the facility components would occur after Project implementation as before.

2.5.3 NHC Chlorination Station Operation

The replacement NHC Chlorination Station would involve a new level of operational activity. However, the type of activities at the NHC Chlorination Station would be similar in nature to those at the NHW and RT Chlorination Stations. The station would not be permanently staffed, but may be visited daily to monitor operations and conduct routine inspections, maintenance, and required repairs, and no additional permanent LADWP personnel beyond current operations would be necessary. All systems would also be monitored remotely. The station would be operational 24 hours a day, 7 days a week, but would only operate on an as-needed basis, depending on the flow of water to the NHPS property at a given time. The NHC OSHG would require a constant supply of food-grade salt as feed stock for the brine solution. This would require approximately one truck trip every 2 weeks. Potable water would also be required for the brine solution and would be provided from the local potable water system. However, all potable water feeding the OSHG system would be returned to the potable water system with minimal loss of volume at the chlorine injection points on the NHPS property. It is estimated that approximately 10,855 kWh per day would be consumed to run the station at maximum capacity (4,000 ppd). Periodic maintenance of equipment would be required, including scheduled replacement of components such as the electrolytic cell of the OSHG. Relatively small quantities of hydrogen, which would be produced as a byproduct of the electrolysis process, would be contained, diluted, and vented to the atmosphere, as is currently done at the NHW and RT Chlorination Stations.

2.5.4 NHOU2IR Treatment Facility Operation

As discussed above, the NHOU2IR groundwater treatment facility at Lankershim Yard will treat water pumped from wells located in the western portion of the NHOU. Upon completion of all phases of the treatment facility and well field improvements, which are anticipated to be operational in 2024, the NHOU2IR system will have the capacity to treat approximately 5,200 gallons per minute (gpm), or approximately 12 cfs. At full operations, this would represent approximately 8,500 acre-feet per year (AFY). The initial phase of the NHOU2IR, which is anticipated to be operational in 2023, will have a capacity to treat approximately 1,000 gpm, or approximately 2 cfs. At full operations, this would represent approximately 1,500 AFY. Pending the issuance of an amended Domestic Water Supply Permit from DDW, treated water from this initial phase would be conveyed from Lankershim Yard to the NHPS property via an existing but currently unused 16-inch well collector line. The 16-inch line is located in the pavement of Lankershim Yard west of the treatment facility. An existing chlorine injection point from the RT Chlorination Station is located on the line, and the existing station can provide for chlorine demand, contact time, and chlorine residual for the initial-phase 2 cfs without any expansion in capacity. The procedures and processes described below relate to the operation of the treatment facility at full capacity after completion of all phases, which would provide treatment for a flow of 5,200 gpm. Therefore, the level of operational activities that would be associated with the initial phase of operations at 1,000 gpm flow are appropriately captured within the full capacity operations as described below.

The NHOU2IR groundwater treatment facility are anticipated to operate continuously to achieve the NHOU2IR remedial action objectives. The facilities would not be permanently staffed, but would be visited daily to monitor operations and conduct routine inspections, maintenance, and required repairs. Periodic replacement of equipment and components would be required, based on expected wear. These activities are not anticipated to generate a substantial number of vehicle trips or substantial use of heavy equipment.

The operation of the treatment systems would also require various chemicals and materials that would be consumed and must be continuously or intermittently replenished. A weak base anion (WBA) exchange system would be used for water pumped from certain wells to remove hexavalent chromium. Pretreatment activities on water from those wells would involve the use of sulfuric acid to adjust the pH of the water to maintain the efficiency of the WBA exchange system. The sulfuric acid would be stored in an aboveground 6,000-gallon carbon-steel tank, which would be lined with a phenolic resin to protect against corrosion. While the tank would have a capacity of 6,000 gallons, it would be maintained at an operating volume of 4,500 gallons. The sulfuric acid would be consumed at a rate of approximately 130 gallons per day, with the system operating at full capacity. Depending on actual use, the tank may need to be completely refilled approximately every month, which would require two standard-capacity tank trailer trucks (2,600 to 3,000 gallons). However, refilling operations may occur more frequently with a single truck to maintain the level of the tank.

The WBA exchange system uses a resin material that removes the hexavalent chromium from the water and reduces it to the less toxic and more stable trivalent chromium. The trivalent chromium is then retained on the resin media. The resin would be contained in two 600-cubic-foot vessels in a lead-lag arrangement, with one serving as the primary vessel and the other as the redundant vessel for the hexavalent chromium removal process. To maintain the effectiveness of the resin, the vessels would be backwashed up to two times annually, consuming a total of approximately 111,000 gallons of water per year. This water would be supplied from a dedicated tank that would hold 100,000 gallons of effluent from the NHOU2IR treatment facility. A second 100,000-gallon tank would be provided to hold the backwash wastewater, which would then be released to the existing sanitary sewer system at a rate that would not exceed the available capacity in the sewer lines.

Once the resin in the lead WBA exchange vessel reaches capacity (i.e., becomes saturated with trivalent chromium), it would be removed and replaced, and the lead vessel would become the lag vessel, while the previous lag vessel would become the lead vessel. Through this rotational process, it is anticipated that the resin in one vessel would be changed out each year (i.e., each vessel's resin would be removed and replaced every 2 years). Once expended, the resin in the lead vessel would be removed and properly prepared for off-site transport. The transport would require two trucks. Because the WBA resin is also expected to accumulate low levels of naturally occurring uranium present in the groundwater, the spent resin is anticipated to be classified as Low-Activity Radioactive Waste (LARW), which must be transported to a facility approved for disposal of such waste.

The NHOU2IR treatment system will employ an advanced oxidation process (AOP) involving the injection of hydrogen peroxide into the well water followed by exposure to ultraviolet (UV) light to convert 1,4-dioxane and volatile organic compounds (VOCs) into benign constituents. Hydrogen peroxide would be stored in an aboveground 8,400-gallon double-walled high-density polyethylene tank; however, it would be maintained at an operating volume of 6,900 gallons. The hydrogen peroxide would be consumed at an estimated rate of 14 gallons per hour, or approximately 10,000 gallons per month, with the system operating at full capacity. Therefore, depending on actual use, the tank may need to be completely refilled as frequently as every three weeks, which would require three standard-capacity tank trailer trucks. However, refilling operations may occur more frequently with a single truck to maintain the level of the tank.

The AOP reactor would contain two UV reactor trains, each containing 192 UV lamps. The lamps are expected to last approximately 15,000 hours. Assuming that the reactors were running continuously, the lamps would need to be changed approximately every 20 months. Assuming all lamp replacement would occur simultaneously on a recurring basis, it would require about one truck round trip per day and two personnel for about 1 week. Because the lamps contain mercury, they would be returned to the manufacturer for recycling.

After the AOP process, liquid-phase granular activated carbon (LPGAC) would be used to remove residual hydrogen peroxide and VOCs. Twelve LPGAC vessels, each 14 feet in diameter with a capacity for 30,000 pounds of carbon media, would be paired in a lead-lag configuration to provide primary and redundant treatment. Assuming maximum well field operations and based on the lead-lag vessel configuration, the carbon media in each LPGAC vessel would need to be replaced about once every other year, which would mean six vessels per year would be changed out. During this replacement process, the carbon media in one to two vessels would be replaced every week until the change-out of all vessels is completed over a 1- to 1.5-month period. The spent carbon media would be transported to a recycling facility for regeneration and reuse. The vessels would be disinfected, loaded with fresh carbon media, and backwashed. Three workers and approximately two to four truck trips per week would be required during this replacement process.

The backwashing of the LPGAC vessels during change-out would require about 37,000 gallons of water per vessel, or about 222,000 gallons for the change-out of six vessels annually. The water for backwashing would be supplied from the dedicated tank that would hold 100,000 gallons of effluent from the NHOU2IR treatment facility. The backwash wastewater would be directed to the 100,000-gallon wastewater holding tank, from which it would be released to the existing sanitary sewer system at a rate that would not exceed the available capacity in the sewer lines.

Electricity to operate the treatment facility would be provided by LADWP from the service drop at Lankershim Yard. It is estimated that approximately 28,370 kWh per day would be consumed to run the facilities at maximum capacity.

2.6 Discretionary Approvals Required for the Project

Numerous approvals and/or permits would be required to implement the Proposed Project. This IS/MND would be used to facilitate granting of such approvals and permits by various state and local agencies having jurisdiction over one or more aspects of the Project. These approvals and permits may include, but may not be limited to, those listed below.

LADWP is the lead agency for the Proposed Project pursuant to CEQA Guidelines, Section 15367. The Proposed Project would require the following discretionary approvals from LADWP:

- Approval by the Board of the Proposed Project

Approvals from other regulatory agencies or entities may also be required as follows:

State Water Resources Control Board, Division of Drinking Water

- Amendment of LADWP's existing Domestic Water Supply Permit for operation of new treatment facilities

State Water Resources Control Board

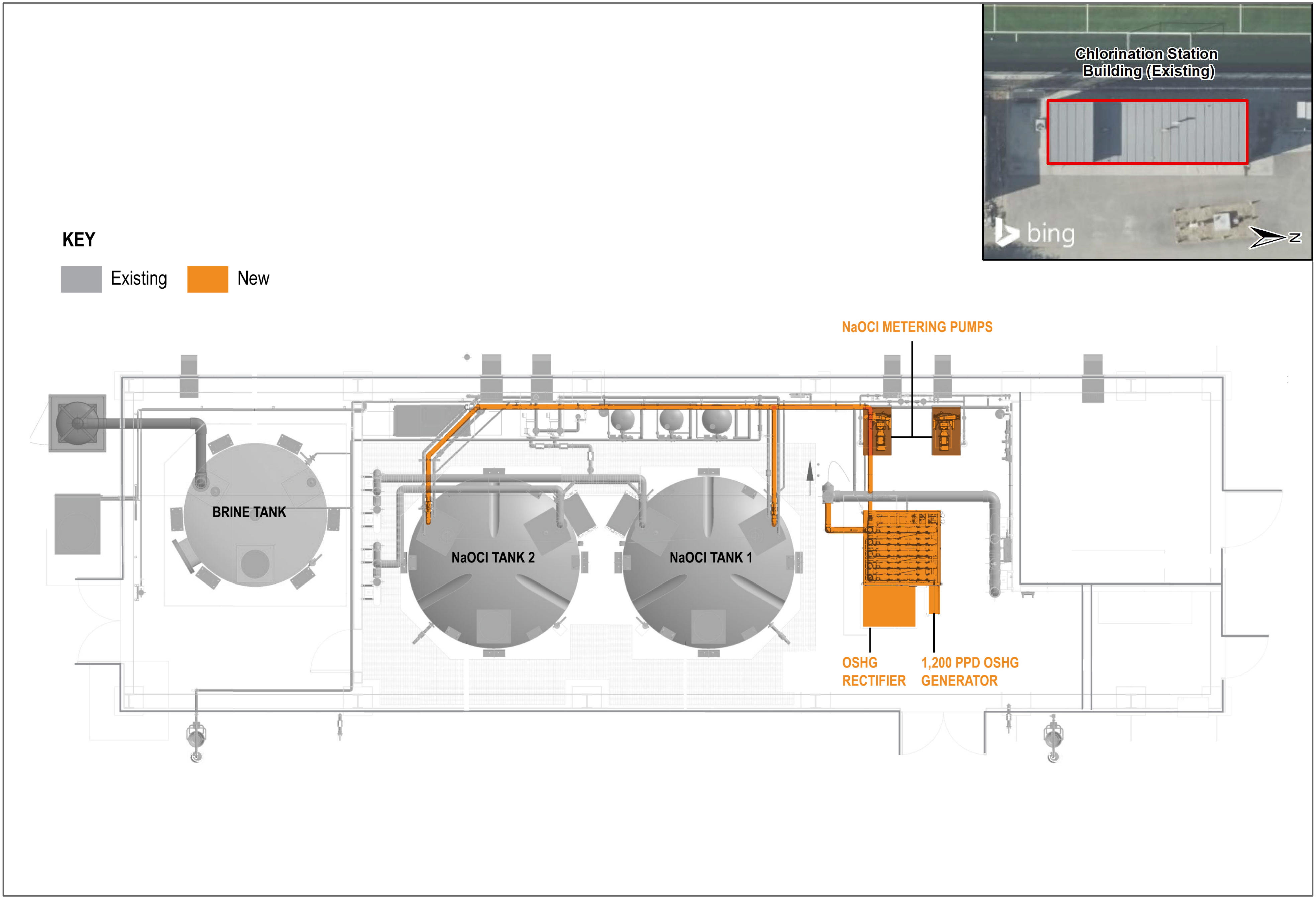
- Approval of partial funding from public sources, such as the Proposition 1 funds
- A National Pollutant Discharge Elimination System (NPDES) Construction General Permit may be required for stormwater discharges associated with construction and land disturbance activities and, if so, a stormwater pollution prevention plan (SWPPP) must be developed to comply with the NPDES permit

California Department of Industrial Relations, Division of Occupational Safety and Health, Mining and Tunneling Unit

- An Excavations, Trenches, Construction and Demolition and the Underground Use of Diesel Engines in Work in Mines and Tunnels Permit must be obtained from the building official prior to grading

Los Angeles Regional Water Quality Control Board

- An NPDES Dewatering General Permit may be required for discharges associated with clean or relatively pollutant-free wastewaters that pose little or no threat to the quality of waters of the United States



SOURCE: Bing Imagery 2021, Dudek 2022

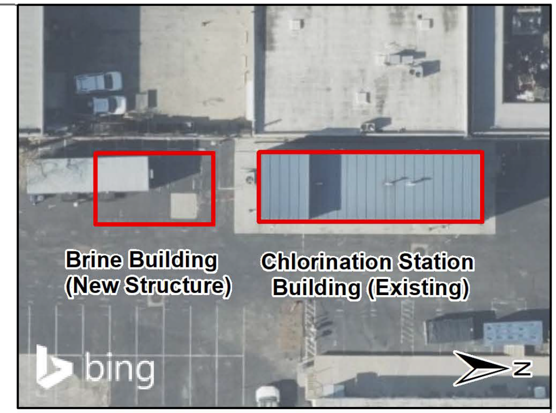
Los Angeles Department of Water & Power

FIGURE 5

North Hollywood West Chlorination Station

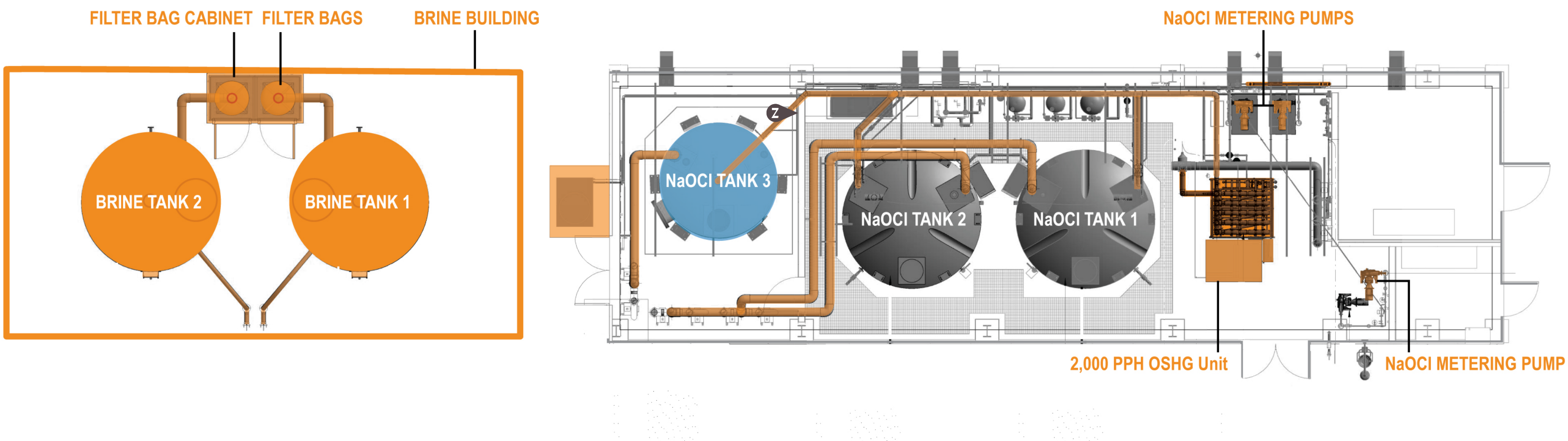
LADWP Chlorination Stations MND

INTENTIONALLY LEFT BLANK



KEY

Existing | Existing/to be modified | New



SOURCE: Bing Imagery 2021, Dudek 2022

LA DWP Los Angeles Department of Water & Power

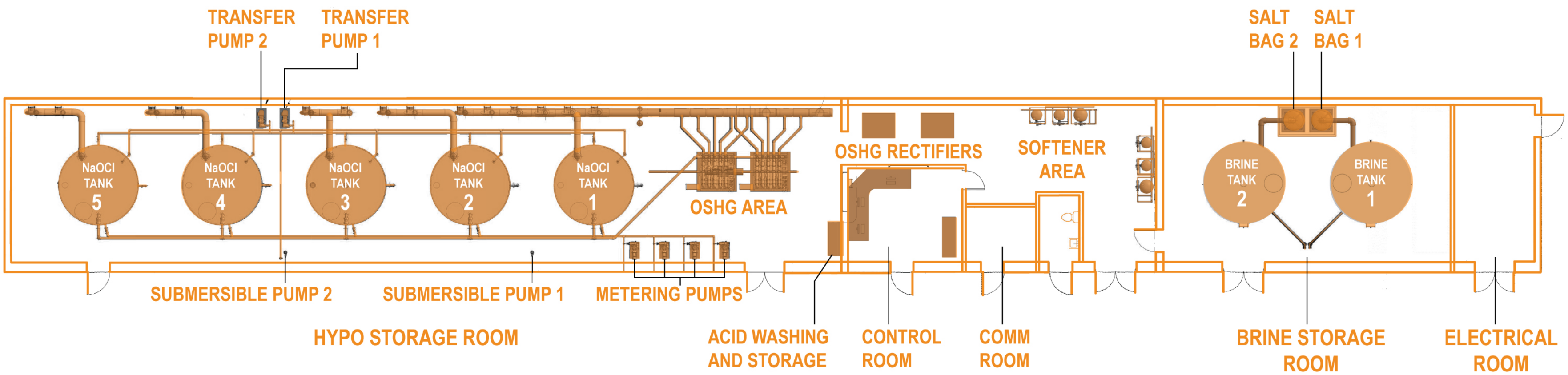
FIGURE 6

Rinaldi-Toluca Chlorination Station

INTENTIONALLY LEFT BLANK

KEY

New



SOURCE: Bing Imagery 2021, Dudek 2022

LA DWP Los Angeles Department of Water & Power

FIGURE 7

North Hollywood Central Chlorination Station

INTENTIONALLY LEFT BLANK

3 INITIAL STUDY CHECKLIST

The following discussion of potential environmental effects was completed in accordance with Section 15063(d)(3) of the CEQA Guidelines (2021) to determine if the Proposed Project may have a significant effect on the environment.

1. **Project title:**

   North Hollywood Chlorination Stations and NHOU2IR West Treatment Project

2. **Lead agency name and address:**

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

3. **Contact person and phone number:**

   Marshall Styers
   Environmental Planning and Assessment
   Los Angeles Department of Water and Power
   213.367.3541

4. **Project location:**

   - North Hollywood Central Chlorination Station (11805 Vanowen Street, Los Angeles, California 91605)
   - North Hollywood West Chlorination Station (6859 Morella Avenue, Los Angeles, California 91605)
   - Rinaldi-Toluca Chlorination Station and NHOU2IR West Treatment Plant (11845 West Vose Street, Los Angeles, California 91605)

5. **Project sponsor's name and address:**

   Los Angeles Department of Water and Power
   111 North Hope Street
   Los Angeles, California 90012

6. **City Council Districts:**

   District 2

7. **Neighborhood Council Districts:**

   North Hollywood North East Neighborhood Council

8. **General Plan designation:**

   - North Hollywood Central Chlorination Station General Plan Designation: Low Medium II Residential
   - North Hollywood West Chlorination Station General Plan Designation: Open Space
   - Rinaldi-Toluca Chlorination Station and NHOU2IR West Treatment Plant General Plan Designation: Light Manufacturing

9. **Zoning:**

   - North Hollywood Central Chlorination Station Zoning Designations: RD1.5-1 (Restricted Density Multiple Dwelling Zone)
   - North Hollywood West Chlorination Station Zoning Designation: OS-1XL (Open Space)
   - Rinaldi-Toluca Chlorination Station and NHOU2IR West Treatment Plant Zoning Designation: M2-1VL (Limited Industrial)

10. **Description of Project:**

    Refer to Chapter 2 of this Initial Study

11. **Surrounding land uses and setting:**

    Refer to Section 2.1 of this Initial Study

12. **Other public agencies whose approval is required:**

    - State Water Resources Control Board, Division of Drinking Water
    - California Department of Industrial Relations, Division of Occupational Safety and Health, Mining and Tunneling Unit
    - Los Angeles Regional Water Quality Control Board

13. **Have California Native American tribes traditionally and culturally affiliated with the Project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?**

    Pursuant to California Public Resources Code Section 21080.3.1, LADWP contacted the following seven tribes: Fernandeño Tataviam Band of Mission Indians, Gabrieleño Band of Mission Indians – Kizh Nation, Gabrieleno/Tongva San Gabriel Band of Mission Indians, Gabrielino/Tongva Nation, Gabrielino Tongva Indians of California Tribal Council, Gabrielino-Tongva Tribe, and the San Fernando Band of Mission Indians. Two tribes, the Fernandeño Tataviam Band of Mission Indians and the Gabrieleño Band of Mission Indians – Kizh Nation, requested consultation with LADWP on the potential impact of the Proposed Project, and consultation has been initiated. Additional discussion about tribal consultation conducted for this Proposed Project can be found in Section 3.18, Tribal Cultural Resources, of this IS/MND.

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

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

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

DETERMINATION

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because 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 ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Jane Hauptman   10/21/22

Signature   Date

EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an Environmental Impact Report (EIR) is required.
4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
   a. Earlier Analysis Used. Identify and state where they are available for review.
   b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
   a. The significance criteria or threshold, if any, used to evaluate each question; and
   b. The mitigation measure identified, if any, to reduce the impact to less than significance.

3.1 Aesthetics

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

a) Would the project have a substantial adverse effect on a scenic vista?

No Impact. Scenic vistas generally refer to views of expansive open space areas or other natural features, such as mountains, undeveloped hillsides, large natural water bodies, or coastlines. Less commonly, certain urban settings or features, such as a striking or renowned skyline, may also represent a scenic vista. Under CEQA, scenic vistas also generally, although not exclusively, refer to views that are accessible to broader segments of the public, rather than those available to a limited number of private entities. A significant effect on scenic vistas could occur if the Proposed Project were to obstruct or compromise a vista or if it were to degrade or remove a scenic resource that can be observed from a vista.

The components of the Proposed Project would be spread among three locations: the NHW Chlorination Station, the RT Chlorination Station, and the NHC Chlorination Station, which are all located within the North Hollywood–Valley Village Community Plan, a land use plan adopted by the City of Los Angeles for the North Hollywood community. This plan does not designate any scenic vistas or other visual resources in the community plan area (City of Los Angeles 1996). All three Project Sites are within urbanized areas and involve development on LADWP properties, either within or immediately adjacent to existing LADWP facilities. Distant views of the Verdugo Mountains are available from some of the roadways surrounding the Project Sites, particularly from eastbound travel lanes along the east–west-trending Vanowen and Dehougne Streets. The Verdugo Mountains are approximately 3 miles northeast of the closest Project Site (the RT Chlorination Station). However, views of the mountains are confined to the linear corridors created by these roadways and are not generally observed to the north or south of these roadways, due to existing intervening development and landscaping. As such, the Proposed Project would not have the potential to adversely affect views of the distant mountains or any other scenic resources. No impact to scenic vistas would occur as a result of the Proposed Project.

b) Would the project substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. The nearest officially designated state scenic highway is a portion of State Highway 2 that extends through the San Gabriel Mountains, beginning just north of the City of La Cañada Flintridge (Caltrans 2018). This scenic highway is located approximately 12 miles northeast of the closest Project Site (the RT Chlorination Station). At this distance, the Project Site is not within the viewshed of this state scenic highway.

The City's land use plans also designate certain roadways within the City as scenic highways. Land areas that are visible from, and normally contiguous to, scenic highways are called "scenic corridors." The City-designated scenic highway that is nearest to the Project Sites is at the corner of Sunland Boulevard and La Tuna Canyon Road (City of Los Angeles 2003), which is approximately 2.8 miles northeast of the RT Chlorination Station. The Proposed Project would not be visible from the scenic highway due to the intervening distance and the urban development that lies between the Project Site and this roadway. As such, development of the Project would not have the potential to affect views that can be observed from a City-designated scenic highway. Therefore, the Project would have no impact on scenic resources within a state or local scenic highway.

c) In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

No Impact. The Proposed Project Sites are in an urbanized area. As discussed in Section 3.1(b), the Project Sites would not be visible from any state scenic highways or City scenic corridors, and the North Hollywood–Valley Village Community Plan does not designate any scenic vistas or other visual resources in the community plan area (City of Los Angeles 1996). The NHW Chlorination Station is zoned as Open Space. Part of the Open Space zoning designation's stated purpose is to "protect and preserve natural resources and natural features of the environment" (City of Los Angeles 1990). However, all improvements at the NHW Chlorination Station would be contained within the existing chlorination station building and would have no impact on any natural features in the vicinity of the Project Site. No other applicable zoning or other regulation contains provisions for scenic quality. All three Project Sites are owned by LADWP and are currently developed with water treatment and distribution facilities. Therefore, there would be no impact from the Proposed Project on scenic quality.

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

No Impact. Lighting levels at the NHW and RT Chlorination Stations would not change as a result of the Proposed Project. Improvements at the NHC Chlorination Station would include expansion of LADWP facilities onto parcels that are currently vacant. However, the existing NHC facilities already contain lighting and cover the majority of the block. Although some additional directed facility lighting would be provided by the new chlorination station building, it would not create a substantial new source of light relative to the existing condition, and there would be no impact.

References

Caltrans (California Department of Transportation). 2018. California Scenic Highway System Map. Accessed December 30, 2021. https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa.

City of Los Angeles. 1990. City of Los Angeles Municipal Code. *Sec. 12.04.05. "OS" Open Space Zone*. Accessed March 30, 2022. https://codelibrary.amlegal.com/codes/los_angeles/latest/lamc/0-0-0-109001.

City of Los Angeles. 1996. *North Hollywood – Valley Village Community Plan*. Updated May 14, 1996. Accessed December 30, 2021. https://planning.lacity.org/odocument/e700390a-5998-4702-8b0b-d8095b864b9b/North_Hollywood-Valley_Village_Community_Plan.pdf.

City of Los Angeles. 2003. *San Gabriel/Verdugo Mountains Scenic Preservation Specific Plan*. Adopted December 19, 2003. Accessed December 30, 2021. https://planning.lacity.org/odocument/f0711893-7773-475f-bcb1-ec39dbcdacf7.

3.2 Agriculture and Forestry Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 Dept. 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?	☐	☐	☐	☒

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

No Impact. The Project Sites are not located on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as mapped by the Farmland Mapping and Monitoring Program. There is a strip of Unique Farmland approximately 0.1 miles east of the RT Chlorination Station (CDOC 2016), but it would not be impacted by the Proposed Project. Therefore, the Proposed Project would not convert Farmland to non-agricultural uses, and no impact would occur.

b) ***Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?***

No Impact. The Project Sites are not under a Williamson Act contract (CDOC 2016), and no effects would occur related to conflicts with Williamson Act contracts. The Project Sites are currently zoned RD1.5-1 (Restricted Density Multiple Dwelling Zone), OS-1XL (Open Space), and M2-1VL (Limited Industrial). Because the Project Sites are within the City of Los Angeles, they are located within an Urban Agriculture Incentive Zone (UAIZ). The UAIZ Ordinance was adopted by the City pursuant to State Assembly Bill No. 551 to encourage agriculture in urban areas through reductions in property taxes for qualifying properties used for agricultural purposes for at least 5 years. However, all three Project Sites are owned by LADWP, and the majority of each Project Site is currently used for water treatment and distribution purposes and is not accessible to the general public. As such, urban agricultural activities would not be suitable within these properties. Therefore, there would be no impacts related to conflicts with existing agricultural zoning.

c) ***Would the project 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))?***

No Impact. No forest land, timberland, or Timberland Production areas (as defined in California Public Resources Code Sections 12220[g], 4526, and 51104[g]) are located within or adjacent to the Project Sites. Therefore, the Proposed Project would not conflict with existing zoning for forest land, timberland, or Timberland Production areas, and no impact would occur.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. As discussed in Section 3.2(c), no forest land is located on the Project Sites. As such, no forest land would be lost or converted by the Proposed Project, and no impact would occur.

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

No Impact. The Project Sites are surrounded by single- and multi-family residential, as well as some recreational uses, commercial uses, and light manufacturing uses. The area of the Project Sites is highly urbanized. No Farmland or forest land exists in the vicinity of the Project Sites. As such, the Proposed Project would not result in changes to the existing environment that could result in conversion of Farmland or forest land to non-agricultural or non-forest uses. No impact would occur.

References

CDOC (California Department of Conservation). 2016. California Important Farmland Finder. 2016. Accessed December 31, 2021. https://maps.conservation.ca.gov/DLRP/CIFF/.

City of Los Angeles. 2019. “Urban Agriculture Incentive Zone (UAIZ) Program Application and Approval Flowchart.” Accessed December 31, 2021. https://planning.lacity.org/odocument/bec07c63-8334-435e-a3be-354f04f37022/Application_Process.pdf.

City of Los Angeles. 2021. “Urban Agriculture Incentive Zone (UAIZ) Program Fact Sheet.” Accessed December 31, 2021. https://planning.lacity.org/odocument/8ad42004-12d8-4338-95d4-d6d41434cc13/FAQ.pdf.

3.3 Air Quality

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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.				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

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

Less-Than-Significant Impact. The Project Sites are located within the South Coast Air Basin (SCAB), which includes the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties and all of Orange County, and is within the jurisdictional boundaries of the South Coast Air Quality Management District (SCAQMD). The Project Sites are located in the community of North Hollywood in the City of Los Angeles.

SCAQMD administers the SCAB's Air Quality Management Plan (AQMP), which is a comprehensive document outlining an air pollution control program for attaining the California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS). The most recently adopted AQMP for the SCAB is the 2016 AQMP (SCAQMD 2017). The 2016 AQMP focuses on available, proven, and cost-effective alternatives to traditional strategies while seeking to achieve multiple goals in partnership with other entities seeking to promote reductions in greenhouse gases (GHGs) and toxic risk, as well as efficiencies in energy use, transportation, and goods movement (SCAQMD 2017). The 2022 update to the AQMP is currently being developed but had yet to be adopted when this IS/MND was written.

The purpose of a consistency finding with regard to the AQMP is to determine if a project is consistent with the assumptions and objectives of the regional air quality plans and if it would interfere with the region's ability to comply with the NAAQS and the CAAQS. SCAQMD has established criteria for determining consistency with the currently applicable AQMP in Chapter 12, Sections 12.2 and 12.3, of SCAQMD's CEQA Air Quality Handbook. These criteria are as follows (SCAQMD 1993):

- **Consistency Criterion No. 1:** Whether the project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the ambient air quality standards or interim emission reductions in the AQMP.
- **Consistency Criterion No. 2:** Whether the project would exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

To address the first criterion, Project-generated criteria air pollutant emissions have been estimated and analyzed for significance and are addressed in Section 3.3(b). Detailed results of this analysis are included in Appendix A, Air Quality and Greenhouse Gas Emissions Calculations. As presented in Section 3.3(b), construction and operation of the Proposed Project would not generate criteria air pollutant emissions that exceed SCAQMD's thresholds, and it would therefore be consistent with Criterion No. 1.

The second criterion, regarding a project's potential to exceed the assumptions in the AQMP or increments based on the year of project buildout and phase, is primarily assessed by determining consistency between the project site's land use designations and the project's potential to generate population growth. In general, projects are considered consistent with, and not to conflict with or obstruct implementation of, the AQMP if the growth in socioeconomic factors is consistent with the underlying regional plans used to develop the AQMP (per Consistency Criterion No. 2 of the SCAQMD CEQA Air Quality Handbook). SCAQMD primarily uses demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by the Southern California Association of Governments (SCAG) for its Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) (SCAG 2016). This document, which is based on general plans for cities and counties in the SCAB, is used by SCAQMD to develop the AQMP emissions inventory (SCAQMD 2017).[1] SCAG's 2016 RTP/SCS and the associated Regional

[1] Information necessary to produce the emissions inventory for the SCAB is obtained from SCAQMD and other governmental agencies, including the California Air Resources Board, Caltrans, and SCAG. Each of these agencies is responsible for collecting data (e.g., industry growth factors, socioeconomic projections, travel activity levels, emission factors, emission speciation profile, and emissions) and developing methodologies (e.g., model and demographic forecast improvements) required to generate a comprehensive emissions inventory. SCAG incorporates these data into its Travel Demand Model for estimating/projecting vehicle miles traveled and driving speeds. SCAG's socioeconomic and transportation activities projections from their 2016 RTP/SCS are integrated into the 2016 AQMP (SCAQMD 2017).

Growth Forecast are generally consistent with the local plans[2]; therefore, the 2016 AQMP is generally consistent with local government plans.

The Proposed Project consists of the construction and operation of the three chlorination stations and the operation of the NHOU2IR facility. This would provide capability to safely and effectively treat and disinfect water pumped from the RT Well Field, the NHW Well Field, and the western portion of the NHOU consistent with historical use and current and projected need. As such, because the Proposed Project is not anticipated to result in population growth or generate an increase in employment that would conflict with existing employment population projections, it would not conflict with or exceed the assumptions in the 2016 AQMP. Accordingly, the Project would be consistent with the RTP/SCS forecasts used in the development of SCAQMD's AQMP.

In summary, based on the considerations presented for the two criteria, impacts relating to the Project's potential to conflict with or obstruct implementation of the applicable AQMP would be less than significant.

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

Less-Than-Significant Impact. Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development, and SCAQMD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level thresholds of significance for criteria pollutants are relevant in the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

SCAQMD has adopted thresholds to address the significance of air quality impacts resulting from a project. A project would result in a substantial contribution to an existing air quality violation of the NAAQS or CAAQS for ozone (O_3), which is a nonattainment pollutant, if the project's construction emissions would exceed SCAQMD's VOC or oxides of nitrogen (NO_x) significance thresholds, shown in Table 3.3-1. These emissions-based thresholds for O_3 precursors are intended to serve as a surrogate for an "ozone significance threshold" (i.e., the potential for adverse O_3 impacts to occur) because O_3 itself is not emitted directly, and the effects of an individual project's emissions of O_3 precursors (VOCs and NO_x) on O_3 levels in ambient air cannot be determined through air quality models or other quantitative methods. The SCAB is

2 The most recent RTP/SCS is SCAG's Connect SoCal, which was adopted on September 3, 2020; however, demographics from the 2016 RTP/SCS are still applicable for the purposes of the air quality analysis, since those are included and used in the current AQMP, which was adopted in 2016.

also nonattainment for the state standards for particulate matter with an aerodynamic diameter less than or equal to 10 microns in size (coarse particulate matter, or PM_{10}) and federal and state particulate matter with an aerodynamic diameter less than or equal to 2.5 microns in size (fine particulate matter, or $PM_{2.5}$).

Table 3.3-1. SCAQMD Air Quality Significance Thresholds

Criteria Pollutants Mass Daily Thresholds		
Pollutant	*Construction (Pounds per Day)*	*Operation (Pounds per Day)*
VOCs	75	55
NO_x	100	55
CO	550	550
SO_x	150	150
PM_{10}	150	150
$PM_{2.5}$	55	55
Lead[a]	3	3
TACs and Odor Thresholds		
TACs[b]	Maximum incremental cancer risk ≥10 in 1 million Cancer Burden >0.5 excess cancer cases (in areas ≥1 in 1 million) Chronic and acute hazard index ≥1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
Ambient Air Quality Standards for Criteria Pollutants[c]		
NO_2 1-hour average NO_2 annual arithmetic mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.030 ppm (state); 0.0534 ppm (federal)	
CO 1-hour average CO 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state /federal)	
PM_{10} 24-hour average PM_{10} annual average	10.4 μg/m^3 (construction); 2.5 μg/m^3 (operation)[d] 1.0 μg/m^3	
$PM_{2.5}$ 24-hour average	10.4 μg/m^3 (construction); 2.5 μg/m^3 (operation)[d]	

Source: SCAQMD 2019.

Notes: SCAQMD = South Coast Air Quality Management District; VOCs = volatile organic compounds; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; TAC = toxic air contaminant; NO_2 = nitrogen dioxide; ppm = parts per million; μg/m^3 = micrograms per cubic meter.

[a] The phase-out of leaded gasoline started in 1976. Since gasoline no longer contains lead, the Proposed Project is not anticipated to result in impacts related to lead; therefore, it is not discussed in this analysis.

[b] TACs include carcinogens and non-carcinogens.

[c] Ambient air quality standards for criteria pollutants are based on SCAQMD Rule 1303, Table A-2, unless otherwise stated.

[d] Ambient air quality thresholds are based on SCAQMD Rule 403.

Construction Emissions

Proposed construction activities would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, dust, and VOC off-gassing) and off-site sources (i.e., on-road trucks and worker vehicle trips). Construction emissions can vary from day to day, depending on the level of activity; the specific type of operation; and for dust, the prevailing weather conditions. Therefore, an increment of day-to-day variability exists.

As discussed in detail below, implementation of the Project would generate criteria air pollutant emissions from off-road equipment, vehicle travel, and material handling. Internal combustion engines used by construction equipment, trucks, and worker vehicles would result in emissions of VOCs, NO_x, carbon monoxide (CO), sulfur oxides (SO_x), PM_{10}, and $PM_{2.5}$. PM_{10} and $PM_{2.5}$ emissions would also be generated by earthmoving necessary for the grading and excavation at the Project sites, material handling for truck loading/unloading activity, on-road vehicles traveling on paved roads, and from brake and tire wear. The Project would be required to comply with SCAQMD Rule 403 to control dust emissions generated during any dust-generating activities. Standard construction practices that would be employed to reduce fugitive dust emissions include watering of the active dust areas up to two times per day, depending on weather conditions. It is anticipated that any asphalt pavement and associated VOC off-gassing emissions would be negligible, and it was not included in the assessment.

Construction assumptions were developed based on available Project information, details of which are included in Table 2-2 in Section 2.4. Construction details were identified on a monthly basis for the combined development of all three Project sites, with the majority of construction activities required at the NHC site. Although not all of the activities identified in the same month at each Project site would occur simultaneously, for the purposes of estimating emissions, it was conservatively assumed that all construction activities (i.e., equipment operation, truck trips, worker trips, and material handling) identified within a given month would occur within the same day. This overall approach to the construction scenario assumptions would result in maximum daily emissions that reflect a level of intensity that is greater than any level reasonably anticipated to occur. In addition to inherent limitations during any construction process associated with equipment and personnel availability and site constraints, concurrent maximum construction at each active site within each month is not anticipated. Nonetheless, because the precise level of intensity on any given day cannot be known in advance, this analysis conservatively assumes the worst-case day within each month.

Construction Schedule

A detailed depiction of expected construction schedules – including information regarding phasing, equipment used during each phase, trucks, and worker vehicles – is provided in Appendix A and summarized in Section 2.4, Project Construction, of this IS/MND.

Emissions Estimation Methodology and Assumptions

Emissions from the construction phase of the Proposed Project were estimated using a spreadsheet-based model and emissions factors from the California Air Resources Board (CARB) Mobile Source Emissions Inventory Model (EMFAC, version 2021), CARB Off-Road Emissions Inventory Model (OFFROAD, version 2011), and the EPA AP-42 factors. Emission calculation equations and assumptions were primarily derived from the California Emissions Estimator Model (CalEEMod) version 2020.4.0.

A summary of the emissions calculation methodology is provided below for off-road equipment, on-road vehicle travel, and fugitive dust associated with earthwork and material handling.

Equipment Emissions

Operation of heavy construction equipment generates criteria air pollutant emissions from fuel combustion. Consistent with CalEEMod assumptions, all off-road construction equipment was assumed to be diesel-fueled. Because the equipment is assumed to be diesel, there are no starting or evaporative emissions associated with the equipment, as these are de minimis for diesel-fueled equipment; as such, only running exhaust emissions from off-road equipment are estimated.

A pounds-per-hour emissions rate was generated for each piece of equipment for each year of construction based on the equipment-specific emissions factor (in grams per brake-horsepower-hour); the average equipment horsepower; and average load factor,[3] derived from the CalEEMod 2020.4.0 database, which incorporates OFFROAD2011 factors. All pieces of equipment were assumed to operate an average of 4 hours per day, 5 days per week. Daily emissions were estimated by multiplying the equipment-specific emissions factor by the number of pieces of equipment and the hours of operation in one day.

---

3 The load factor is the ratio of the actual output to the maximum output of a piece of equipment. The load factor is equipment-type-specific and does not vary with horsepower (hp) (e.g., the load factors of a 125 hp dozer and a 500 hp dozer are the same).

Vehicle Emissions

Exhaust. The emissions factors for trucks and worker vehicles were determined using CARB's motor vehicle emissions inventory program, EMFAC2021. EMFAC2021 can generate emissions factors, expressed in grams per mile, for the fleet in a class of motor vehicles within a county for a particular study year. For this analysis, the SCAB portion of Los Angeles County and calendar years 2023, 2024, 2025, and 2026 were selected based on the Proposed Project's overall construction schedule. Vehicle emission factors accounted for aggregated model years and speeds for on-road vehicles.

A composite, or weighted-average, emissions factor was developed for Project vehicle types if more than one vehicle category in EMFAC is anticipated to be representative of the Project vehicles. The composite emissions factor represents the weighted average emissions rate of the SCAB portion of Los Angeles County vehicle fleet, which was weighted based on vehicle miles traveled (VMT) in the EMFAC inventory. Vehicle emission factors were developed for trucks (haul, material delivery, and concrete), which reflect a composite of heavy-heavy-duty trucks and medium-heavy-duty trucks, and for worker vehicles, which are based on a composite of light-duty automobiles and light-duty trucks. The vehicle exhaust emission factors developed for each Project vehicle were then multiplied by the VMT for each trip to estimate exhaust emissions associated with vehicle travel to and from the Project Sites. Peak trucks and workers were incorporated into the model and were each estimated to generate two one-way trips (one round trip). Although it is reasonable to assume that not all workers would drive separately to the Project Sites, this analysis conservatively assumes single-occupancy-vehicle worker trips. The average distance traveled by each truck was assumed to be 20 miles per one-way trip, and the average distance traveled by each worker was assumed to be 15 miles per one-way trip.

Brake and Tire Wear. As vehicles are driven, particulate matter is generated from degradation of brakes and tires. Brake and tire wear PM_{10} and $PM_{2.5}$ emissions were calculated by multiplying the EMFAC2021 emission factors for brake wear or tire wear for each vehicle class and the total VMT for that vehicle class.

The VMT assumed is the same used for vehicle trips. Brake and tire wear PM_{10} and $PM_{2.5}$ emissions were estimated in the vehicle emissions spreadsheet model and added to other vehicle sources of PM_{10} and $PM_{2.5}$ (i.e., exhaust and paved road dust) to present total PM_{10} and $PM_{2.5}$ associated with truck and worker trips.

Paved Road Dust. Vehicles that drive on paved roads generate fugitive dust by dispersing the silt from the roads. Paved road dust PM_{10} and $PM_{2.5}$ emission factors were developed pursuant to the CalEEMod road dust equation and based on road surface silt loading factors from CalEEMod and particle size multipliers from AP-42. Emissions were calculated by multiplying the paved road dust emission factors by the VMT.

The VMT assumed is the same used for vehicle trips and brake and tire wear. Paved road PM_{10} and $PM_{2.5}$ emissions were added to exhaust and brake and tire wear PM_{10} and $PM_{2.5}$ emissions to present total vehicle-related PM_{10} and $PM_{2.5}$ emissions.

Earthwork and Material Handling Activities

Fugitive PM_{10} and $PM_{2.5}$ emissions associated with earthwork and material handling activities were estimated based on equations and factors included in CalEEMod. Earthwork would be relatively minimal and would primarily occur at the NHC Chlorination Station. It is assumed that the particulate emissions from the earthwork activities would be controlled by watering of the active dust areas up to two times per day, depending on weather conditions, per SCAQMD Rule 403. Accordingly, emission factors for controlled sources were used for emission estimates.

Estimated Maximum Daily Emissions

Estimated maximum daily construction criteria air pollutant emissions from all on-site and off-site emission sources at all Project Sites is provided in Table 3.3-2 for each year of construction.

Table 3.3-2. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions

Year	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
2023	1.20	12.28	12.81	0.04	0.84	0.51
2024	1.23	11.35	14.91	0.03	0.59	0.50
2025	1.74	12.94	18.77	0.05	0.53	0.46
2026	0.05	0.40	0.67	0.00	0.02	0.02
Maximum	**1.74**	**12.94**	**18.77**	**0.05**	**0.84**	**0.51**
SCAQMD Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District.
PM_{10} and $PM_{2.5}$ represent total particulate matter, which includes exhaust, brake wear, tire wear, paved road dust, and fugitive dust from earthmoving and material handling. These estimates reflect control of fugitive dust required by SCAQMD Rule 403.
See Appendix A for complete results.

As shown in Table 3.3-2, Project construction would remain substantially below SCAQMD's daily thresholds. Therefore, construction impacts associated with criteria air pollutant emissions would be less than significant.

Operational Emissions

In regard to long-term operations at the Project Sites, future operation of the NHW Chlorination Station and the RT Chlorination Station would remain essentially the same as the existing operation. The NHC Chlorination Station and NHOU2IR groundwater treatment facility would not be permanently staffed, but may be visited daily to monitor operations and conduct routine inspections, maintenance, and required repairs. No additional permanent LADWP personnel beyond current operations would be necessary for these activities. For the NHC Chlorination Station, the OSHG would require a constant supply of food-grade salt as feed stock for the brine solution, which would require approximately one new truck trip every 2 weeks. For the NHOU2IR groundwater treatment facility, it is estimated that the following trucks would be required:

- Up to two tank trailer trucks would be needed approximately every month to refill the sulfuric acid tanks
- Up to three tank trailer trucks would be required monthly to refill the hydrogen peroxide tank
- Two trucks would be required annually to transport the WBA resin to tan approved disposal facility either within or outside California
- One truck round trip and two personnel for a week for UV lamp replacement every 20 months
- Three personnel and up to four truck trips per week for approximately 1 month to replace the carbon media in the LPGAC vessels

For the worst-case air pollutant scenario, it was assumed that all activities would overlap on the same day, which is highly unlikely. The emissions estimation methodology for on-road vehicle emissions detailed above for construction was also applied to operations, specifically for Year 2026. Detailed assumptions of estimated daily worker and haul truck trips are provided in Appendix A. Note that increased electricity use associated with operation of the Proposed Project would contribute indirectly to criteria air pollutant emissions; however, the emissions from electricity use are only quantified for GHGs in CalEEMod, since criteria pollutant emissions would occur at an off-site source of power generation. See Section 3.8, Greenhouse Gas Emissions, for further discussion about electricity use and associated emissions.

Table 3.3-3 summarizes the daily emissions of criteria pollutants that would be generated by new vehicular trips associated with the daily operations and intermittent maintenance of the Proposed Project and compares these emissions to the SCAQMD thresholds of significance.

Table 3.3-3. Estimated Maximum Daily Operation Criteria Air Pollutant Emissions

Emissions Source	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
Mobile	0.02	2.26	0.37	0.02	0.19	0.08
Total	**0.02**	**2.26**	**0.37**	**0.02**	**0.19**	**0.08**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District.
PM_{10} and $PM_{2.5}$ represent total particulate matter, which includes exhaust, brake wear, tire wear, and paved road dust.
See Appendix A for complete results.

As shown in Table 3.3-3, the minimal increase in emissions associated with daily operations and routine maintenance of the Proposed Project would remain substantially below SCAQMD criteria air pollutant thresholds. Therefore, impacts would be considered less than significant for Project operational emissions.

In considering cumulative impacts from a project, the analysis must specifically evaluate the project’s contribution to the cumulative increase in pollutants for which the SCAB is designated as nonattainment for the CAAQS and NAAQS. If a project’s emissions would exceed SCAQMD’s significance thresholds, it would be considered to have a cumulatively considerable contribution to nonattainment status in the SCAB. If a project does not exceed thresholds and is determined to have less-than-significant project-specific impacts, it may still contribute to a significant cumulative impact on air quality. The basis for analyzing a project’s cumulatively considerable contribution is if the project’s contribution accounts for a significant proportion of the cumulative total emissions (i.e., it represents a “cumulatively considerable contribution” to the cumulative air quality impact) and consistency with SCAQMD’s 2016 AQMP, which addresses cumulative emissions in the SCAB.

The SCAB has been designated as a federal nonattainment area for O_3 and $PM_{2.5}$ and a state nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. The nonattainment status is the result of cumulative emissions from various sources of air pollutants and their precursors within the SCAB, including motor vehicles, off-road equipment, and commercial and industrial facilities. Construction of the Proposed Project would generate VOC and NO_x emissions (which are precursors to O_3) and emissions of PM_{10} and $PM_{2.5}$. As indicated in Tables 3.3-2 and 3.3-3, Project-generated construction and operational emissions would not exceed SCAQMD’s emission-based significance thresholds for VOCs, NO_x, CO, SO_2, PM_{10}, or $PM_{2.5}$ and would represent a minimal proportion of the cumulative total emissions, and the impact would be less than significant.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less-Than-Significant Impact. Sensitive receptors are those individuals more susceptible to the effects of air pollution than the population at large. People most likely to be affected by air pollution include children, older people, and people with cardiovascular and chronic respiratory diseases. According to SCAQMD, sensitive receptors include residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD 1993). Residential land uses are located close to each of the Project Sites. Notably, the most intensive construction would occur at the NHC Chlorination Station, which has primarily multi-family residences located approximately 20 meters (approximately 65 feet) away from the property line (across Dehougne Street to the north, Morella Avenue to the east, and Hinds Avenue to the west).

Localized Significance Thresholds

SCAQMD recommends a localized significance threshold (LST) analysis to evaluate localized air quality impacts to sensitive receptors in the immediate vicinity of the Project Site as a result of construction activities. The impacts were analyzed using methods consistent with those in SCAQMD's Final LST Methodology (2009). The Project Sites are located within Source-Receptor Area (SRA) 7 (East San Fernando Valley). This analysis applies the SCAQMD LST values for a 1-acre site within SRA 7 with a receptor distance of 25 meters (82 feet) as the most conservative threshold available (i.e., the smaller the site size and the closer the receptor distance, the smaller the LST threshold value).

Project construction activities would result in temporary sources of on-site criteria air pollutant emissions associated with construction equipment exhaust and material handling activities. According to the Final LST Methodology, "off-site mobile emissions from the project should not be included in the emissions compared to the LSTs" (SCAQMD 2009). Trucks and worker trips associated with Project construction are not expected to cause substantial air quality impacts to sensitive receptors along off-site roadways, because emissions would be relatively brief in nature and would cease once the vehicles have passed through the main streets. Therefore, off-site emissions from trucks and worker vehicle trips are not included in the LST analysis. The maximum daily on-site construction emissions generated during construction of the Proposed Project in each construction year are presented in Table 3.3-4 and compared to the SCAQMD localized significance criteria for SRA 7 to determine whether Project-generated on-site construction emissions would result in potential LST impacts. Notably, the on-site emissions are also based on the combined construction at all the Project Sites, which represents a conservative assessment, because the sites are not directly adjacent to one another and would not expose the same sensitive receptors to pollutant concentrations.

Table 3.3-4. Localized Significance Thresholds Analysis for the Project

Year	NO_2	CO	PM_{10}	$PM_{2.5}$
	Pounds per Day (On Site) [a]			
2023	10.54	11.54	0.70	0.45
2024	10.66	13.08	0.50	0.47
2025	12.46	17.62	0.47	0.43
2026	0.39	0.57	0.02	0.02
Maximum Daily On-Site Emissions	**12.46**	**17.62**	**0.70**	**0.47**
SCAQMD LST Criteria	*80*	*498*	*4*	*3*
Threshold Exceeded?	**No**	**No**	**No**	**No**

Source: SCAQMD 2009.
Notes: LST = localized significance threshold; NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter.
See Appendix A for complete results. Columns may not sum precisely due to rounding.
These estimates reflect control of fugitive dust required by Rule 403 and represent the worst-case operating scenario during construction.
[a] For construction, LSTs were determined based on the values for a 1-acre disturbed area at a distance of 25 meters (82 feet) from the nearest sensitive receptor in SRA 7 (East San Fernando Valley). Although emissions would be generated by equipment operating at multiple construction sites, the emissions were summed to show a worst-case exposure scenario.

As shown in Table 3.3-4, the Project LST would not exceed the established significance thresholds; therefore, it would result in a less-than-significant localized impact to sensitive receptors.

CO Hotspots

Traffic-congested roadways and intersections have the potential to generate localized high levels of CO. Localized areas where ambient concentrations exceed federal and/or state standards for CO are termed CO "hotspots." CO transport is extremely limited and disperses rapidly with distance from the source. However, under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthy levels, affecting sensitive receptors. Typically, high CO concentrations are associated with severely congested intersections operating at an unacceptable level of service. Projects contributing to adverse traffic impacts may result in the formation of a CO hotspot. Additional analysis of CO hotspot impacts would be conducted if a project would result in a significant impact or contribute to an adverse traffic impact at a signalized intersection that would potentially subject sensitive receptors to CO hotspots.

The Code of Federal Regulations, Title 40, Section 93.123(c)(5), Procedures for Determining Localized CO, PM_{10}, and $PM_{2.5}$ Concentrations (hot-spot analysis), states that "CO, PM_{10}, and $PM_{2.5}$ hot-spot analyses are not required to consider construction-related activities, which cause temporary increases in emissions. Each site which is affected by construction-related activities shall be considered separately, using established 'Guideline' methods. Temporary increases are defined as those which occur only during the construction phase and last five years or less at any individual site" (40 CFR, Section 93.123[c][5]). Project construction would involve on-road vehicle trips from trucks and workers during construction, and construction activities would last approximately 33 months (2.75 years); therefore, they are considered temporary. As a result, the proposed construction activities would not require a project-level construction hotspot analysis. Additionally, since the Proposed Project would result in minimal operational vehicular trips associated with routine maintenance, an operational CO hotspot evaluation is not required.

Accordingly, the Proposed Project would not generate traffic that would contribute to potential adverse traffic impacts that may result in the formation of CO hotspots. In addition, due to continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SCAB is steadily decreasing. Based on these considerations, the Proposed Project would result in a less-than-significant impact to air quality with regard to potential CO hotspots.

Toxic Air Contaminants

Toxic air contaminants (TACs) are defined as substances that may cause or contribute to an increase in deaths or in serious illness, or that may pose a present or potential hazard to human health. As discussed under the LST analysis, the nearest sensitive receptors to the Project Sites are residences located approximately 20 meters (65 feet) from the proposed construction area. Health effects from carcinogenic air toxics are usually described in terms of cancer risk. SCAQMD recommends an incremental cancer risk threshold of 10 in 1 million. "Incremental cancer risk" is the net increased likelihood that a person continuously exposed to concentrations of TACs resulting from a project over a 9-, 30-, and 70-year exposure period will contract cancer based on the use of standard Office of Environmental Health Hazard Assessment risk-assessment methodology (OEHHA 2015). In addition, some TACs have non-carcinogenic effects. SCAQMD recommends a Hazard Index of 1 or more for acute (short-term) and chronic (long-term) effects.[4] TACs that would potentially be emitted during construction activities associated with development of the Proposed Project would be diesel particulate matter.

Diesel particulate matter emissions would be emitted from heavy equipment operations and heavy-duty trucks. Heavy-duty construction equipment is subject to a CARB Airborne Toxics

---

4 Non-cancer adverse health risks are measured against a hazard index, which is defined as the ratio of the predicted incremental exposure concentrations of the various non-carcinogens from the project to published reference exposure levels that can cause adverse health effects.

Control Measure for in-use diesel construction equipment to reduce diesel particulate emissions. As described for the LST analysis, PM_{10} (representative of diesel particulate matter) exposure would be minimal. According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 30-year exposure period for the maximally exposed individual resident; however, such assessments should be limited to the period/duration of activities associated with a project. Thus, the duration of the proposed construction activities would constitute only a small percentage of the total 30-year exposure period. The construction period for the Proposed Project would total approximately 2.75 years, after which construction-related TAC emissions would cease. Due to this relatively short period of exposure and minimal particulate emissions at the dispersed Project Sites, TACs generated during construction would not result in concentrations causing significant health risks.

Operation of the Proposed Project would not result in any non-permitted direct emissions (e.g., those from a point source such as diesel generators) or result in a substantial increase in diesel vehicles (e.g., delivery trucks) over existing baseline conditions. The typical operational on-road delivery trucks would be associated with routine inspection and maintenance activities at the Project Sites, which would occur infrequently.

Overall, the Proposed Project would not result in substantial exposure to TACs for sensitive receptors in the vicinity of the Project Sites, and impacts would be less than significant.

Health Impacts of Criteria Air Pollutants

Construction of the Proposed Project would generate criteria air pollutant emissions; however, the Project would not exceed the SCAQMD mass-emission thresholds.

The SCAB is designated as nonattainment for O_3 for the NAAQS and CAAQS. Thus, existing O_3 levels in the SCAB are at unhealthy levels during certain periods. The health effects associated with O_3 are generally associated with reduced lung function. Because the Proposed Project would not involve construction and operational activities that would result in O_3 precursor emissions (VOC or NO_x emissions) that would exceed the SCAQMD thresholds, as shown in Tables 3.3-2 and 3.3-3, the Project is not anticipated to substantially contribute to regional O_3 concentrations and its associated health impacts.

In addition to O_3, NO_x emissions contribute to potential exceedances of the NAAQS and CAAQS for NO_2 (since NO_2 is a constituent of NO_x). Exposure to NO_2 and NO_x can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections. Project construction and operations would not exceed the SCAQMD NO_x threshold, as shown in

Tables 3.3-2 and 3.3-3, and existing ambient NO_2 concentrations are below the NAAQS and CAAQS. Thus, Project construction and operations are not expected to result in exceedances of the NO_2 standards or contribute to associated health effects.

CO tends to be a localized impact associated with congested intersections. In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions. CO hotspots were discussed previously as a less-than-significant impact. Thus, the Proposed Project's CO emissions would not contribute to the health effects associated with this pollutant.

The SCAB is designated as nonattainment for PM_{10} under the CAAQS and nonattainment for $PM_{2.5}$ under the NAAQS and CAAQS. Particulate matter contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Particulate matter exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing. The Proposed Project would not generate emissions of PM_{10} or $PM_{2.5}$ that would exceed SCAQMD's thresholds. Accordingly, the Proposed Project's PM_{10} and $PM_{2.5}$ emissions are not expected to cause any increase in related regional health effects for this pollutant.

In summary, the Proposed Project would not result in a potentially significant contribution to regional concentrations of non-attainment pollutants, and would not result in a significant contribution to the adverse health impacts associated with those pollutants. Impacts would be less than significant.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less-Than-Significant Impact. The occurrence and severity of potential odor impacts depend on numerous factors. The nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receiving location each contribute to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying, cause distress among the public, and generate citizen complaints.

Odors would be potentially generated from vehicles and equipment exhaust emissions during construction of the Proposed Project. Odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment. Such odors are temporary, dissipate relatively rapidly with distance, and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, impacts associated with odors during construction would be considered less than significant.

Land uses and industrial operations typically associated with odor complaints include agricultural uses, wastewater treatment plants, food-processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. Because the Proposed Project involve such uses and would not change the general type of operations occurring at the Project Sites, the Project would not result in the creation of a land use that is commonly associated with odors. Therefore, Project operations would result in an odor impact that would be less than significant.

References

OEHHA (Office of Environmental Health Hazard Assessment). 2015. *Air Toxics Hot Spots Program. Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments*. February 2015. Accessed January 2019. http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf.

SCAG (Southern California Association of Governments). 2016. *2016–2040 Regional Transportation Plan/Sustainable Communities Strategy*. Adopted April 7, 2016. Accessed January 2019. http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx.

SCAQMD (South Coast Air Quality Management District). 1993. *CEQA Air Quality Handbook*. Accessed January 2019. http://www.aqmd.gov/home/rules-compliance/ceqa /air-quality-analysis-handbook/ceqa-air-quality-handbook-(1993).

SCAQMD. 2009. *Final Localized Significance Threshold Methodology*. July 2009. Accessed January 2019. http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/ final-lst-methodology-document.pdf?sfvrsn=2.

SCAQMD. 2017. *Final 2016 Air Quality Management Plan*. March 16, 2017. Accessed January 2019. http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/ 2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.pdf?sfvrsn=15.

SCAQMD. 2019. "SCAQMD Air Quality Significance Thresholds." Originally published in CEQA Air Quality Handbook, Table A9-11-A. Revised April 2019. Accessed January 2019. http://www.aqmd.gov/ docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2.

3.4 Biological Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and 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 state or federally protected wetlands (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?	☐	☐	☐	☒

The following analysis is based on an assessment of biological resources that included a review of available, relevant literature and a reconnaissance-level site survey. The presence of biological resources and the potential for impacts to these resources to occur during the Proposed Project were evaluated in an area that included the Project Sites and a 300-foot buffer area surrounding the Project Sites. This area is referred to in the discussion below as the “biological resources study area” or “study area.”

The study area is located within the Van Nuys U.S. Geological Survey 7.5-minute quadrangle. A California Natural Diversity Database (CNDDB) and California Native Plant Society Inventory of Rare and Endangered Plants query were conducted for the Van Nuys quadrangle and the surrounding eight quadrangles (San Fernando, Sunland, Burbank, Beverly Hills, Hollywood, Topanga, Canoga Park, and Oat Mountain) (CDFW 2022; CNPS 2022), a land area of approximately 550 square miles. The U.S. Fish and Wildlife Service's Information for Planning and Conservation (IPaC) project planning tool was queried to identify federally listed species that may occur in the study area (USFWS 2022). The U.S. Geological Survey's National Hydrography Dataset of aquatic resources was also reviewed, as well as other in-house documentation and geographic information systems (GIS) data for locations of special-status biological and aquatic resources. The results of the database queries are provided in Appendix B, Biological Resources Database Results, of this IS/MND. The CNDDB query results identified 40 special-status plant species, 38 special-status wildlife species, and 8 special-status vegetation communities within the nine quadrangles. No special-status species have been documented to occur in the study area (CDFW 2022).

A site visit was conducted on January 10, 2022, between 3:00 p.m. and 5:30 p.m., during which land covers and vegetation communities were confirmed, and an inventory of plant and wildlife species detected by sight, calls, tracks, scat, or other sign was compiled. With clear skies, little to no wind, and temperatures ranging from 68°F to 72°F, survey conditions were suitable for determining potential biological constraints and viewing wildlife species.

The study area is located in the southeast San Fernando Valley within the highly urbanized North Hollywood community of the City of Los Angeles. The Project Sites are bordered by residential or industrial development (Figures 1 through 4). The study area is characterized by developed, non-natural land covers with pockets of ruderal vegetation and scattered ornamental trees. The majority of the plants observed in the study area were non-native species, including Brazilian pepper tree (*Schinus terebinthifolius*), Japanese cheesewood (*Pittosporum tobira*), loquat (*Eriobotrya japonica*), and southern magnolia (*Magnolia grandiflora*). Four wildlife species (all avian) were detected in the study area during the site visit: yellow-rumped warbler (*Setophaga coronata*), house sparrow (*Passer domesticus*), northern mockingbird (*Mimus polyglottos*), and common raven (*Corvus corax*). No amphibian, reptile, invertebrate, mammal, or fish species were observed within the study area.

a) Would the project 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?

Less-Than-Significant Impact. No special-status plant or wildlife species were detected within the biological resources study area during the site visit, and no records for special-status plant or wildlife species are present in the study area.

According to the CNDDB (CDFW 2022), two special-status plant species have been documented within 1 mile of the study area: slender-horned spineflower (*Dodecahema leptoceras*; federally endangered, state endangered, California Rare Plant Rank 1B.1) and San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*; federally proposed as threatened, state endangered, California Rare Plant Rank 1B.1). Slender-horned spineflower is an annual herb that blooms between April and June, and is typically associated with sandy soils in chaparral, cismontane woodland, and coastal scrub habitats. Slender-horned spineflower was documented approximately 1 mile northeast of the study area and is presumed extirpated based on the development in the area since its last collection in 1906. San Fernando Valley spineflower is an annual herb that blooms between April and July and occurs in sandy coastal scrub and grassland habitats. San Fernando Valley spineflower was documented approximately 1 mile south of the study area (likely before 1906) and is presumed extirpated from the area due to development. In addition to both species likely being extirpated from the area, the biological resources study area lacks suitable habitat for both of these species. Therefore, special-status plant species are not expected to occur in the study area, and implementation of the Proposed Project is not anticipated to result in impacts to special-status plant species.

According to the CNDDB (CDFW 2022), two special-status wildlife species have been documented within 1 mile of the study area: coastal California gnatcatcher (*Polioptila californica californica*; federally threatened, state species of special concern) and Los Angeles pocket mouse (*Perognathus longimembris brevinasus*; state species of special concern). One record for coastal California gnatcatcher occurs approximately 1 mile east of the study area and dates back to 1901 (CDFW 2022). Coastal California gnatcatcher is a year-round resident of scrub-dominated plant communities from Southern California south into Baja California, Mexico. The survey area lacks suitable coastal scrub habitat to support this species; thus, coastal California gnatcatcher is not expected to occur in the study area. Los Angeles pocket mouse occurs in lower-elevation grassland, alluvial sage scrub, and coastal scrub habitats in the coastal basins of Southern California. The survey area lacks suitable grassland and scrub habitats to support this species; therefore, Los Angeles pocket mouse is not expected to occur in the study area.

No bat sign (guano or urine staining) was observed on the existing structures in the study area, and no foraging bats were observed during the site visit. Given the urban setting in which the study area occurs and the lack of native habitats within the study area, special-status wildlife species are not expected to occur in the study area, and implementation of the Proposed Project is not anticipated to result in impacts to special-status wildlife species.

Trees, shrubs, and buildings in the study area could provide nesting habitat for common birds and raptors protected under the Migratory Bird Treaty Act (16 USC 703-712) and California Fish and Game Code Sections 3503, 3503.5, and 3513. Individual adult birds and raptors are unlikely to be directly killed or injured during Project implementation because they are highly mobile and would likely leave the area during construction. There would be no tree or building removal at the Project Sites; therefore, direct impacts to nesting birds would not be expected to occur. Also, any birds nesting in the areas surrounding the Project Sites are likely adapted to high levels of disturbance due to the urbanized environment and ongoing construction activities already occurring in the vicinity of the Project Sites. However, although it is unlikely, nesting activities in the area immediately surrounding the Project Sites could be disrupted by Project-related activities (e.g., construction-related noise) occurring during the nesting season, which could cause nest abandonment or reduced reproductive success. Therefore, BMP-1, which requires focused avian surveys for construction occurring between February 15 and August 31, as outlined below, would be employed during construction of the Proposed Project to avoid Project-related impacts to nesting birds, including raptors.

BMP-1 To the extent possible, ground-disturbing activities shall occur outside of the migratory nesting bird season (typically February 15 through August 31). Should Project activities occur during the migratory bird nesting season, a pre-construction nesting bird survey shall be conducted by a qualified biologist within 3 days prior to the start of construction activities at each Project Site to determine whether active nests are present within areas in or adjacent to the construction zone. Surveys shall be conducted in all areas of suitable nesting habitat within up to 500 feet of Project activities, with the survey area to be determined by the qualified biologist. All nests found shall be recorded on construction plans.

In the event an active nest is detected, a qualified biologist shall monitor the nest to determine if a nest avoidance buffer zone is necessary to restrict construction activities in proximity to the nest to protect the nest from failing. Any buffer zone, within which construction activities may not occur, shall be established in coordination with the qualified biologist, who shall take into account existing baseline conditions (e.g., topography, buffering buildings or other structures). In addition, observed avian response to ambient conditions (e.g., existing traffic noise and human activity) shall factor into the requirement for and size of a nest avoidance buffer.

The qualified biologist shall monitor all active nests, including those with and without an established buffer, at least once per week to determine whether birds are being disturbed. If signs of disturbance or stress are observed, the qualified biologist shall implement adaptive measures to reduce disturbance. These measures could include establishing or increasing buffer distances, or placing visual screens or sound dampening structures between the nest and construction activity until fledging is confirmed. The qualified biologist shall monitor each active nest until they determine that nestlings have fledged and dispersed, or the nest is no longer active.

Should an active nest of any federally or state-listed bird species be detected during pre-construction surveys or subsequent construction monitoring, construction activity in the immediate area shall not commence or shall cease if already underway, and the applicable federal and/or state agency (U.S. Fish and Wildlife Service, California Department of Fish and Wildlife) shall be notified if the federally or state-listed bird species may be impacted. Work in other areas of the Project Site(s) that would not disturb the active nest, as determined by a qualified biologist, may continue until the active nest has been evaluated.

The implementation of BMP-1 would ensure that the impact to nesting birds protected under the Migratory Bird Treaty Act would be less than significant.

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

No Impact. No riparian habitat or other sensitive vegetation communities have been identified in the study area; therefore, the Proposed Project would not affect any such habitats. No impact would occur.

c) Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No Impact. No jurisdictional wetlands or non-wetland waters occur in the study area. Therefore, there would be no direct and/or indirect impacts to jurisdictional waters.

d) Would the project 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?

No Impact. The study area is not recognized as a wildlife corridor by South Coast Wildlands (2008) or the County of Los Angeles (County of Los Angeles 2014). The Project Sites and surrounding areas are largely developed and do not provide a suitable connection to open space areas. Several local and regional roadways traverse the immediate study area and surrounding vicinity. These roadways, along with the extensive development and the absence of open space connectivity, create a highly fragmented, noncontiguous landscape that is not conducive to wildlife movement. Additionally, the study area lacks native habitats and water sources that support native migratory fish and wildlife nursery habitat. Furthermore, the long-term use of the Project Sites would remain unchanged after construction. Therefore, the Proposed Project would not 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; no impact would occur.

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

No Impact. The City of Los Angeles Protected Tree Ordinance, as modified by Ordinance 186873, provides guidelines for the preservation of Southern California indigenous tree and shrub species measuring 4 inches or more in cumulative diameter, as measured at 4.5 feet above the ground level at the base of the tree or shrub (City of Los Angeles 2020). Trees protected under this ordinance include all oak trees indigenous to California (excluding the scrub oak *Quercus berberidifolia*), Southern California black walnut (*Juglans californica*), California sycamore (*Platanus racemosa*), and California bay (*Umbellularia californica*). Shrubs protected under this ordinance include Mexican elderberry (*Sambucus mexicana*) and toyon (*Heteromeles arbutifolia*). Several coast live oak (*Quercus agrifolia*) trees were observed along the streets surrounding the Project Sites; however, no City-protected trees occur on the Project Sites, and the Proposed Project would not affect City-protected trees present in the surrounding area. Therefore, the Proposed Project would not conflict with the City's Protected Tree Ordinance. No impact would occur.

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

No Impact. The North Hollywood–Valley Village Community Plan does not designate any portions of the Community Plan area as being within a habitat conservation plan (City of Los Angeles 1996). Furthermore, the Project Sites are not within any of the regional conservation plans designated by the state (CDFW 2019). Therefore, the Proposed Project would not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. No impact would occur.

References

CDFW (California Department of Fish and Wildlife). 2019. *California Natural Community Conservation Plans*. April 2019. Accessed January 2022. https://www.wildlife.ca.gov/Conservation/Planning/NCCP.

CDFW. 2022. California Natural Diversity Database (CNDDB). RareFind 5.0 (Commercial Version). Sacramento, California: CDFW, Biogeographic Data Branch. Accessed January 2022. https://nrmsecure.dfg.ca.gov/cnddb/Default.aspx.

City of Los Angeles. 1996. *North Hollywood-Valley Village Community Plan*. Updated May 14, 1996. Updated Accessed January 2022. https://planning.lacity.org/plans-policies/community-plan-area/north-hollywood-valley-village.

City of Los Angeles. 2020. City of Los Angeles, Ordinance 186873; LAMC (Los Angeles Municipal Code), Section 46: Protected Tree and Shrub Regulations. Approved December 28, 2020. Effective February 4, 2021. Accessed January 2022. https://codelibrary.amlegal.com/codes/los_angeles/latest/lamc/0-0-0-132239.

CNPS. 2022. Inventory of Rare and Endangered Plants (online edition, v8-03). Accessed January 2022. www.rareplants.cnps.org.

County of Los Angeles. 2014. Regional Habitat Linkages, Figure 9.2. County of Los Angeles, Department of Regional Planning. Accessed January 2022. http://planning.lacounty.gov/assets/upl/project/gp_2035_2014-FIG_9-2_Regional_Wildlife_Linkages.pdf.

South Coast Wildlands. 2008. *South Coast Missing Linkages: A Wildland Network for the South Coast Region.* Accessed online January 2022. http://www.scwildlands.org/reports/SCMLRegionalReport.pdf.

USFWS (U.S. Fish and Wildlife Service). 2022. IPaC: Information for Planning and Consultation (online edition). Accessed January 2022. USFWS, Environmental Conservation Online System. http://ecos.fws.gov/ipac/.

3.5 Cultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

Potential impacts related to cultural resources resulting from implementation of the Proposed Project were determined based on the results presented in the Cultural Resources Assessment Report prepared for the Proposed Project, which is included as Appendix C to this IS/MND. Proposed Project improvements at the NHW Chlorination Station do not include any ground disturbance and would only modify an existing facility constructed in 2014. Therefore, the NHW Project Site is not analyzed in the Cultural Resources Assessment Report nor addressed is this section for the potential impacts to cultural resources.

a) Would the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

No Impact. On March 8, 2022, an in-person California Historical Resources Information System (CHRIS) records search was conducted at the South Central Coastal Information Center, located on the campus of the California State University, Fullerton. The records search included any previously recorded cultural resources and investigations within a 0.5-mile radius of the RT and NHC Project Sites. The CHRIS search also included a review of the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the California Points of Historical Interest list, the California Historical Landmarks list, the Archaeological Determinations of Eligibility list, and the California State Historic Resources Inventory list. The South Central Coastal Information Center records were reviewed to determine whether the implementation of the Proposed Project would have the potential to impact known or unknown cultural resources.

A resource is generally considered “historically significant” if the resource meets at least one of the four criteria for listing on the CRHR (California Public Resources Code Section 5024.1[a]). The CRHR is used as a guide by state and local agencies, private groups, and citizens to identify the state historical resources and to include which properties are to be protected, to the extent prudent and feasible, from substantial adverse change. The CRHR evaluation criteria are similar to the NRHP criteria but focus on resources of importance to California history and prehistory. For a property to be eligible for inclusion in the CRHR, it must meet one or more of the following criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of California history and cultural heritage;
2. It is associated with the lives of persons important in our past;
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. It has yielded, or may be likely to yield, important information in prehistory or history.

The CRHR may also include various other types of historical resources that meet the criteria for eligibility, including the following:

1. Individual historic resources
2. Resources that contribute to a historic district
3. Resources identified as significant in historic resource surveys
4. Resources with a significance rating of Category 3 through Category 5 in the State Inventory (Categories 3 and 4 refer to potential eligibility for the NRHP; Category 5 indicates a property with local significance)

Although the NRHP standard includes the evaluation of resources that are 50 years old or older, the California Office of Historic Preservation endorses recording and evaluating resources over 45 years of age to accommodate the 5-year lag in the planning process.

Previously Recorded Cultural Resources

The CHRIS records search indicates that only one cultural resource has been previously recorded within the same property as one of the Project Sites (the RT Chlorination Station). This resource consists of the NRHP-eligible San Fernando Valley Generating Plant (P-19-175325), also assigned California Historical Resources Inventory Number 097843. McAvoy (1994) recorded this built environment resource and evaluated the structure for historical significance. At the time of this evaluation, the structure stood at 11845 Vose Street, within Lankershim Yard, and consisted of a 36-foot-high building with Classical detailing. The front elevation included applied letters reading "Bureau of Water Work and Supply." According to McAvoy, the San Fernando Valley Generating Plant played an important role in supplying water to the San Fernando Valley, allowing the Valley to prosper. McAvoy determined that P-19-175325 appeared eligible for the NRHP under Criterion 1 for its association with the development of the City of Los Angeles' water system and under Criterion 3 as an example of Classically inspired industrial architecture.

A desktop survey of aerial images indicates that the San Fernando Valley Generating Plant has been razed since its initial recording in 1994. There are currently no extant buildings on the Lankershim Yard property that retain the characteristics of P-19-175325. The NRHP-eligible built environment resource has been demolished. The foundation for P-19-175325 remained after the demolition of the aboveground structure; however, the foundation was recently wholly or partially removed as part of the construction of the NHOU2IR facility at Lankershim Yard. The extent to which the P-19-175325 belowground structures remain could not be verified. However, the construction of the RT Chlorination Station does not include this area of Lankershim Yard.

No previously recorded historic-age archaeological resources are within 0.5 miles of the Project Sites.

Historical Aerial Photographs

A review of historical aerial photographs was conducted as part of the archival research effort. The results of this review identified a number of structures within the RT and NHC Project Site properties that dated to 50 years old or greater. The only remaining extant structure of this age is a rectangular building along the eastern perimeter of the Lankershim Yard property that was constructed prior to 1964. This structure is being adapted for use for the NHOU2IR facility currently under construction pursuant to orders from EPA under CERCLA and is not part of the construction associated with the Proposed Project. The Proposed Project does not involve any impact to this extant structure.

Based on the above assessment of historical resources in relation to the Project Sites, there would be no adverse change in the significance of a historical resource, and no impact would occur.

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

Less-Than-Significant Impact. Although no previously recorded archaeological resources were identified within or surrounding the Project Sites as a result of the CHRIS records search, the cultural resources assessment revealed that there is a potential for unknown historic-age buried archaeological resources to exist within the Project Sites. In relation to the NHC Project Site, geotechnical reports noted concrete and brick in two borings to depths of 18 feet below the surface, which suggests the potential for historic-era resources related to earlier development within the site; however, both of these borings occurred in the northwest corner of the site, where the multi-family residential property (constructed in 1948) was demolished in prior to 2016, suggesting that demolition debris may have infiltrated the borings. In relation to the RT Project Site, the Amtrak/Union Pacific Railroad (constructed in the early 1900s) abuts the northern boundary of Lankershim Yard, and according to McKenna (2010), areas surrounding railroad alignments within the San Fernando Valley are sensitive for the presence of historic-age archaeological deposits. However, Lankershim Yard has been extensively disturbed by past use, and the area of ground disturbance associated with the RT Chlorination Station site is relatively small (1,000 square feet) and approximately 500 feet from the railroad.

Although it is not expected to occur, there could be an inadvertent discovery of previously unrecorded archaeological resources during construction activities. Therefore, BMP-2 regarding cultural resources awareness training, as outlined below, would be employed during construction of the Proposed Project.

BMP-2 All field supervisors and construction workers shall participate in training on cultural resources awareness prior to the initiation of construction that involves ground-disturbing activities. The training shall include a description of the types of cultural resources (including tribal cultural resources and human remains) that could inadvertently be encountered during ground-disturbing activities, the sensitivity of the resources, the legal basis for protection of the resources, and the penalties for unauthorized collection of resources or knowingly damaging them. The training shall address the proper procedures in the event of an inadvertent discovery of a cultural resource, including the immediate halting of work in the area of the discovery, notification of appropriate individuals of the discovery, the establishment of appropriate protective buffer zones around the discovery, and the continued avoidance of the protected area until the resource has been evaluated by qualified individuals and an appropriate treatment plan has been developed and implemented. These procedures shall be documented in a cultural resources monitoring and mitigation plan (CRMMP) that shall establish, in the event of inadvertent discovery of cultural resources, monitoring procedures (including potential Native American monitors), notification procedures, key staff, and preliminary treatment measures for potential discoveries. The CRMMP shall be written to ensure compliance with appropriate state and federal laws. The training presentation and CRMMP shall be available to additional supervisory or construction personnel who may join after Project construction has begun.

In addition, should archaeological resources be discovered during ground-disturbing activities, the Proposed Project would be subject to California Public Resources Code Section 21083.2(i) regarding provisions related to the accidental discovery of archaeological resources. These provisions include immediately halting construction work in the vicinity of the find (within a 50-foot buffer) and LADWP retaining a qualified archaeologist meeting the Secretary of the Interior's standards to evaluate the significance of and determine appropriate treatment for the resource in accordance with the provisions of CEQA Guidelines Section 15064.5 and the National Historic Preservation Act. If the resource is determined to be potentially of Native American in origin, MM-TCR-1 would be required to mitigate potential impacts to a less-than-significant level (see Section 3.18, Tribal Cultural Resources, for the text of MM-TCR-1). If the archaeological resource is determined to be non-Native American in origin and is determined to be potentially significant, a treatment or avoidance plan shall be developed within 48 hours of the discovery. Work in the area may not resume until evaluation and treatment of the resource is completed or the resource is recovered and removed from the site. Construction activities may continue in other parts of the construction site while the evaluation and treatment of archaeological resources take place.

For non-Native American archaeological resources, compliance with California Public Resources Code Section 21083.2(i) as well as the implementation of BMP-2 would ensure that the impact to archaeological resources would be less than significant.

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

Less-Than-Significant Impact. Although it is not expected to occur, should human remains be discovered during ground-disturbing activities, the remains would be treated in accordance with all applicable regulations. In accordance with the provisions of the California Health and Safety Code Section 7050.5, in the event that human remains are discovered during Project construction, no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains would occur, and the Los Angeles County coroner would be notified. The coroner would provide recommendations concerning the human remains, as well as confirming whether the remains are Native American in origin, within two working days. If the remains and/or related resources, such as funerary objects, are determined to be of Native American origin, the coroner would contact the Native American Heritage Commission (NAHC) within 24 hours. In accordance with California Public Resources Code Section 5097.98, the NAHC would immediately notify the person it believes to be most likely descended from the deceased Native American. The most likely descendant would be given access to the site where the remains were discovered and may make recommendations for the treatment and disposition of the remains and related resources, as well as providing input regarding the potential for other remains to be present. Work at the discovery site may commence only after consultation with the most likely descendant and treatment of the remains and any associated resources have been concluded. While consultation and treatment are conducted, work may continue on other parts of the Project Site that do not have potential to contain additional human remains and/or related funerary items. Compliance with these existing regulations would ensure that the impact to human remains, including Native American remains, would be less than significant.

References

McAvoy, C.J. 1994. Department of Parks and Recreation Series 523 Site Record for P-19-175325. On file at the CHRIS South Central Coastal Information Center, California State University, Fullerton.

McKenna, J. 2010. *A Cultural Resources Overview and Preliminary Assessment of the Pacoima/Panorama City Redevelopment Plan Amendment/Expansion Project Area, Los Angeles County, California*. On file at the CHRIS South Central Coastal Information Center, California State University, Fullerton.

3.6 Energy

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☐	☒
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

No Impact. The project would not result in wasteful, inefficient, or unnecessary consumption of energy resources, as discussed below.

Construction

Electricity. Temporary electric power for as-necessary construction equipment would be provided by LADWP. The amount of electricity used during construction would be minimal because typical demand would be generated by electrically powered hand tools. The electricity used for construction activities would be temporary and minimal; therefore, Project construction would not result in wasteful, inefficient, or unnecessary consumption of electricity.

Natural Gas. Natural gas is not anticipated to be required during construction of the Project.

Petroleum. The primary energy consumed during construction would be associated with petroleum usage. Potential impacts were assessed for off-road equipment and on-road vehicle trips during construction, as provided by the air pollutant emissions estimates in Appendix A. Fuel consumption from construction equipment and vehicle trips was estimated by converting the total carbon dioxide (CO_2) emissions anticipated to be generated by the construction of the Proposed Project to gallons using conversion factors for CO_2 to gallons of gasoline or diesel. The conversion factor for gasoline is 8.78 kilograms per metric ton (MT) CO_2 per gallon, and the conversion factor for diesel is 10.21 kilograms per MT CO_2 per gallon (The Climate Registry 2021). Heavy-duty construction equipment and trucks are assumed to use diesel fuel. Worker vehicles are assumed to be gasoline fueled.

The estimated diesel fuel usage from construction equipment and trucks and estimated gasoline fuel usage from worker vehicles are shown in Table 3.6-1

Table 3.6-1. Project Construction Petroleum Demand

Phase	Off-Road Equipment (Diesel)	Trucks (Diesel)	Worker Vehicles (Gasoline)
	Gallons		
Construction	31,930.46	14,100.40	16,168.45
		Total Petroleum Consumed	**62,199.31**

Note: See Appendix A for details.

As shown in Table 3.6-1, the Project is estimated to consume approximately 62,199 gallons of petroleum during the construction phase over an approximately 2.75-year period.[5] Notably, the Project would be subject to CARB's In-Use Off-Road Diesel Vehicle Regulation, which applies to certain off-road diesel engines, vehicles, or equipment greater than 25 horsepower. The regulation (1) imposes limits on idling, requires a written idling policy, and requires a disclosure when selling vehicles; (2) requires all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System) and labeled; (3) restricts the adding of older vehicles into fleets starting on January 1, 2014; and (4) requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing verified diesel emission control strategies (i.e., exhaust retrofits). The fleet must either show that its fleet average index was less than or equal to the calculated fleet average target rate, or that the fleet has met the best achievable control technology (BACT) requirements. Because the Project would not be unusual as compared to overall local and regional demand for energy resources and would not involve characteristics that require equipment that would be less energy-efficient than at comparable construction sites in the region or state, Project construction would not result in wasteful, inefficient, or unnecessary consumption of petroleum.

Operations

Electricity. The operational phase of the Proposed Project would require electricity to power the chlorination stations and the NHOU2IR treatment facility. Table 3.6-2 presents the net increase in electricity demand for the Project as compared to the existing chlorination station operations.

Table 3.6-2. Annual Electricity Demand

Electricity	kWh/Year
Project	
NHW Chlorination Station	1,095,000
RT Chlorination Station	2,007,500
NHC Chlorination Station	3,962,075
NHOU2IR Treatment Facility (including well operations)	10,355,050
Total Project Electricity Demand	**17,419,625**
Existing	
NHW Chlorination Station	917,975
RT Chlorination Station	921,625

5 For context, in 2019, California consumed about 662 million barrels of oil (EIA 2022). There are 42 U.S. gallons in a barrel, so California consumes approximately 76.2 million gallons of petroleum per day, adding up to an annual consumption of 7.8 billion gallons of petroleum.

Table 3.6-2. Annual Electricity Demand

Electricity	kWh/Year
NHC Chlorination Station	0
NHOU2IR Treatment Facility	0
Total Existing Electricity Demand	**1,839,600**
Net Change (Project Minus Existing)	
Net Increase in Demand	**15,580,025**

Notes: kWh = kilowatt-hour; NHW = North Hollywood West; RT = Rinaldi-Toluca; NHC = North Hollywood Central; NHOU2IR = North Hollywood Operable Unit Second Interim Remedy.

According to these estimations, the Proposed Project would consume approximately 17,419,625 kWh per year. Under existing conditions, it is estimated that 1,839,600 kWh per year is used by the existing chlorination stations. Although electricity consumption associated with the Proposed Project would increase by approximately 15,580,025 kWh per year, the Proposed Project would help to restore the existing beneficial uses of the aquifer and facilitate extractions within the City's water rights. As a result, the Proposed Project would likely offset the import of water into Southern California, which would result in greater energy efficiency per gallon of water. The proposed chlorination stations would provide for the treatment of approximately 130 cfs of well water above the current treatment capacity of the stations (though within the historical capacity of the wellfields), which would equal approximately 30,668 million gallons per year. Part of this flow to the stations is enabled by the operation of the NHOU2IR facility. Based on the net increase in energy demand generated by the Project (15,580,025 kWh per year), approximately 508 kWh would be consumed per million gallons of water provided. In contrast, approximately 7,877 kWh of energy is required for every million gallons of water imported to Southern California (averaged for the State Water Project East and West Branch and the Colorado River Aqueduct) (CEC 2005). For these reasons, the electricity consumption of the Project would not be considered inefficient or wasteful, and there would be no impact.

Natural Gas. Natural gas consumption would not be required for Project operations.

Petroleum. During operations, fuel consumption resulting from the Project would involve the use of motor vehicles traveling to and from the Project Sites for routine inspection and intermittent maintenance activities. The same calculation methodology was used to determine fuel use for operations as for construction, described previously. Fuel estimates for the Project are provided in Table 3.6-3.

Table 3.6-3. Annual Operational Petroleum Demand

Scenario	Vehicle MT CO_2	Kg CO_2/ Gallon	Gallons
Gasoline	0.33	8.78	37.26
Diesel	12.45	10.21	1,219.15
		Total Project Petroleum Use	**1,256.40**

Sources: Appendix A; The Climate Registry 2021.
Notes: MT = metric ton; CO_2 = carbon dioxide; kg = kilogram.

As depicted in Table 3.6-3, the Project would consume approximately 1,256 gallons of petroleum per worst-case year during operation.

Over the lifetime of the Project, the fuel efficiency of the vehicles being used by the employees and trucks for the Project is expected to increase. As such, the amount of petroleum consumed as a result of vehicular trips to and from the Project Sites during routine inspection and maintenance activities would decrease over time. There are numerous regulations in place that require and encourage increased fuel efficiency. For example, CARB has adopted the Advanced Clean Cars and Advanced Clean Trucks programs to accelerate the market for zero-emission vehicles in both the passenger car and medium/heavy-duty truck sectors. As such, operation of the Project is expected to use decreasing amounts of petroleum over time, due to advances in fuel economy.

Although Project implementation would result in an increase in petroleum use during operation, the amount of petroleum use for a worst-case operational year would be minimal, and over time vehicles would use less petroleum due to advances in fuel economy. Given these considerations, the petroleum consumption associated with the Proposed Project would not be considered inefficient or wasteful, and no impact would occur.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact. As described in Chapter 2, Project Description, of this IS/MND, the Proposed Project would provide capability to safely and effectively disinfect water pumped from the RT Well Field, the NHW Well Field, and the western portion of the NHOU, all of which would be operated consistent with LADWP's historical use of its well fields to help meet current and projected demand for drinking water in the City of Los Angeles. This disinfection and treatment capability would help ensure the reliability and sustainability of the City's drinking water system by reducing dependence on imported water supplies, consistent with goals established in the 2020 LADWP Urban Water Management Plan. Shifting water production from importation to local supply would result in greater energy efficiency per gallon of water, as described in Section 3.6(a). For these reasons, the Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, no impact would occur.

References

CEC (California Energy Commission). 2005. *California's Water–Energy Relationship*. CEC-700-2005-011-SF. November 2005.

EIA (U.S. Energy Information Administration). 2022. "California State Profile and Energy Estimates – Table F16: Total Petroleum Consumption Estimates, 2019." Accessed March 2022. https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_use_pa.html&sid=US&sid=CA.

The Climate Registry. 2021. "Default Emission Factors." May 1, 2021. Accessed March 2022. https://www.theclimateregistry.org/wp-content/uploads/2021/05/2021-Default-Emission-Factor-Document.pdf?mc_cid=4b45d12237&mc_eid=5f138d1baa.

3.7 Geology and Soils

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
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?	☐	☐	☒	☐

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

a) Would the project 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.

No Impact. The Project Sites are not located within an Alquist-Priolo Earthquake Fault Zone and are not traversed by any known active fault. The Sierra Madre Fault Zone is located approximately 6 miles north of the Project Sites and the Hollywood Fault Zone is located approximately 7 miles south of the Project Sites (CDOC 2021). As such, fault rupture is not anticipated on the Project Sites and no impacts would occur.

ii) Strong seismic ground shaking?

Less-Than-Significant Impact. As with all areas in Southern California, the Project Sites are located in a seismically active region, within which there are numerous known earthquake faults. As previously discussed in Section 3.6(a)(i), there are known surface trace earthquake faults approximately 6 miles north and 7 miles south of the Project Sites. In addition, many other regional active faults are capable of producing severe seismically induced ground shaking at the sites. As a result, the Proposed Project could be exposed to strong seismically induced ground shaking.

Geotechnical reports completed for the RT and NHC Chlorination Station sites determined that both sites are suitable for the proposed improvements. The primary geotechnical considerations at the NHC Chlorination Station site are the loose surficial sandy soils and the potential generation of a perched water condition from the proposed infiltration devices (Diaz Yourman 2021a). The primary geotechnical considerations at the RT Chlorination Station site are an existing well located within the footprint of the proposed brine storage tanks and the presence of varying amounts of gravel encountered throughout the subsurface profile (Diaz Yourman 2021b). The geotechnical reports include recommendations such as excavation and replacement of the upper soils at both sites with compacted fill for mat foundation and spread footing and removal of the portion of Well No. 10 that is located within the zone of significant influence of the proposed foundation loads at the RT Chlorination Station site. Additionally, Project structures would be designed and constructed in accordance with the latest version of the California Building Code and the City Building Code relative to seismic criteria. This includes retrofitting the existing NHW and RT Chlorination Station buildings, which were constructed in 2014, to comply with current seismic codes.

Design and construction in accordance with the latest version of the California Building Code and the City Building Code based on the site-specific geotechnical surveys would provide a measure of safety for people and structures exposed to potential substantial adverse effects involving seismic-related ground shaking. As a result, neither people nor structures would be exposed to potentially substantial adverse effects, and impacts would be less than significant.

iii) Seismic-related ground failure, including liquefaction?

No Impact. The Project site has not been identified as being susceptible to liquefaction (California Department of Conservation 2021). Additionally, the geotechnical reports completed for the NHC and RT sites concluded that the Project sites are not likely subject to liquefaction (Diaz Yourman 2021a, 2021b). Project structures would be designed and constructed in accordance with the latest version of the California Building Code and the City of Los Angeles Building Code relative to seismic criteria, which provides a measure of safety for people and structures exposed to potential substantial adverse effects involving seismic-related ground shaking. As a result, impacts would be less than significant.

iv) Landslides?

No Impact. The Proposed Project sites and surrounding area is relatively flat and the site have not been mapped as a landslide hazard area (CDOC 2021). Therefore, people or structures on the site would not be exposed to landslide hazards, and no impacts would occur.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Less-Than-Significant Impact. Construction of the Proposed Project would result in ground surface disturbance during grading and excavation that could create the potential for erosion to occur. Because the Proposed Project would involve construction on an area greater than 1 acre, it would require compliance with the General Construction Activity NPDES Permit (Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ, NPDES No. CAS000002), which requires the preparation of and compliance with a SWPPP. The SWPPP must include erosion control measures such as covering exposed soil stockpiles, protecting the perimeter of the construction site with sediment barriers, and protecting storm drain inlets.

During operation, site conditions would be generally similar to existing conditions, with the exception of expanded impermeable areas at the NHC Chlorination Station where the Proposed Project components would be constructed. The presence of these areas would not increase soil erosion or the loss of topsoil on the site. Adherence to existing regulations requiring stormwater management and erosion control during construction and operations would ensure that soil erosion impacts would be less than significant.

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

Less-Than-Significant Impact. As described in preceding discussions in this section, the Project Sites are not located on a geologic unit or on soils identified as being susceptible to landslides or liquefaction or that are otherwise unstable. Project structures would be designed and constructed in accordance with the latest version of the California Building Code and the Los Angeles Building Code relative to seismic and other geotechnical criteria, which provides a measure of safety for people and structures exposed to potential substantial adverse effects involving various forms of ground failure. As a result, impacts would be less than significant.

d) Would the project 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?

No Impact. Soil expansion occurs in clay-rich soil as a result of repeated cycles of wetting and drying. The soils expand when wet and contract when dry. Soil expansion can result in cracking and distress of structural foundations and supports. The geotechnical report completed for the NHC Chlorination Station site indicates that the subsurface profile generally consists of very loose to medium-dense, coarse-grained soils (i.e., sands) with varying amounts of fines (i.e., silts) to an approximate depth of 703 feet below ground surface (bgs). Clay-rich soils are not present on the Project Site (Diaz Yourman 2021a). The geotechnical report completed for the RT Chlorination Station site indicates that the subsurface profile generally consists of loose to medium-dense, coarse-grained soils (i.e., sands) with varying amounts of fines (i.e., silts and clays) to an approximate depth of 719 feet bgs (Diaz Yourman 2021a). Neither site is identified as having expansive soils. Therefore, no impact would occur.

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Impact. The Proposed Project does not include installation of septic tanks or alternative wastewater disposal systems. If necessary during Project construction, sanitary waste would be handled by temporary portable chemical toilets. The waste from temporary facilities would be removed by a private contractor and disposed of an approved off-site location. As such, no impacts would occur relative to the ability of on-site soils to support septic tanks or alternative wastewater disposal systems.

f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less-Than-Significant Impact. The Project Sites are located within the central Transverse Ranges Geomorphic Province, which extends from Point Conception in the west to the San Bernardino Mountains in the east. The province includes the San Gabriel, Santa Monica, and Santa Ynez Mountains and the offshore San Miguel, Santa Rosa, Santa Cruz, and Anacapa Islands (Norris and Webb 1990; CGS 2002).

According to surficial geological mapping by Dibblee and Ehrenspeck (1991) at a scale of 1:24,000, the Project Sites are underlain by Holocene (<11,700 years ago) (Cohen et al. 2022) alluvial deposits (map unit Qa). Holocene alluvial deposits are considered to have low paleontological sensitivity on the surface, with increasing sensitivity at depth, where the sediments are old enough to preserve fossils.

A paleontological records search request was submitted to the Natural History Museum of Los Angeles County (LACM) of the Project Sites and the surrounding vicinity on April 4, 2022, and the results were received on April 9, 2022. The LACM reported no vertebrate fossil localities from within the Project Sites. The LACM reported fossil localities from Pleistocene deposits in the southeast San Fernando Valley, which are anticipated at depth within the Project Sites. The closest locality (LACM VP [vertebrate paleontology]) 6970), which was discovered during excavations for a Metro Rail tunnel near Lankershim Boulevard and Bloomfield Street (approximately 3.5 miles southeast of the NHC Project Site), produced fossil ground sloth (*Glossotherium*), camel (*Camelops*), and bison (*Bison*) from 60 to 80 feet bgs in older alluvial deposits (LACM 2022). Also discovered during a Metro Rail tunnel excavation, LACM 6385 produced fossil fish (Osteichthyes), frogs (Anura), and rodents (Rodentia) from early Holocene (11,700–8,200 years ago) (Cohen et al. 2022) younger alluvial deposits at a depth of 40 to 50 feet bgs near LACM 6970. A fossil horse (*Equus*) (LACM VP 1146) was recovered within Pleistocene deposits from 160 to 170 feet bgs in Sun Valley. LACM VP 3263 and 6208 yielded horse (Equidae) and bison (*Bison*) from a depth of 11 to 20 feet bgs during sewer excavations in Van Nuys. Finally, fossil locality LACM VP 3822 produced a fossil bison (*Bison*) from 75 to 100 feet bgs within Pleistocene lacustrine deposits in Van Nuys (LACM 2022).

Review of the geotechnical reports for the NHC Project Site (Diaz Yourman 2021a) and RT Project Site (Diaz Yourman 2021b) indicated the sites are underlain by almost 3 feet of artificial fill, which in turn is underlain by loosely consolidated alluvium.

No paleontological resources were identified within the Project Sites as a result of the institutional records search and desktop geological and paleontological review, and the Project Sites are not anticipated to be underlain by unique geologic features. The Holocene alluvial deposits mapped within the Project Sites are too young on the surface and at shallow depths below ground surface to contain significant paleontological resources, and are considered to have low paleontological sensitivity. Underlying Pleistocene alluvial, fluvial, or lacustrine deposits have produced significant paleontological resources in the area and are considered to have high paleontological sensitivity. Artificial fill has no paleontological sensitivity. Given the shallow excavations proposed for the Project (<10 feet bgs), there is a low potential for planned construction activities to destroy a unique paleontological resource or site.

While it is not anticipated that paleontological resources would be encountered during Project construction, in the event previously unknown paleontological resources are encountered, the construction manager would halt construction activities in the immediate area in accordance with CEQA Guidelines Section 15064.5(f). LADWP would retain a qualified paleontologist to make an immediate evaluation of the significance and determine the appropriate treatment of the resource. Construction activities may continue in other parts of the construction site while evaluation and any necessary treatment of paleontological resources take place. Compliance with these existing policies would ensure that the impact to paleontological resources would be less than significant.

References

CDOC (California Department of Conservation). 2021. EQ Zapp: California Earthquake Hazards Zone Application [Web Map Application]. CDOC, California Geological Survey. Accessed March 30, 2022. https://maps.conservation.ca.gov/cgs/EQZApp/app/.

CGS (California Geological Survey). 2002. *California Geomorphic Provinces*: Note 36.

Cohen, K.M., S.C. Finney, P.L. Gibbard, and J.-X. Fan. 2022. The ICS International Chronostratigraphic Chart. Episodes 36: 199–-204. 2013; updated. https://stratigraphy.org/ICSchart/ChronostratChart2022-02.jpg.

Diaz Yourman (Diaz Yourman and Associates). 2021a. Geotechnical Report North Hollywood Central Chlorination Station Replacement, 6838 Hinds Avenue, North Hollywood, California.

Diaz Yourman. 2021b. Geotechnical Report Rinaldi Toluca OSHG Station Upgrades, Los Angeles California.

Dibblee, T.W., and H.E. Ehrenspeck (ed.). 1991. Geologic map of the San Fernando and Van Nuys (north 1/2) quadrangles, Los Angeles County, California: Dibblee Geological Foundation, Dibblee Foundation Map DF-33, scale 1:24,000.

LACM. 2022. "Paleontological Resources for the North Hollywood Chlorination Station Project (Dudek PN:10649.99)." Records Search Results Letter from the Natural History Museum of Los Angeles County, Los Angeles, California.

Norris, R.M., and R.W. Webb. 1990. *Geology of California* (2nd edition). New York: John Wiley & Sons.

3.8 Greenhouse Gas Emissions

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐

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

Less-Than-Significant Impact. Climate change refers to any significant change in measures of climate, such as temperature, precipitation, or wind patterns, lasting for an extended period of time (decades or longer). Earth's temperature depends on the balance between energy entering and leaving the planet's system, and many factors (natural and human) can cause changes in Earth's energy balance. The greenhouse effect is the trapping and buildup of heat in the atmosphere near Earth's surface (the troposphere). The greenhouse effect is a natural process that contributes to regulating Earth's temperature, and it creates a livable environment on Earth. Human activities that emit additional GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing Earth's surface temperature to rise. Global climate change is a cumulative impact; a project contributes to this impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs. Thus, GHG impacts are recognized exclusively as cumulative impacts (CAPCOA 2008).

A GHG is any gas that absorbs infrared radiation in the atmosphere; in other words, GHGs trap heat in the atmosphere. As defined in California Health and Safety Code Section 38505(g), for purposes of administering many of the state's primary GHG emissions reduction programs, GHGs include CO_2, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3) (see also

CEQA Guidelines Section 15364.5).[6] The three GHGs evaluated herein are CO_2, CH_4, and N_2O, because these gases would be emitted during Project construction and/or operations.

The Intergovernmental Panel on Climate Change developed the global warming potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The reference gas used is CO_2; therefore, GWP-weighted emissions are measured in metric tons of CO_2 equivalent (MT CO_2e). Consistent with CalEEMod, this GHG emissions analysis assumed that the GWP for CH_4 is 25 (i.e., emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2), and the GWP for N_2O is 298, based on the Intergovernmental Panel on Climate Change's Fourth Assessment Report (IPCC 2007).

As discussed in Section 3.3, Air Quality, the Project Sites are located within the jurisdictional boundaries of SCAQMD. In October 2008, SCAQMD proposed recommended numeric CEQA significance thresholds for GHG emissions for lead agencies to use in assessing GHG impacts of residential and commercial development projects, as presented in its Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold (SCAQMD 2008a). This document, which builds on the previous guidance prepared by the California Air Pollution Control Officers Association (CAPCOA 2008), explored various approaches for establishing a significance threshold for GHG emissions. The draft interim CEQA thresholds guidance document was not adopted or approved by the Governing Board. However, in December 2008, the SCAQMD adopted an interim 10,000 MT CO_2e per-year screening level threshold for stationary source/industrial projects for which the SCAQMD is the lead agency (see SCAQMD Resolution No. 08-35, December 5, 2008) (SCAQMD 2008b). The 10,000 MT CO_2e per-year threshold, which was derived from GHG reduction targets established in Executive Order (EO) S-3-05, was based on the conclusion that the threshold was consistent with achieving an emissions capture rate of 90% of all new or modified stationary source projects.

SCAQMD formed a GHG CEQA Significance Threshold Working Group to work with SCAQMD staff on developing GHG CEQA significance thresholds until statewide significance thresholds or guidelines were established. From December 2008 to September 2010, SCAQMD hosted working group meetings and revised the draft threshold proposal several times, although it did not officially provide these proposals in a subsequent document. SCAQMD has continued to consider adoption of significance thresholds for

6 Climate-forcing substances include GHGs and other substances such as black carbon and aerosols. This discussion focuses on the seven GHGs identified in the California Health and Safety Code Section 38505; impacts associated with other climate-forcing substances are not evaluated herein and are not materially relevant to the Proposed Project.

residential and general land use development projects. The most recent proposal issued by SCAQMD, issued in September 2010, uses the following tiered approach to evaluate potential GHG impacts from various uses (SCAQMD 2010):

Tier 1. Determine if CEQA categorical exemptions are applicable. If not, move to Tier 2.

Tier 2. Consider whether or not the proposed project is consistent with a locally adopted GHG reduction plan that has gone through public hearing and CEQA review, that has an approved inventory, includes monitoring. If not, move to Tier 3.

Tier 3. Consider whether the project generates GHG emissions in excess of screening thresholds for individual land uses. The 10,000 MT CO_2e per-year threshold for industrial uses would be recommended for use by all lead agencies. Under option 1, separate screening thresholds are proposed for residential projects (3,500 MT CO_2e per year), commercial projects (1,400 MT CO_2e per year), and mixed-use projects (3,000 MT CO_2e per year). Under option 2, a single numerical screening threshold of 3,000 MT CO_2e per year would be used for all non-industrial projects. If the project generates emissions in excess of the applicable screening threshold, move to Tier 4.

Tier 4. Consider whether the project generates GHG emissions in excess of applicable performance standards for the project service population (population plus employment). The efficiency targets were established based on the goal of Assembly Bill (AB) 32 to reduce statewide GHG emissions to 1990 levels by 2020. The 2020 efficiency targets are 4.8 MT CO_2e per-service population for project-level analyses and 6.6 MT CO_2e per-service population for plan-level analyses. If the project generates emissions in excess of the applicable efficiency targets, move to Tier 5.

Tier 5. Consider the implementation of CEQA mitigation (including the purchase of GHG offsets) to reduce the project efficiency target to Tier 4 levels.

To determine the Project's potential to generate GHG emissions that would have a significant impact on the environment, the Project's GHG emissions were compared to SCAQMD's recommended stationary source quantitative threshold of 10,000 MT CO_2e per year. Per the SCAQMD guidance, construction emissions should be amortized over the operational life of the Project, which is assumed to be 30 years (SCAQMD 2008b). This impact analysis, therefore, sums the projected annual operational GHGs with the amortized construction emissions and compares the total to the proposed SCAQMD threshold of 10,000 MT CO_2e per year.

Construction Emissions

Construction of the Project would result in GHG emissions primarily associated with the use of off-road construction equipment, on-road trucks, and worker vehicles. As described in Section 3.3, a spreadsheet model was used to calculate the annual GHG emissions. On-site sources of GHG emissions include off-road equipment, and off-site sources include trucks and worker vehicles. Table 3.8-1 presents construction GHG emissions for the Proposed Project.

As shown in Table 3.8-1, the estimated total GHG emissions during construction would be approximately 635 MT CO_2e. Estimated Project-generated construction emissions amortized over 30 years would be approximately 21 MT CO_2e per year.

Table 3.8-1. Estimated Annual Construction GHG Emissions

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons			
2023	145.04	0.03	0.02	151.35
2024	273.08	0.04	0.03	282.43
2025	189.77	0.03	0.02	197.03
2026	3.16	<0.01	<0.01	4.20
			Total	**635.01**
			Annualized emissions over 30 years (metric tons per year)	***21.17***

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; GHG = greenhouse gas.
See Appendix A for complete results. Values of "<0.01" indicate that the estimated emissions are less than two decimals.

Operational Emissions

Operation of the Proposed Project would result in GHG emissions primarily through energy use (generation of electricity consumed by the Proposed Project). GHGs would also be generated by the infrequent motor vehicle trips to the Project Sites for facility maintenance activities. As described in Section 3.3, a spreadsheet model was used to calculate the annual GHG emissions based on the operational on-road vehicles anticipated. GHGs from energy use were calculated based on the total increased energy usage of the Project facilities (approximately 15.58 million kWh/year) and indirect GHG emission factors from electricity generation for LADWP. Notably, as described in Section 3.6(a), although electricity consumption associated with the Proposed Project would increase by approximately 15.58 million kWh per year, the Project would help to restore the existing beneficial uses of the aquifer and facilitate extractions within the City's water rights. It would thus likely offset the import of water into Southern California, which would result in greater energy efficiency per gallon of water. The proposed chlorination stations would provide for the treatment of approximately 130 cfs of well water above the current treatment capacity of the stations (though within the historic range of wellfield capacity), which would equal approximately 30,668 million gallons per year. Part of the flow to the stations is enabled by the operation of the NHOU2IR facility. Based on the net increase in energy demand generated by the Project (15,580,025 kWh per year), approximately 508 kWh would be consumed per million gallons of water provided. In contrast, approximately 7,877 kWh of energy is required for every million gallons of water imported to Southern California (averaged for the State Water Project East and West Branch and the Colorado River Aqueduct) (CEC 2005). However, the GHG inventory included in Table 3.8-2 accounts for the net increase in electricity of the Project but does not account for the energy offset from transitioning from imported water to local groundwater well production. As such, the generation of Project GHGs indicated in Table 3.8-2 is a conservative estimate. Detailed assumptions, including GHG emissions from electricity generation and estimated daily worker and haul truck trips, are provided in Appendix A.

Table 3.8-2. Estimated Annual Operational GHG Emissions

Emission Source	CO_2	CH_4	N_2O	CO_2e
	Metric Tons			
Mobile	12.77	0.00	0.00	13.36
Electricity	4,879.05	8.64	14.53	4,902.22
			Total	**4,915.58**
			Amortized Construction Emissions	*21.17*
			Operational GHGs plus Amortized Construction Emissions	**4,936.75**

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; GHG = greenhouse gas.
See Appendix A for complete results.

As shown in Table 3.8-2, the Project would result in emission of approximately 4,916 MT CO_2e per year from operations alone, and 4,937 MT CO_2e per year when summed with the amortized construction GHG emissions. Estimated annual increased GHG emissions associated with the Proposed Project would not exceed the threshold of 10,000 MT CO_2e per year. Therefore, operational GHG impacts for the Proposed Project would be less than significant.

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

Less-Than-Significant Impact. Although the City of Los Angeles does not have a programmatic plan to tier from, such as a GHG emissions reduction plan, the City has released and adopted a number of plans and regulations to help reduce GHG emissions, including L.A.'s Green New Deal and the Los Angeles Green Building Code, which encourage and require applicable projects to implement energy efficiency measures. On a statewide level, the Climate Change Scoping Plan (Scoping Plan; CARB 2008, 2014, 2017) builds on laws and regulations to achieve AB 32, Senate Bill (SB) 32, and EO S-3-05 targets. Thus, if a Proposed Project complies with these plans, policies, regulations, and requirements, the Project would result in a less-than-significant impact because it would be consistent with the overarching state, regional, and local plans for GHG reduction.

On April 8, 2015, Mayor Eric Garcetti released the Sustainable City pLAn, a program of actions designed to meet short-term (2017) and long-term (2025 and 2035) targets in 14 categories designed to advance economic, environmental, and equity objectives (City of Los Angeles 2015). In 2019, the City released L.A.'s Green New Deal, which updated and superseded the 2015 Sustainable City pLAn. Rather than an adopted plan, L.A.'s Green New Deal is a mayoral initiative that consists of a program of actions designed to create sustainability-based performance targets through 2050 that advance economic, environmental, and equity objectives. While not a plan adopted solely to reduce GHG emissions, within L.A.'s Green New Deal (Sustainable City pLAn 2019), climate mitigation is one of eight explicit benefits that help define its strategies and goals. One of the targets in L.A.'s Green New Deal is to source 70% of the City's water locally by 2035. As described in L.A.'s Green New Deal, sourcing water locally, including using groundwater, makes the City's water supply more resilient to inevitable natural disasters and uses substantially less energy than imported water (City of Los Angeles 2019). The Proposed Project would be consistent with L.A.'s Green New Deal by providing for use of local groundwater supplies.

In December 2017, LADWP approved the 2017 Power Strategic Long-Term Resource Plan (Power SLTRP), which serves as a comprehensive 20-year roadmap that guides the LADWP Power System in its efforts to supply reliable electricity in an environmentally responsible and cost-effective manner (LADWP 2017). The upcoming 2022 SLTRP will analyze pathways for achieving the goal for all of the City's electricity to come from zero-carbon energy by 2035, which the City Council established based on the results of the Los Angeles 100% Renewable Energy Study (LA100 Study). The 2022 SLTRP will provide a comprehensive roadmap for meeting L.A.'s future energy needs, regulatory mandates and clean energy goals, while maintaining reliable and affordable power for our customers. The study prioritizes the core objectives of power reliability, resiliency, and affordability in an environmentally just and equitable manner (LADWP n.d.). In regard to the Proposed Project, facilities would be supplied with electricity via renewable sources at increasing levels over time, thereby reducing the Project's electricity-related GHG emissions.

The Scoping Plan provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. Under the Scoping Plan, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-GWP GHGs in consumer products) and changes to the vehicle fleet (i.e., hybrid, electric, and more fuel-efficient vehicles) and associated fuels (e.g., low-carbon fuel standard), among others. The Scoping Plan builds on a wide array of regulatory requirements that have been promulgated to reduce statewide GHG emissions. The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32 and establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. The Project would comply with all regulations adopted in furtherance of the Scoping Plan to the extent required by law and to the extent that they are applicable to the Project.

The Project would not impede the attainment of the GHG reduction goals for 2030 or 2050 identified in EO S-03-05 and SB 32. While there are no established protocols or thresholds of significance for that future year analysis, CARB forecasts that compliance with the current Scoping Plan puts the state on a trajectory toward meeting these long-term GHG goals, although the specific path to compliance is unknown (CARB 2014). CARB believes that the state is on a trajectory to meet the 2030 and 2050 GHG reduction targets set forth in AB 32, SB 32, and EO S-03-05.

As discussed above, the Project is consistent with the GHG emission reduction measures in the Scoping Plan, L.A.'s Green New Deal, and LADWP's Power SLTRP and would not conflict with the state's trajectory toward future GHG reductions. Therefore, the Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, and the impact would be less than significant.

References

CAPCOA (California Air Pollution Control Officers Association). 2008. *CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*. January 2008.

CARB (California Air Resources Board). 2008. *Climate Change Scoping Plan: A Framework for Change*. December 2008. Accessed January 2019. http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm.

CARB. 2014. *First Update to the Climate Change Scoping Plan Building on the Framework Pursuant to AB 32 – The California Global Warming Solutions Act of 2006*. May 2014. Accessed January 2019. http://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf.

CARB. 2017. *The 2017 Climate Change Scoping Plan Update*. January 20. Accessed January 2019. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.

CEC (California Energy Commission). 2005. *California's Water – Energy Relationship*. CEC-700-2005-011-SF. November 2005.

City of Los Angeles. 2015. *Sustainable City pLAn*. April 8, 2015. Accessed May 2022. https://plan.lamayor.org/sites/default/files/2015_Sustainable_City_pLAn.pdf.

City of Los Angeles. 2019. *L.A.s Green New Deal*. Accessed May 2022. https://plan.lamayor.org/sites/default/files/pLAn_2019_final.pdf

IPCC (Intergovernmental Panel on Climate Change). 2007. *IPCC Fourth Assessment Synthesis of Scientific-Technical Information Relevant to Interpreting Article 2 of the U.N. Framework Convention on Climate Change*. November. Accessed January 2019. https://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf.

LADWP. 2017. *2017 Power Strategic Long-Term Resource Plan.* December 2017. Accessed May 2022. https://www.ladwp.com/ladwp/faces/wcnav_externalId/a-p-doc?_adf.ctrl-state=1d99kbbf57_4&_afrLoop=145674077088595

LADWP. n.d. "Strategic Long-Term Resource Plan". Accessed May 2022. https://www.ladwp.com/ladwp/faces/ladwp/aboutus/a-power/a-p-integratedresourceplanning.

SCAQMD. 2008a. *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold*. October 2008. Accessed January 2019. http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgattachmente.pdf.

SCAQMD. 2008b. "Resolution No. 08-35: A Resolution of the Governing Board of the South Coast Air Quality Management District (AQMD) approving the Interim Greenhouse Gas (GHG) Significance Threshold to Be Used by the AQMD for Industrial Source Projects, Rules and Plans When It Is the Lead Agency for Projects Subject to the California Environmental Quality Act (CEQA)." *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans*, Attachment C. December 5, 2008.

SCAQMD. 2010. "Greenhouse Gases CEQA Significance Thresholds Working Group Meeting No. 15." September 28, 2010. Accessed January 2019. http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-main-presentation.pdf?sfvrsn=2.

3.9 Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
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 that 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) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less-Than-Significant Impact. Construction of the Proposed Project would include activities involving relatively small quantities of hazardous materials and petroleum products, such as gasoline, diesel fuel, oil, lubricants, paint, and solvents. Construction activities would be short term in nature and the types of materials involved are not considered acutely hazardous. The handling of these materials is subject to federal, state, and local health and safety requirements. In addition, construction would be completed in accordance with a General Construction Activity NPDES Permit (Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ, NPDES No. CAS000002), which requires a SWPPP to address potential pollutants generated by the construction activities. Therefore, Project construction would not create a significant hazard to the public or environment as a result of the routine transport, use, or disposal of hazardous materials during construction.

As discussed in Section 2.2 of this IS/MND, during operations, the OSHG units in the chlorination stations would produce a dilute sodium hypochlorite solution of 0.8% concentration in water. At this very low concentration, the sodium hypochlorite solution is an unregulated non-hazardous substance.

Long-term operation of the NHOU2IR treatment facility would involve the transport, use, and disposal of materials that would be potentially hazardous. These materials would consist of sulfuric acid, spent resin containing naturally occurring uranium, hydrogen peroxide, UV lamps, and the carbon medium in the LPGAC vessel.

Sulfuric Acid

Pretreatment activities on water from certain wells contaminated with hexavalent chromium would involve the use of sulfuric acid to adjust the pH of the water to maintain the efficiency of the WBA exchange system. The sulfuric acid would be stored in an aboveground 6,000-gallon carbon-steel tank, which would be lined with a phenolic resin to protect against corrosion. While the tank would have a capacity of 6,000 gallons, it would be maintained at an operating volume of 4,500 gallons. The sulfuric acid would be consumed at a rate of approximately 130 gallons per day, with the system operating at full capacity. Depending on actual use, the tank may need to be completely refilled approximately every month, which would require two standard-capacity tank trailer trucks (2,600 to 3,000 gallons). However, refilling operations may occur more frequently with a single truck to maintain the level of the tank.

Sulfuric acid is corrosive and can affect eyes, skin, teeth and the respiratory system upon exposure. Workers would be required to follow state and federal laws governing the handling, storage, and transport of sulfuric acid. The design of the NHOU2IR would incorporate the following project design features to minimize potential health and safety impacts associated with operational handling of sulfuric acid:

- The off-loading area would be equipped with spill and leak containment to prevent the spread and release of the chemical in the event that a spill were to occur during deliveries.
- The sulfuric acid would be transferred from the truck to the storage tanks via a sulfuric acid fill station, which would be equipped with a local alarm to indicate high tank level.

- The facility would have a sulfuric acid leak sensor, spill and leak containment beneath the storage tank and associated chemical lines, and a sump pump.
- The facility would include a shower and eyewash for workers.
- The sulfuric acid storage tank would be equipped with a level indicator and high-level switch/alarm, a containment sump, and a sump pump.

Based on these containment and safety features included in the design of the sulfuric acid storage facility, and the required compliance with state and federal regulations, this chemical is not expected to cause a significant hazard to the public or the environment during routine transport and use.

Spent Resin and LARW

The WBA exchange system uses a resin material that removes the hexavalent chromium from the water and reduces it to the less toxic and more stable trivalent chromium. The trivalent chromium is then retained on the resin media. The resin would be contained in two 600-cubic-foot vessels in a lead-lag arrangement, with one serving as the primary vessel and the other as the redundant vessel for the hexavalent chromium removal process. Once the resin in the lead WBA exchange vessel reaches capacity (i.e., becomes saturated with trivalent chromium), it would be removed and replaced, and the lead vessel would become the lag vessel, while the previous lag vessel would become the lead vessel. Through this rotational process, it is anticipated that the resin in one vessel would be changed out each year (e.g., each vessel would be changed out once every 2 years).

Once expended, the resin in the lead vessel would be removed and properly prepared for off-site transport. Because the WBA resin is also expected to accumulate low levels of naturally occurring uranium present in the groundwater, the spent resin is anticipated to be classified as LARW, which must be transported to a facility approved for the disposal of such waste, dependent on the concentration of the uranium in the resin. LARW that contains up to 500 milligrams/kilogram of uranium is classified as Technologically Enhanced Naturally Occurring Radioactive Material (TENORM) waste. The closest facility that can accept TENORM is Clean Harbors Buttonwillow in the Central Valley, approximately 125 miles north of Lankershim Yard. LARW that contains above 500 milligrams/kilogram of uranium is classified as Low-Level Radioactive Waste (LLRW). Such levels of concentration may occur during a year of operation of the WBA system at the NHOU2IR facility. The closest facility that can accept LLRW is Energy Solutions Clive Disposal Facility in Clive, Utah, located approximately 700 miles from Lankershim Yard. The transport of the spent resin would require two trucks once per year. Because the resin material would be properly prepared and would be transported to a facility approved to handle LLRW, it is not expected to cause a significant hazard to the public or the environment during routine transport, use, and disposal.

Hydrogen Peroxide

The NHOU2IR treatment system would employ an AOP system involving the injection of hydrogen peroxide into the well water followed by exposure to UV light to convert 1,4-dioxane and VOCs into benign constituents. Hydrogen peroxide would be stored in an aboveground 8,400-gallon double-walled high-density polyethylene tank; however, it would be maintained at an operating volume of 6,900 gallons. The hydrogen peroxide would be consumed at an estimated rate of 14 gallons per hour, or approximately 10,000 gallons per month, with the system operating at full capacity. Therefore, depending on actual use, the tank may need to be completely refilled as frequently as every three weeks, which would require three standard-capacity tank trailer trucks. However, refilling operations may occur more frequently with a single truck to maintain the level of the tank.

In the concentrations that would be required for the Proposed Project (27.5%), hydrogen peroxide is considered a hazardous material that is regulated at the federal and state level. At 27.5% concentration, hydrogen peroxide is classified as a Class 1 oxidizer, which is the lowest class in terms of combustion hazard. A Class 1 oxidizer can slightly increase the burning rate of combustible materials, but it does not cause spontaneous ignition when it comes in contact with such materials.

Workers would be required to follow state and federal laws governing the handling, storage, and transport of hydrogen peroxide. The design of the Proposed Project would incorporate the following project design features to minimize potential health and safety impacts associated with hydrogen peroxide:

- The off-loading area would be equipped with spill and leak containment to prevent the spread and release of the chemical in the event that a spill were to occur during deliveries.
- The hydrogen peroxide would be transferred from the truck to the storage tanks via a hydrogen peroxide fill station, which would be equipped with a local alarm to indicate high tank level
- The facility would have a hydrogen peroxide leak sensor within the double-walled tank, spill and leak containment beneath the storage tanks and associated chemical lines, and a sump pump.
- The facility would include a shower and eyewash for workers.
- The hydrogen peroxide injection point would be equipped with a leak sensor, a sump, and a sump pump.

Based on these containment and safety features included in the design of the hydrogen peroxide storage facility and injection vaults, and the required compliance with state and federal regulations, this chemical is not expected to cause a significant hazard to the public or the environment during routine transport and use.

UV Lamps

The AOP reactor would contain two UV reactor trains, each containing 192 UV lamps. The lamps are expected to last approximately 15,000 hours. Assuming that the reactors were running continuously, the lamps would need to be changed approximately every 20 months. Lamp replacement would require about one truck round trip per day and two personnel for about 1 week. Because the lamps contain mercury, they would be returned to the manufacturer for recycling.

Because the UV lamps contain mercury, in the unlikely event that a lamp were to break during transport, operation, or disposal, mercury could be released into the environment and the workers handling the lamps could be exposed to mercury. This substance is a hazardous material that is regulated at the state and federal level as universal waste (EPA 2018), and exposure could result in significant adverse impacts. However, the Proposed Project incorporates the following project design features to minimize potential health and safety impacts in the event of a mercury release:

- Workers will comply with applicable state and federal laws establishing safety protocol for cleanup and disposal of mercury.
- In the unlikely event that mercury is released into the water supply due to a lamp break during operations, the amount of water that flows through LADWP’s distribution system would be sufficient to dilute the mercury to below the applicable maximum contaminant level (MCL). The broken lamps would then be removed and disposed of in accordance with the state and federal laws governing the handling and disposal of mercury.
- Due to the mercury content in the lamps, the lamps are considered a universal waste and are prohibited from being discarded into landfills (EPA 2017). Therefore, when replaced, the used UV lamps would be returned to the manufacturer for recycling.

Based on these containment and safety features, and the required compliance with state and federal regulations, the UV lamps are not expected to cause a significant hazard to the public or the environment during routine transport and use.

Granular Activated Carbon

After the AOP process, LPGAC would be used to remove residual hydrogen peroxide and VOCs. Twelve LPGAC vessels, each 14 feet in diameter with a capacity for 30,000 pounds of carbon media, would be paired in a lead-lag configuration to provide primary and redundant treatment. Assuming maximum well field operations and based on the lead-lag vessel configuration, the carbon media in each LPGAC vessel would need to be replaced about once every other year, which would mean six vessels per year would be changed out. During this replacement process, the carbon media in one to two vessels would be replaced every week until the change-out of all vessels is completed over a 1- to 1.5-month period.

The LPGAC would not pose a hazard to the public or the environment. LPGAC vessels are designed with a closed-loop carbon exchange, so that spent carbon is removed and fresh carbon is refilled without exposure to the environment. The spent carbon media would be transported to a recycling facility for regeneration and reuse.

LPGAC has the potential to create hazardous low-oxygen conditions for workers in certain circumstances. Activated carbon removes oxygen from air. In closed or partially closed containers and vessels, oxygen depletion may reach hazardous levels, exposure to which could result in a significant adverse impact. However, workers would not enter any vessels containing LPGAC because this material is added to and removed from the tanks externally, and all applicable state and federal worker safety requirements would be implemented. As a result, the LPGAC operation and maintenance would not cause a hazard to the public or to the environment during routine transport and use.

While potentially hazardous materials would be involved with operation of the Proposed Project, compliance with existing laws regulating these substances, in combination with the facilities and safety procedures listed above, would ensure that these materials would be handled properly and that spills would be contained and addressed in a safe manner in the unlikely event that a spill were to occur. Therefore, impacts related to the routine use, transport, and disposal of hazardous materials in association with Project operations would be less than significant.

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

Less-Than-Significant Impact. As described in Section 3.9(a), construction of the Proposed Project would include activities involving relatively small quantities of hazardous materials and petroleum products, such as gasoline, diesel fuel, oil, lubricants, paint, and solvents. However, construction activities would be short term in nature and the types of materials involved are not considered acutely hazardous. The handling of these materials is subject to federal, state, and local health and safety requirements. In addition, construction would be completed in accordance with a General Construction Activity NPDES Permit, which requires a SWPPP to address potential pollutants generated by the construction activities. Therefore, Project construction would not create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Also as described in Section 3.9(a), hazardous materials would be used during operation of the NHOU2IR. In the unlikely event that these materials were to be accidentally released to the environment during operations, those substances could pose a hazard to the public and to the environment. However, the substances discussed above (i.e., sulfuric acid, spent resin and LARW, hydrogen peroxide, mercury, and LPGAC) would be handled in accordance with state and federal laws governing the storage, use, transport, and disposal of such materials. The Project would include safeguards to monitor for, limit, and contain accidental releases. Any release of hazardous materials would be handled in a manner that would not pose a significant hazard to the public or the environment. As such, impacts related to an accidental release of these materials into the environment would be less than significant.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. The closest schools to the Project Sites are Laurel Hall School, located approximately 1 mile south of the NHC Project Site, and Strathern Elementary School, located approximately 1.1 miles northwest of the RT Project Site. As such, the Proposed Project would not be located within a quarter mile of an existing or proposed school, and no impact would occur.

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

Less-Than-Significant Impact. The NHC Project Site and the RT Project Site (i.e., Lankershim Yard) are not specifically included on any lists compiled pursuant to California Government Code Section 65962.5 (i.e., the Cortese List) (CalEPA 2022). However, these sites are located within the boundaries of the EPA-designated North Hollywood Operable Unit Superfund Site, which overlays areas of the groundwater aquifer that are contaminated. The operation of the NHOU2IR will proceed under order from the EPA and will further the remediation of the groundwater basin; it does not have the potential to create a significant hazard to the public or the environment. The NHC treatment facility, currently under construction at the NHPS property, would further the remediation of the groundwater basin in relation to water pumped at the RT Well Field. The Proposed Project would not interfere with or limit the remediation process.

The NHW Project Site is listed as an active cleanup site in SWRCB's GeoTracker database (North Hollywood West Remediation Project [T10000011288]) (SWRCB 2022) due to contaminated groundwater in the aquifer beneath the site and the use of Proposition 1 Funding to implement a response action there. However, construction activities at the NHW Project Site are limited to equipment replacements and upgrades within the existing chlorination station building. Construction of the Proposed Project at NHW would not involve any ground-disturbing activities and as such, it would not create a significant hazard to the public or the environment. Therefore, the potential for the Proposed Project to create a significant hazard to the public or the environment is low, and impacts would be less than significant.

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?

Less-Than-Significant Impact. The Hollywood Burbank Airport is located approximately 1.25 miles east of the RT and NHC Project Sites, but the Project Sites are not located within the Airport Influence Area or designated Runway Protection Zones. The closest Runway Protection Zone is located approximately 0.5 miles east of the NHPS property (Los Angeles County ALUC 2003). In addition, new facilities would not exceed heights of existing facilities on the Project Sites and would not be of a height that would represent an obstruction to air navigation. Based on the distance to the closest airport and Runway Protection Zone, the Project would not result in exposure of people residing or working in the Project area to safety hazards associated with a public airport or public use airport. Therefore, impacts would be less than significant.

f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact. None of the Proposed Project components are located on streets designated as primary or secondary disaster routes, as designated by the Los Angeles County Public Works Department (Los Angeles County Public Works Department 2012). All construction activities at the NHW and RT Project Sites would occur within LADWP property. At the NHC Project Site, it may be necessary to operate some equipment from adjacent streets during certain activities, which may entail brief lane closures. However, this is not anticipated to interfere substantially with the emergency response or evacuation. All construction activities would be carried out in accordance with all applicable Los Angeles Department of Transportation (LADOT) and Los Angeles Fire Department emergency access standards. Access would be maintained during construction, or alternative access routes would be identified, if necessary. Operation of the Proposed Project would occur within existing LADWP facilities and would not impact emergency response or evacuation. As such, the Proposed Project would have no impact on emergency response or evacuation plans.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

No Impact. The Project Sites are located in an urban area, and no wildlands are located on site or in the vicinity. Therefore, no impacts would occur relative to wildland fires.

References

CalEPA (California Environmental Protection Agency). 2022. "Cortese List Data Resources." Accessed May 16, 2022. https://calepa.ca.gov/sitecleanup/corteselist/.

EPA (U.S. Environmental Protection Agency). 2017. "Recycling and Disposal of CFLs and Other Bulbs that Contain Mercury." Accessed July 5, 2022. https://www.epa.gov/cfl/recycling-and-disposal-cfls-and-other-bulbs-contain-mercury.

EPA. 2018. "Universal Waste." Accessed July 5, 2022. https://www.epa.gov/hw/universal-waste.

Los Angeles County ALUC (Airport Land Use Commission). 2003. "Airport Influence Area. Burbank/Glendale/Pasadena Airport" Accessed May 16, 2022. https://planning.lacounty.gov/assets/upl/project/aluc_airport-burbank.pdf.

Los Angeles County Public Works Department. 2012. Disaster Routes with Road Districts, North Los Angeles County. Accessed May 16, 2022. https://dpw.lacounty.gov/dsg/DisasterRoutes/map/disaster_rdm-North.pdf.

SWRCB (State Water Resources Control Board). 2022. "North Hollywood West Remediation Project." GeoTracker. Accessed May 16, 2022. https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000011288.

3.10 Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii) 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; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less-Than-Significant Impact. Water quality standards applicable to the Proposed Project consist of two types: those related to the quality of drinking water delivered by LADWP to its customers, and those related to the protection and enhancement of water quality in the environment (i.e., surface water and groundwater quality). Drinking water standards are set under the federal Safe Drinking Water Act and the California Safe Drinking Water Act.

environment (i.e., surface water and groundwater quality). Drinking water standards are set under the federal Safe Drinking Water Act and the California Safe Drinking Water Act. Regulations implementing the California Safe Drinking Water Act are defined in the California Health and Safety Code and Titles 17 and 22 of the California Code of Regulations. Environmental water quality standards are set under both the Clean Water Act (federal law) and the Porter-Cologne Water Quality Control Act (state law). The California Legislature has assigned the primary responsibility to administer and enforce statutes related to water quality to SWRCB and its nine RWQCBs.

The Proposed Project's compliance with regulatory standards with respect to drinking water quality, surface water quality, and groundwater quality is discussed below.

Drinking Water Quality

LADWP monitors its drinking water sources and distribution systems in accordance with California Code of Regulations, Title 22, Division 4, Chapter 15, Domestic Water Quality and Monitoring, which is administered by SWRCB's DDW. LADWP's existing DDW domestic water supply permit requires extensive water quality monitoring of its raw water supplies (i.e., untreated reservoirs and groundwater), as well as within its treatment and distribution system, to ensure that water delivered to customers is safe and compliant with all drinking water statutes (SWRCB 2022). LADWP is required to monitor its groundwater sources for a wide range of constituents, including bacteriological constituents; general physical, secondary, and inorganic constituents; nitrates and nitrites; radiological constituents; and various constituents of concern. LADWP publishes yearly water quality monitoring reports demonstrating that water entering its distribution systems meets all applicable water quality standards.

Operation of the NHOU2IR for drinking water purposes would require an update to LADWP's Domestic Water Supply Permit. The Project would include a groundwater pumping plan for capture and control of the contaminant plumes at the NHOU; a treatment plan for removal of contaminants from the pumped water, consistent with applicable regulations and requirements and in a manner that protects public health and the environment; and a groundwater monitoring and compliance plan for ensuring that treated water meets all necessary federal and state drinking water standards.

LADWP would continue to comply with applicable regulations and the terms of its water supply permit, would continue to implement its extensive water quality monitoring activities, and would implement corrective actions where needed to ensure the continued safety and reliability of its water supply. In the event previously unidentified contaminants (i.e., those not specifically targeted by the Proposed Project) are detected at concentrations exceeding applicable levels, LADWP would take appropriate action, which would include notifying the DDW, increasing monitoring, and if necessary, deactivating wells until the issue can be addressed. The level of disinfection provided by the proposed chlorination stations would be monitored at numerous location within the collection system prior to and after the water enters the NHPS forebay. Therefore, the impact of the Proposed Project on drinking water quality would be beneficial.

Surface Water Quality

Water quality objectives, plans, and policies for surface waters are established in the Water Quality Control Plan for the Los Angeles Region (Basin Plan), as amended. The Basin Plan establishes water quality objectives based on the beneficial uses identified for surface waters. The plan aims to address threats to water quality through various programs and policies, such as establishment of total maximum daily loads of pollutants. The Project Sites are located in a highly urbanized setting served by a network of storm drains that eventually discharge to the Tujunga Wash and the Los Angeles River. The Tujunga Wash is impaired under the Clean Water Act Section 303(d) with the following pollutants: ammonia, indicator bacteria, copper, and trash. Reach 4 of the Los Angeles River, which the Tujunga Wash drains to, is impaired with the following pollutants: trash, indicator bacteria, nutrients, and toxicity (SWRCB 2021). Effluent from treatment plants and process water discharges make up a significant fraction of flows in these receiving waters. Potential threats to water quality associated with the Proposed Project are minimal because the Project would not involve non-stormwater discharges to the storm drain system during operation and maintenance activities. Backwash water from the WBA exchange system and the LPGAC vessels would be directed to the City’s sanitary sewer system, as discussed in Section 2.5.4 of this IS/MND. Potential water quality impacts associated with altered land cover and imperviousness of the site are addressed in Sections 3.10(c) and 3.10(d).

Stormwater runoff from the Project Sites during construction of the Proposed Project could contribute limited amounts of pollutants to receiving waters, such as sediment, litter, and/or fuels and greases. Construction-related land disturbance, such as grading, excavation, trenching, and temporary soil stockpiling, would result in temporary disturbance of soils. Sediment from erosion of graded or excavated surface materials, leaks or spills from equipment, or inadvertent releases of construction materials could result in water quality degradation if runoff containing the sediment entered receiving waters in sufficient quantities to exceed water quality objectives. Impacts from construction-related activities would be short term. Non-stormwater discharges during construction, such as dewatering of excavations and trenches, are not anticipated due to the shallow nature of the excavations in comparison to the depth to groundwater in the area, which is approximately 70 feet bgs (Diaz Yourman 2021a, 2021b).

Because implementation of the Proposed Project would collectively require construction activities resulting in land disturbance of more than 1 acre, LADWP would be required to obtain coverage under the Construction General Permit (SWRCB Order 2009-0009-DWQ, as amended), which pertains to pollution from grading and project construction. Coverage under the Construction General Permit requires a qualified individual (as defined by the SWRCB) to prepare a SWPPP to address the potential for construction-related activities to contribute to pollutants within the proposed project's receiving waterways. The SWPPP must describe the type, location, and function of structural measures to alleviate stormwater impacts and must demonstrate that the combination of measures selected are adequate to meet the discharge prohibitions, effluent standards, and receiving water limitations contained in the Construction General Permit. Measures developed as part of the SWPPP may include, but are not limited to, minimizing the extent of disturbed areas and duration of exposure, stabilizing and protecting disturbed areas, keeping runoff velocities low, and retaining sediment within the construction area. These measures could be achieved in part by use, as appropriate, of temporary desilting basins, silt fences, gravel bag barriers, temporary soil stabilization, temporary drainage inlet protection, and/or diversion dikes and interceptor swales. Adherence to the SWPPP would prevent construction-related contaminants from reaching impaired surface waters and contributing to impacts on water quality in the region's receiving waters.

The transport, use, and disposal of hazardous materials required for operation and maintenance of the Proposed Project are described in Section 3.9, Hazards and Hazardous Materials, including handling of sulfuric acid and hydrogen peroxide. The facilities and procedures that address hazards and hazardous materials described in Section 3.9 would effectively avoid or substantially minimize the potential for such materials to be released into stormwater runoff.

Required compliance with the Construction General Permit, including preparation and implementation of a SWPPP, as well as installation of spill and leak detection/containment systems, would ensure that surface water quality impacts resulting from construction and operation of the Proposed Project would be less than significant.

Groundwater Quality

The Proposed Project would not contribute additional pollutant sources to the groundwater basin. Instead, operation of the NHOU2IR would remediate contaminated groundwater in the western portion of the NHOU. Operation of the three chlorination stations would disinfect water pumped from the RT Well Field, the NHW Well Field, and the western portion of the NHOU. Operation of the Proposed Project components would be consistent with LADWP's historical use of its well fields and would help LADWP meet current and projected demand for drinking water in the City of Los Angeles.

Operation of the NHOU2IR would extract water from the western portion of the contaminated NHOU, which would affect the distribution and extent of contaminants in the vicinity of the well field due to the pumping radius of influence. The direction and rate of migration of contaminants in the groundwater could be locally altered in response to pumping, thereby affecting measured concentrations over time. However, NHOU2IR operations are designed to intercept the contaminant plume. Otherwise, contaminants would continue to migrate downgradient of the well field and to other wells within the well field, potentially contaminating additional areas of the groundwater basin. Therefore, with regard to the water quality in the groundwater basin, any impact would be beneficial. As such, the Proposed Project's impact on groundwater quality, including any movement of contaminants within the NHOU, would be less than significant.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less-Than-Significant Impact. During Project construction, minor amounts of water would be required for various uses, such as dust control. However, because of the relatively small quantity of water required in the context of available supply, no depletion of groundwater or other supplies would occur from Project construction.

The San Fernando Groundwater Basin (SFB) is an adjudicated basin and is administered by the Upper Los Angeles River Area (ULARA) Watermaster. As outlined in ULARA's most recent annual report (2019), which covers the 2017–2018 water year, there has been a slight declining trend in the volume of water in the SFB beginning in approximately 1980. The report attributes this decline to pumping in excess of long-term recharge, reduced natural recharge due to increased urbanization, additional underflow and rising groundwater leaving the basin, reduced irrigation return flow due to water conservation efforts, and reduced artificial recharge due to spreading ground restrictions (ULARA 2019). However, the report also points to recent efforts by LADWP and others to enlarge spreading grounds, which would beneficially impact recharge of the SFB.

Groundwater extraction from the SFB is limited by court-defined rights recorded in the *Judgment of the California Superior Court in Case No. 650079, The City of Los Angeles vs. The City of San Fernando, et al.,* dated January 26, 1979, as administered by the ULARA Watermaster. Extracted water is "charged" to the City's pumping entitlement, as stipulated in the 1979 judgment. LADWP is also allowed to accumulate credit for stored groundwater from in-lieu pumping or additional spread water. As such, groundwater extraction from the RT Well Field, the NHW Well Field, and the western portion of the NHOU would continue to be limited by LADWP's adjudicated water rights.

Therefore, the Proposed Project facilitate LADWP's extraction of groundwater from the RT Well Field, the NHW Well Field, and the western portion of the NHOU, but the pumping would be done in a manner consistent with the City's entitlement (and historical capacity) and in a manner that would not compromise the safe yield of the basin or response actions being conducted by others in the basin. As demonstrated through groundwater modeling conducted by LADWP and other entities who are operating nearby wells, the Proposed Project is not anticipated to affect groundwater levels such that pre-existing nearby wells would be adversely affected. Therefore, impacts would be less than significant.

c) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) Result in substantial erosion or siltation on- or off-site?

Less-Than-Significant Impact. No streams, rivers, wetlands, or other water bodies are located on or in the vicinity of the Project Sites. As such, the Proposed Project would not result in the alteration of the course of a stream or river, which could impact erosion or siltation. However, construction of the Proposed Project would result in ground surface disturbance during grading, excavation, and temporary stockpiling of soil that could create the potential for erosion to occur. As indicated in Section 3.10(a), because the Proposed Project would involve construction on an area greater than 1 acre, it would require compliance with the General Construction Activity NPDES Permit (Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ, NPDES No. CAS000002), which requires preparation of and compliance with a SWPPP. The SWPPP must include erosion control measures such as covering exposed soil stockpiles, protecting the perimeter of the construction site with sediment barriers, and protecting storm drain inlets.

During operation, site conditions would be unchanged at the NHW Chlorination Station and generally similar to existing conditions at the RT Chlorination Station. Improvements at the NHC Chlorination Station would include construction of a new building and driveway, which would decrease exposed soils and reduce erosion at this Project Site. As such, impacts related to erosion and siltation would be less than significant.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?

Less-Than-Significant Impact. Minimal amounts of water may be used for dust control of exposed soils during construction of the Proposed Project. However, compliance with the Project-specific SWPPP that would be required per the Construction General Permit, specifically the use of runoff control devices, would ensure that flooding on or off site would be minimized during construction.

During operation, site conditions would be unchanged at the NHW Chlorination Station and generally similar to existing conditions at the RT Chlorination Station. Although the NHC Project Site is primarily paved, Proposed Project improvements at the NHC Chlorination Station would include construction of a new building and driveway, which would increase impermeable surfaces and therefore increase runoff. Any long-term changes in drainage patterns that would occur as a result of the Proposed Project would be limited to minor, highly localized changes associated with the presence of additional structures and additional impervious surfaces on the site. The increase in impervious surfaces at the NHC Project Site could cause a minor increase in peak flow rate and runoff volumes from the site. However, this Proposed Project Site would maintain the general drainage pattern as it currently exists. Furthermore, the Proposed Project would comply with the City of Los Angeles Low Impact Development Ordinance, which requires management of stormwater on site, including measures to capture and infiltrate stormwater into pervious surfaces. Due to the developed nature of the Proposed Project area, the relatively small size of the NHC Project Site, and required compliance with existing regulations, any minor alterations to the existing drainage pattern would result in a less-than-significant impact relative to surface runoff and flooding.

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

Less-Than-Significant Impact. During construction of the Proposed Project, drainage patterns and runoff quantities on the Project Sites may be temporarily altered, which could potentially cause increased runoff or runoff that contains sediment, petroleum products, or other potential water pollutants during construction. The potential impacts of polluted runoff, including stormwater runoff, non-stormwater discharges, and the transport/use of hazardous materials, are addressed in the preceding discussions in this section.

As discussed in Section 3.10(c)(ii), site conditions would be unchanged at the NHW Chlorination Station and generally similar to existing conditions at the RT Chlorination Station. Furthermore, the addition of the Proposed Project facilities would not substantially change the drainage patterns of the NHC Chlorination Station site, which is currently predominantly paved. The moderate increase in impervious surfaces due to the Proposed Project could cause a minor increase in peak flow rate and runoff volumes from the site. However, this increase in impervious area in comparison to the enormous size of the urban area served by the City's storm drain system would result in a negligible (i.e., non-measurable) effect on the capacity of the storm drain system. Nevertheless, required compliance with the City's Low Impact Development Ordinance would reduce the potential for increased runoff to occur. This ordinance requires management of stormwater on site, including measures to capture and infiltrate stormwater into pervious surfaces. As a result, impacts would be less than significant.

iv) Impede or redirect flood flows?

Less-Than-Significant Impact. As described in the preceding discussions in this section, no streams, rivers, wetlands, or other water bodies are located on, or in the vicinity of, the Project Sites. The Project Sites are not located in the 100-year or 500-year floodplains (DWR 2022). Additionally, the Proposed Project would not substantially alter the drainage pattern at any of the three Project Sites such that flows would be impeded or redirected. As such, impacts would be less than significant.

d) In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

No Impact. As stated in Section 3.10(c)(iv), the Project Site is not located in the 100-year or 500-year floodplain (DWR 2022). As such, hazards related to flooding would not be expected. Tsunamis are large ocean waves caused by the sudden water displacement that results from an underwater earthquake, landslide, or volcanic eruption. Tsunamis affect low-lying areas along the coastline. The Project Sites are located over 13 miles northeast of the Pacific Ocean and inland enough that they would not be affected by a potential tsunami. Seiches are waves in enclosed or semi-enclosed bodies of water such as bays, lakes, and harbors. The Project Sites are not in the vicinity of such a water body. As such, the Project would have no impact related the potential to release pollutants due to Project inundation from a flood, tsunami, or seiche.

e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less-Than-Significant Impact. The SFB is an adjudicated basin and is administered by the ULARA Watermaster. Groundwater extraction from the SFB is limited by court-defined rights recorded in the Judgment of the California Superior Court in Case No. 650079, *The City of Los Angeles vs. The City of San Fernando, et al*., dated January 26, 1979, as administered by the ULARA Watermaster. As such, groundwater extraction from the RT Well Field, the NHW Well Field, and the NHOU would continue to be limited by LADWP's adjudicated water rights and therefore would be in compliance with the sustainable management of the SFB.

The Project Sites are covered under the Basin Plan, as amended. The Project Sites are located in a highly urbanized setting served by a network of storm drains that eventually discharge to the Tujunga Wash and the Los Angeles River. The Tujunga Wash is impaired under the Clean Water Act Section 303(d) with the following pollutants: ammonia, indicator bacteria, copper, and trash. Reach 4 of the Los Angeles River, which the Tujunga Wash drains to, is impaired with the following pollutants: trash, indicator bacteria, nutrients, and toxicity (SWRCB 2021). Potential threats to water quality associated with the Proposed Project are minimal because it would not involve non-stormwater discharges to the storm drain system. The Proposed Project would be subject to the requirements of the Construction General Permit and a Project SWPPP during construction, and would also comply with the City's Low Impact Development Ordinance, which requires management of stormwater on site, including measures to capture and infiltrate stormwater into pervious surfaces. As such, the Proposed Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Impacts would be less than significant.

References

Diaz Yourman (Diaz Yourman and Associates). 2021a. *Geotechnical Report Rinaldi Toluca OSHG Station Upgrades, Los Angeles California*.

Diaz Yourman. 2021b. *Geotechnical Report North Hollywood Central Chlorination Station Replacement, 6838 Hinds Avenue, North Hollywood, California*.

DWR (California Department of Water Resources). 2022. "Best Available Maps." [Web mapping application.] Accessed May 18, 2022. https://gis.bam.water.ca.gov/bam/.

SWRCB (State Water Resources Control Board). 2021. “2018 California Integrated Report Map.” Map application. Accessed May 18, 2022. https://gispublic.waterboards.ca.gov/portal/apps/webappviewer/index.html?id=e2def63ccef54eedbee4ad726ab1552c.

SWRCB. 2022. “Laws and Regulations.” Accessed July 6, 2022. https://www.waterboards.ca.gov/laws_regulations/.

ULARA (Upper Los Angeles River Area) Watermaster. 2019. *Annual Report, Watermaster Service in the Upper Los Angeles River Area (ULARA), Los Angeles County, California*. Accessed May 18, 2022. http://ularawatermaster.com/public_resources/WY-2017-18-ULARA-WM-Rpt-12-2019.pdf.

3.11 Land Use and Planning

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

a) Would the project physically divide an established community?

No Impact. The Proposed Project would involve installation of improvements to existing chlorination stations at the NHW and RT Project Sites and a new facility on the NHC Project Site, located adjacent to existing LADWP facilities and facilities currently under construction within the same block. Construction activities on all three Project Sites would occur entirely within LADWP property and would not impact public roadways or facilities or otherwise divide established communities. As such, neither construction nor operation of the Proposed Project components would have the potential to permanently and physically divide an established community, and no impact would occur.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. The Proposed Project would involve improvements to existing chlorination stations at the NHW and RT Project Sites and a new facility on the NHC Project Site, located north of the existing LADWP facilities within the same block. The Proposed Project also involves LADWP's operation of NHOU2IR remediation facility, collocated on the Lankershim Yard with the RT chlorination station. The NHW Project Site is zoned OS-1XL (Open Space); however, the Project would not make any changes to the existing uses or expand facilities at the site. Lankershim Yard is zoned M2-1VL (Limited Industrial), and the Project uses are consistent with this zoning.

The existing NHC Project Site is zoned RD1.5-1 (Restricted Density Multiple Dwelling Zone). However, LADWP owns the property on which the new chlorination station would be constructed. The new station would be a water asset as defined under City of Los Angeles Charter (Charter) Section 672(a), which encompasses all "water rights of every nature and kind owned or controlled by the City, and all the lands, rights-of-way, sites, facilities and property used for the capture, transportation, distribution and delivery of water for the benefit of the City." The City's water assets are under the exclusive control of the Board of Water and Power Commissioners, subject to City Council oversight under Charter Section 245. As per Charter Section 675(a), the Board has "the power and duty to make and enforce all necessary rules and regulations governing the construction, maintenance, operation, connection to and use of the Water and Power Assets for [LADWP] Purposes." Therefore, the use of the LADWP parcels currently zoned for residential uses for the development of the NHC Chlorination Station would not conflict with land use plans, policies, or regulations that have been adopted for the purpose of avoiding or mitigating an environmental effect, and would be similar to long-standing NHPS facilities located on residentially zoned parcels along Vanowen Street at the south end of the NHPS property. Therefore, no impacts would occur.

References

City of Los Angeles Charter, Section 672, Possession, Management, and Control of Water and Power Assets. Accessed June 17, 2022. Sec. 672. https://codelibrary.amlegal.com/codes/los_angeles/latest/laac/0-0-0-3325.

City of Los Angeles Charter, Section 675, Powers and Duties of the Board. Accessed June 17, 2022. Sec. 672. https://codelibrary.amlegal.com/codes/los_angeles/latest/laac/0-0-0-3358.

3.12 Mineral Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
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?	☐	☐	☐	☒

a) Would the project 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?

No Impact. The Division of Mines and Geology (renamed the California Geological Survey in 2006) has mapped portions of the City within Mineral Resource Zone 2 for aggregate resources. Mineral Resource Zone 2 is defined as "areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood of their presence exists." The Project Sites are located within Mineral Resource Zone 2 and are therefore in an area with known mineral resources identified by the state (City of Los Angeles 2001). However, no active mine operations are currently present, nor have they been present in the past on the Project Sites. The Project Sites are located in an urbanized area and are surrounded by residential, industrial, and commercial uses, which would preclude mineral extraction. No impact would occur.

b) Would the project 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?

No Impact. The City of Los Angeles has identified the Project Sites as being within an area containing significant mineral deposits (City of Los Angeles 2001). However, as discussed in Section 3.11(a), the Project Sites are located in an urbanized area and are surrounded by residential, industrial, and commercial uses, which would preclude mineral extraction activities. Therefore, the Project would not result in a loss of availability of a known locally important mineral resource recovery site, and no impact would occur.

References

City of Los Angeles. 2001. "Exhibit A" in *Conservation Element of the City of Los Angeles General Plan*. Accessed March May 16, 2022. https://planning.lacity.org/odocument/28af7e21-ffdd-4f26-84e6-dfa967b2a1ee/Conservation%20Element.pdf.

3.13 Noise

Would the Project Result In:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

Existing Setting

The Proposed Project involves new facility construction and upgrades at three different sites that may be summarized as follows with respect to their surroundings and the existing outdoor ambient sound environments:

- **NHW Chlorination Station:** Proposed upgrades to the existing chlorination station would be performed at the LADWP NHW Well Field property bounded by Vanowen Street to the south, SR-170 to the east, and athletic fields to the north and west. With SR-170 as close as 100 feet to the existing chlorination station building and Vanowen Street less than 250 feet away, the existing outdoor sounds are predominantly those of roadway vehicle traffic.

- **RT Chlorination Station:** Proposed upgrades to the existing chlorination station would occur within the LADWP Lankershim Yard located on the north side of Vose Street. Lankershim Yard is also the location of the NHOU2IR groundwater treatment facility, which is currently under construction at the property. Lankershim Yard is surrounded by light industrial land uses and corresponding sources of noise. Approximately 400 feet north of the existing chlorination station are railroad tracks.
- **NHC Chlorination Station:** The proposed replacement chlorination station would be constructed at the northern end of the city block bounded by Vanowen Street, Morella Avenue, Dehougne Street, and Hinds Avenue, on the site where the existing NHPS Complex and the currently under construction NHC groundwater treatment facility are. To the east, north, and west of the proposed NHC Chlorination Station site are primarily multi-family homes.

The existing outdoor ambient sound environment of the above-listed areas was sampled during a field survey conducted on March 15, 2022. Collected sound pressure level (SPL) measurements at these locations, along with summarized investigator observations regarding perceived or witnessed acoustical contributors to this baseline or pre-Project noise environment, are presented in Table 3.13-1. Photographs of the measurement locations and the investigator field notes are provided in Appendix D, Noise.

Table 3.13-1. Measured Existing Outdoor Ambient Sound Levels on March 15, 2022

Survey Location	Location/Address	Time (hh:mm)	L_{eq} (dBA)	L_{max} (dBA)	L_{90} (dBA)	Notes (Observed Sound Sources)
NHW CS	Vicinity of 12403 Vanowen Street	12:17– 12:31	64.2	72.3	62.2	Local roadway and highway traffic (Vanowen Street and SR-170); low-speed vehicles on site; jet aircraft flyover
RT CS	Vicinity of 11845 Vose Street	10:43–10:58	60.8	81.8	51.6	Construction hand tools; back-up alarms; portable generator; local roadway traffic (Vose Street); birds and barking dogs; material movement at nearby businesses
NHC CS	Vicinity of 6855 Hinds Avenue	11:47–12:01	66.3	81.7	52.9	Construction hand tools; local roadway traffic (Hinds Avenue, Dehougne Street); backup alarms; helicopter and jet aircraft overflights; concrete truck and street sweeper pass-bys; conversation

Source: Dudek 2022.
Notes: L_{eq} = energy-equivalent continuous sound level (time-averaged sound level); dBA = A-weighted decibels; L_{max} = maximum sound level during the measurement interval; L_{90} = sound pressure level exceeded 90% of the measured time period; NHW = North Hollywood West; CS = Chlorination Stations; SR = State Route; RT = Rinaldi-Toluca; NHC = North Hollywood Central.

The presentation of L_{90} values along with energy-equivalent (L_{eq}) and maximum measured sound levels (L_{max}) helps illustrate the character of the measured sound environments. For instance, at the NHW Chlorination Station, the L_{eq} and L_{90} values are only 2 decibels (dB) apart, which indicates the outdoor environment is dominated by relatively continuous roadway traffic from both Vanowen Street and SR-170. But at the NHC and RT Chlorination Stations, the decibel differences between L_{eq} and L_{90} are much greater, indicating that while the latter value is a likely better descriptor of the “background” noise from sources like roadway traffic and equipment, which are more continuous in character, the former is influenced by loud but intermittent sounds, as suggested by the L_{max} values that exceed 80 A-weighted decibels (dBA).[7] Thus, while all three sampled environments exhibit L_{eq} in the 61–66 dBA range, the outdoor environment at the NHW Project Site is likely louder than those at the NHC and RT Project Sites despite their momentary higher noise levels.

Noise Ordinances

Los Angeles Municipal Code (LAMC) Section 41.40(a) generally prohibits noise-generating construction work that would disturb persons occupying sleeping quarters in any dwelling hotel or apartment or other place of residence between 9:00 p.m. and 7:00 a.m. on weekdays. According to Section 41.40(c), such work shall not occur before 8:00 a.m. or after 6:00 p.m. on Saturdays or national holidays and shall not occur at any time on Sundays. As discussed in Section 2.4 of this IS/MND, Project construction would occur within the allowable hours indicated in Section 41.40. According to Section 41.10(b), these time limits do not apply to work in any area zoned for manufacturing or industrial uses, as at the RT Project Site.

However, even if construction activities occur within allowable hours, there is nonetheless the potential for temporary noise from construction equipment and processes to cause an increase in noise levels at nearby off-site noise-sensitive receivers. LAMC Section 112.05(a) prohibits construction equipment noise louder than 75 dBA when measured at 50 feet from the source in any residential zone of the City or within 500 feet thereof.

In relation to noise not associated with construction activity, LAMC Section 112.04(b) requires that aggregate noise emission due to the repetitive operation of any machinery, equipment, or mechanical or electrical device must not exceed the existing ambient noise level by more than 5 dB on the premises of any other occupied property.

[7] An A-weighted decibel scale compensates for sound detected at various frequency levels to provide a measurement approximating human perception of loudness.

a) Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

NHW Chlorination Station

Construction

Less-Than-Significant Impact. Construction activity involving the operation of heavy equipment at the NHW Chlorination Station is expected to take a total of 22 months, from October 2023 to July 2025. Anticipated on-site construction activities and processes would include installation of a temporary OSHG trailer facility, equipment installation, and interior finishing. Because most work, other than the installation of the temporary OSHG trailer, would be conducted within the existing NHW Chlorination Station facility, expected on-site construction equipment would be limited to a water truck, crane, backhoe, and forklift. Pile driving equipment and other impact-type equipment with high noise levels are not expected on site.

Based on reference noise emission level data from the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) (FHWA 2006), none of the construction equipment for this site would exceed the acoustic threshold of 75 dBA at a horizontal distance of 50 feet as established in LAMC Section 112.05(a). Predicted construction noise levels at the nearest noise-sensitive receptor (the Park Plaza Senior Apartments on Vanowen Street, approximately 300 feet south of the NHW Project Site) would be no more than 56 dBA hourly L_{eq}. Therefore, the impact from Project construction would be less than significant.

Operation

Less-Than-Significant Impact. As detailed in Appendix D, the noise from the proposed upgraded chlorination station operating at a capacity of 1,200 ppd was modeled based on the noise emission level from the existing NHW Chlorination Station and its documented operation level of approximately 300 ppd during the March 15, 2022, field survey measurement. A comparison of the results between Figure N-3 (existing operations) and Figure N-4 (upgraded operations at up to 1,200 ppd) indicates that the latter is greater by less than 1 dB at the VS1, VS2, and VS3 representative receptor locations and would be an imperceptible change. Furthermore, the predicted future upgraded NHW Chlorination Station operation noise level ranging from 55 to 60 dBA L_{eq} at approximately 25 feet east of the facility are several decibels less than the traffic-dominated 64 dBA L_{eq} outdoor ambient noise level measured at that location. Therefore, the impact from Project operations would be less than significant.

RT Chlorination Station

Construction

Less-Than-Significant Impact. Construction activity involving the operation of heavy equipment at the RT Chlorination Station is expected to take a total of 17 months, from April 2024 to August 2025. Anticipated on-site construction activities and processes would include installation of a temporary OSHG trailer facility, building erection, equipment installation, and interior finishing. Because work would be conducted within the existing RT Chlorination Station and adjoining it (for the added brine tanks and building enclosure), expected on-site construction equipment would include a water truck, crane, concrete pump truck, backhoe, and forklift. Pile-driving equipment and other impact-type equipment with high noise levels are not expected on site.

Based on reference noise emission level data from the FHWA RCNM (FHWA 2006), none of the construction equipment for this site would exceed the acoustic threshold of 75 dBA at a horizontal distance of 50 feet as established in LAMC Section 112.05(a). In addition, the closest residential uses to the RT Project Site are located approximately 350 feet to the south and are entirely buffered from the Project Site by intervening structures. Therefore, the impact from Project construction would be less than significant.

Operation

Less-Than-Significant Impact. As detailed in Appendix D, the noise from the proposed upgraded chlorination station operating at a capacity of 2,000 ppd was modeled based on the noise emission level from the existing RT Chlorination Station and its documented operation level of approximately 300 ppd during the March 15, 2022, field survey measurement. A comparison of the results shown in Appendix D between Figure N-6 (upgraded operations at up to 2,000 ppd) and Figure N-7 (existing operations at approximately 300 ppd) indicates that the former is greater by approximately 2 to 3 dB at the V1 and R1 representative receptor locations, respectively, and would thus be a barely perceptible change based on average healthy human hearing. Furthermore, the predicted future upgraded RT Chlorination Station operation noise levels ranging from 45 to 50 dBA L_{eq} at approximately 200 feet south of the facility, at Vose Street, are several dB less than the 61 dBA L_{eq} outdoor ambient noise level measured at the baseline survey location on Vose Street. Therefore, the impact from Project operations would be less than significant.

NHC Chlorination Station

Construction

Less-Than-Significant with Mitigation Incorporated. Construction activity involving the operation of heavy equipment at the NHC Chlorination Station replacement facility is expected to take a total of 20 months, from September 2023 to April 2025. Anticipated on-site construction activities and processes would include site preparation (grading, excavation, compaction), building erection and paving, equipment installation, and interior finishing. Expected on-site construction equipment would include an excavator, front-end loader, compaction roller, cranes, backhoe, forklift, skid steers, and a concrete pump truck. Pile driving equipment and other impact-type equipment with high noise levels are not expected on site.

Based on reference noise emission level data from the FHWA RCNM (FHWA 2006), on-site excavators and skid steers may exceed the acoustic threshold of 75 dBA at a horizontal distance of 50 feet established in LAMC Section 112.05(a); however, the exceedances are small (no more than 1 to 2 dB) and could be eliminated with proper application of noise control measures. Therefore, MM-NOI-1 and MM-NOI-2 are recommended.

Operation

Less-Than-Significant Impact. Ambient noise levels surrounding the NHC Project Site are understood to be L_{eq} values based on the definition of “ambient noise” per LAMC 111.01(a). Although nighttime sound levels were not measured, Federal Transit Administration guidance indicates that in urban areas such as the NHC Project Site and its surroundings, the estimated nighttime sound levels would be 10 dB less than the daytime sound level (FTA 2018); with Table 3.13-1 indicating a baseline ambient L_{eq} of 66 dBA for the NHC vicinity, the estimated nighttime ambient L_{eq} would be 56 dBA. Therefore, in accordance with LAMC Section 112.04(b), the aggregate noise emission due to operation of on-site equipment associated with the replacement NHC Chlorination Station must not exceed 71 dBA L_{eq} during the day and 61 dBA L_{eq} at night at nearby residences.

Figure N-1 of Appendix D displays predicted sound propagation from the proposed new chlorination station operating at full capacity (i.e., delivering 4,000 ppd of chlorine equivalent). Operation noise exposure levels at the facades of nearby multi-family homes, identified by receptor position tags (H1, H2, D1, D2, D3, D4, M1, and M2) are all less than or equal to 56 dBA L_{eq} and thus compliant with the City’s noise ordinance threshold during nighttime hours. Therefore, the operational noise impact to the nearest sensitive receptor would be less than significant.

However, when the 100-kilowatt emergency generator would be undergoing regular testing (e.g., once per month or as otherwise required by statute and/or LADWP standards) and added to the facility noise emission under full-capacity conditions, Figure N-2 of Appendix D indicates that aggregate noise levels at off-site receptors east of the NHC Chlorinator Station could exceed 61 dBA L_{eq}. However, such testing would occur during daytime hours only, when the threshold of 71 dBA L_{eq} would be applicable. Therefore, the impact from Project operation would be less than significant.

NHOU2IR

Operation

Less-Than-Significant Impact. Noise sources associated with operation of the NHOU2IR would include electric motors associated with the various treatment systems. Some of the proposed equipment would be enclosed, thus minimizing noise levels. To obtain representative source noise data, noise measurements were conducted at a water treatment facility (the Orange County Water District's enhanced water treatment facility in Fountain Valley, California) that incorporates hydrogen peroxide quenching and UV treatment followed by biofiltration. The UV reactors themselves were found to have quite low noise levels; the noise from this equipment was barely audible compared to the noise from the associated decarb units (filtration) that were located adjacent to the UV reactors. The noise from the decarb units and the UV reactors was 69 dBA at a distance of 25 feet. At a distance of 200 feet (the approximate distance from the NHOU2IR facility boundary and the Radford Avenue receptor (R1), the corresponding noise level from this equipment would be approximately 51 dBA L_{eq}, which would be much less than the presumed nighttime noise level of 65 dBA L_{eq} for the site vicinity per LAMC 111.03 and the 70 dBA L_{eq} threshold per LAMC 111.03, 112.02, and 112.04(b).

Operation of the NHOU2IR would require minimal maintenance activities and minimal to no on-site personnel. Approximately every month, two standard tank trailer trucks would refill the on-site sulfuric acid supply. Once per year, the resin in the WBA exchange system would need removal by two trucks. Once per month, three standard tank trailer trucks would refill the hydrogen peroxide storage tanks. The lamps in the UV reactors would be changed about every 20 months, which would involve one round-trip truck trip. The carbon media in each LPGAC vessel would be replaced about once every other year. During this replacement process, the carbon media in one to two vessels would be replaced every week until the change-out of six vessels is completed, over a 1- to 1.5-month period. The spent carbon media would be transported off site. The vessels would be disinfected, loaded with fresh carbon media, and backwashed. This process would require three workers and approximately two to four truck trips per week.

The frequency of the above-described truck trips to and from the site represent minor additions to local roadway traffic. To put this into context, a 3 dB increase in traffic noise requires a doubling of traffic volumes (assuming unchanged vehicle speeds and proportions of vehicle types). Due to the anticipated NHOU2IR operations traffic being much less than a 10% traffic increase, the corresponding rise in local roadway traffic noise would be less than 1 dB, which would be indiscernible and consequently result in a less-than-significant noise impact.

In logarithmic combination, operation noise from the upgraded RT Chlorination Station at full capacity (2,000 ppd) and the NHOU2IR would be 56 dBA L_{eq} (i.e., the logarithmic sum of 54.2 dBA and 51 dBA) and thus still no greater than the allowable threshold of 70 dBA L_{eq}. Therefore, the anticipated concurrent acoustical contribution of the upgraded RT Chlorination Station operation and NHOU2IR operation would be less than significant.

Mitigation Measures

MM-NOI-1 LADWP shall ensure that the construction contractors' contract and the specifications for all Project-related activities at the NHC Chlorination Station include the following requirements during construction activities:

- Construction activities shall not occur between the hours of 9:00 p.m. and 7:00 a.m. Monday through Friday, 6:00 p.m. and 8:00 a.m. on Saturday, or at all on Sundays or national holidays.
- Stationary (a.k.a. "fixed") on-site operating construction equipment that operates continuously or on a frequently intermittent basis (e.g., portable generators, air compressors, pumps, ventilators, blowers) to support site work shall be located sufficiently distant and/or shielded from the nearest off-site noise-sensitive receptors (such as existing homes) to reduce their acoustic contribution to aggregate Project construction activity noise exposure levels at those receptor locations. Means for shielding (i.e., occlusion of direct sound path between the operating equipment and the receptor) can include one or more of the following options:
    - Advantageous placement of noise-producing equipment, so that the presence and position of on-site storage trailers, portable offices, or newly erected walls and structure effectively block line of sight between the noise emitter and the sensitive receptor location; or
    - Installation of temporary noise barriers, such as erection of edge-overlapping 1/2-inch-thick plywood sheets, or a flexible acoustical

"blanket" (sandwich of solid facings and inner acoustically absorptive media [glass fiber or mineral wool]) or "curtain" (e.g., mass-loaded vinyl of at least 1 pound per square foot) so as to block line of sight between the noise emitter and the noise-sensitive receptor location.

- Staging of construction equipment shall not occur within 20 feet of any noise- or vibration-sensitive land uses (e.g., existing homes).
- All noise-producing equipment and vehicles using internal combustion engines shall be equipped with exhaust mufflers (or for newer equipment, comparably performing diesel particulate filters, selective catalytic reduction, and other technology that indirectly attenuates combustion exhaust sound); air-inlet silencers where appropriate; and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specifications. Mobile or fixed "package" equipment (e.g., arc-welders, air compressors) shall be equipped with shrouds and noise control features that are readily available for that type of equipment.
- All mobile or fixed noise-producing equipment used on the Project facilities that are regulated for noise output by a federal, state, or local agency shall comply with such regulations while used in the course of Project activity.
- Idling of operating construction equipment shall be kept to a minimum (with maximum durations as regulated by California statute or applicable policies) and moved as far as practicable from noise-sensitive receptors.
- Electrically powered equipment shall be used instead of pneumatic or internal combustion powered equipment, where feasible.
- Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.
- The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only. Where practical and allowed, visual forms of hazard alerts should be encouraged. Audible alarms that are "smart" and feature adjustable output levels (i.e., they provide adequate signal-to-noise ratio with a decibel level that may be less than that of an otherwise fixed signal) based on the surrounding environment should also be encouraged.

MM-NOI-2 LADWP shall ensure that effective communication with local residents is maintained during construction, including keeping them informed of the schedule, duration, and progress of the construction, to help minimize likelihood of public complaints regarding noise and vibration levels.

Impact after Mitigation

Effectiveness of these mitigation measures would vary based on factors such as equipment type and condition and the site-specific locations of the noise emission sources and the off-site noise-sensitive receptors, but they would effectively reduce impacts to less-than-significant levels. Mitigation performance examples include the following quantified estimates:

- Installation of a temporary noise barrier would vary in effectiveness depending upon the degree to which the line of sight between the source and receiver is broken, and typically ranges from 5 to 10 dB. Exhibit N-1 in Appendix D features a sample matrix of anticipated barrier noise reduction performance (in dBA) based on the relationship of source and receptor positions, the position of source sound emission, and the installed barrier height. Exhibits N-2 and N-3 presents two samples of field-erected solid noise walls.
- Shortening idling duration for operating equipment can reduce that acoustical contribution by 3 dB for every halving of idling time.
- Doubling the horizontal, un-occluded distance between a noise-sensitive receptor and a stationary noise-emitting “point” source reduces its acoustic contribution by 6 dB.

Cumulatively, application of such measures would result in substantial decreases in the aggregate noise from on-site construction activities and nearby staging areas. Therefore, the impact related to noise from construction activity at the NHC Chlorination Station site, which is predicted to exceed the allowable 75 dBA threshold by only 1 to 2 dB, would be reduced to less than significant.

b) Generation of excessive groundborne vibration or groundborne noise levels?

Less-Than-Significant Impact. Construction activities that might expose persons to excessive groundborne vibration or groundborne noise could cause a potentially significant impact. In its Transportation and Construction Vibration Guidance Manual, the California Department of Transportation (Caltrans) indicates that continuous vibrations with a peak particle velocity (ppv) of approximately 0.1 inches per second (in/sec) begin to annoy people (Caltrans 2020). Heavier pieces of construction equipment, such as excavators, would have ppv of approximately 0.089 in/sec or less at a distance of 25 feet (FTA 2018). The largest magnitude of groundborne vibration expected from the Project construction activities would be at the NHC Chlorination

Station. Because groundborne vibration energy attenuates even over short distances, the estimated ppv at the facades of occupied multi-family buildings north of the proposed NHC Chlorination Station work area would be 0.021 in/sec during the operation of most pieces of equipment (e.g., excavator, front-end loader, backhoe). Operation of a roller during ground compaction activities would likely generate the highest levels of vibration, based on a reference ppv level of 0.21 in/sec at 25 feet (FTA 2018), but would attenuate to 0.05 in/sec ppv at a groundborne propagation distance of 65 feet; therefore, it would be lower than the Caltrans guidance-based annoyance threshold of 0.1 in/sec ppv.

At sufficient magnitudes, construction vibration also causes building damage risk. For older residential structures like those near the NHC Chlorination Station, the threshold criterion with respect to continuous or frequent intermittent vibration sources is 0.3 in/sec ppv. Hence, with 0.05 in/sec ppv as the largest magnitude of groundborne vibration expected from the Project construction activities, the Project would be well below this building damage risk threshold.

Based on anticipated groundborne vibration from Project Site construction activities being less than building damage risk and occupant annoyance thresholds, impacts would be less than significant.

Installed and operating electro-mechanical and other fluid-handling equipment at the Project Sites would be expected to produce minimal vibration and at levels that would be no greater than pre-existing levels at off-site occupied structures. Such equipment and systems that incorporate reciprocating or rotational components are designed, engineered, manufactured, tested, monitored, and maintained so as to minimize or prevent undue vibration (that would otherwise typically signal an operational fault or imbalance to be corrected with service or replacement) and thus help ensure long and reliable operation for the lifetime of the Project. Hence, impacts due to operational vibration would be less than significant.

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

Less-Than-Significant Impact. The Project Sites are located no closer than approximately 1.25 miles west of the Hollywood Burbank Airport and are not within the Los Angeles County Airport Influence Area. The Project Sites are located outside of the Airport Land Use Plan’s 65 dBA community noise equivalent level noise contour (Los Angeles County ALUC 1991); therefore, aircraft-related noise would not expose people in the area of the Project Sites to excessive noise levels. Potential aviation noise impacts would be less than significant.

References

Caltrans (California Department of Transportation). 2020. *Transportation and Construction Vibration Guidance Manual*. April 2020. Accessed April 5, 2022. https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf.

FHWA (Federal Highway Administration). 2006. *FHWA Roadway Construction Noise Model User's Guide*. FHWA-HEP-05-054. Final Report. U.S. Department of Transportation, FHWA. January 2006. https://www.fhwa.dot.gov/environment/noise/construction_noise/rcnm/rcnm.pdf.

FTA (Federal Transit Administration). 2018. *Transit Noise and Vibration Impact Assessment Manual*. FTA Report No. 0123. John A. Volpe National Transportation Systems Center. September 2018. Accessed April 5, 2022. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf.

Los Angeles County ALUC. 1991. *Los Angeles County Airport Land Use Plan*. Adopted December 19, 1991. Revised December 1, 2004. Accessed May 3, 2016. http://planning.lacounty.gov/assets/upl/data/pd_alup.pdf.

3.14 Population and Housing

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

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

No Impact. The Proposed Project would not include construction of new homes or businesses or the extension of roads or other infrastructure that would induce population growth.

The Proposed Project would help to restore the beneficial use of existing groundwater resources. The Project would offset the need for imported water supplies. In accordance with LADWP's 2020 Urban Water Management Plan and L.A.'s Green New Deal, the City has a target of sourcing 70% of its potable water from local sources by 2035 (LADWP 2021). The primary source of local water for the City is groundwater, and the City's primary source of groundwater is the SFB, including the RT Well Field, NHW Well Field, and NHOU. Because the Proposed Project would help to restore the existing beneficial uses of the aquifer and facilitate extractions within the City's water rights, it would not increase overall water supplies to the City in a manner that would induce population growth. The Proposed Project would not affect or increase LADWP's entitlement of groundwater and therefore would not result in the development of a new water source. Therefore, the Proposed Project would not indirectly induce population growth through the provision of additional water supply.

Due to the relatively low number of personnel required for Project construction and the expected relatively short duration of construction, workers would be drawn from local communities, and no population growth in the area would occur. The operation of the Proposed Project would not require a substantial number of personnel and thus would not induce population growth or the need for new housing in the area. No impact would occur relative to population growth.

b) Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact. No housing units would be affected at any of the Project Sites, which are located with existing LADWP properties. As such, the Proposed Project would not displace substantial numbers of existing people or housing, and no impact would occur.

References

LADWP (Los Angeles Department of Water and Power). 2021. 2020 Urban Water Management Plan for the Los Angeles Department of Water and Power. Adopted May 25, 2021. Accessed May 13, 2022. https://www.ladwp.com/cs/groups/ladwp/documents/pdf/mdaw/nzyy/~edisp/opladwpccb762836.pdf.

3.15 Public Services

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

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

Fire Protection?

No Impact. Fire protection for the Project Sites is provided by the Los Angeles Fire Department, and the monitoring of operations is provided by LADWP. The need for new or altered fire facilities is typically associated with an increase in population. As described in Section 3.14, Population and Housing, the Proposed Project would not increase population in the area of the Project Sites. Operation of the Proposed Project would occur within the sites of existing public facilities and would not require new or expanded fire protection facilities. As such, the Proposed Project would not generate a requirement for additional fire protection services. No impact would occur.

Police Protection?

No Impact. Police protection for the Project Sites is provided by the Los Angeles Police Department and LADWP security personnel. As described in Section 3.14, the Proposed Project would not increase population in the area of the Project Sites. The Project Sites are all on LADWP properties, which are enclosed with fencing. As such, the Proposed Project would not generate a requirement for additional police protection. No impact would occur.

Schools?

No Impact. The Proposed Project would not lead directly or indirectly to substantial population growth such that new or physically altered school facilities would be required. No impact would occur.

Parks?

No Impact. No feature of the Proposed Project would directly generate a demand for parks, nor would the Proposed Project lead directly or indirectly to substantial population growth such that new or physically altered park facilities would be required. No impact would occur.

Other Public Facilities?

No Impact. The Proposed Project involves the installation and operation of groundwater treatment equipment and facilities on sites that are generally used for groundwater pumping, water treatment, and water distribution purposes. No new housing or businesses would be constructed as part of the Proposed Project, nor would the Proposed Project directly or indirectly induce population growth in the area such that new or physically altered governmental facilities would be required to adequately provide services. No impact would occur.

3.16 Recreation

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. The Proposed Project would not include housing or any elements that would indirectly induce population growth such that the use of existing neighborhood or regional parks or other recreational facilities would increase. As such, no impact would occur.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact. The Proposed Project involves the installation of water treatment equipment and facilities on sites that are already used for groundwater pumping, water treatment, and water distribution purposes. It does not include recreational facilities or require construction or expansion of recreational facilities that might have an adverse physical effect on the environment. No feature of the Proposed Project would directly generate a demand for parks, nor would the Proposed Project lead directly or indirectly to substantial population growth such that the construction or expansion of recreational facilities would be required. No impact would occur.

3.17 Transportation

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	☐	☒
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☐	☒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☐	☒

Existing Setting

The Project Sites are located within the North Hollywood–Valley Village Community Plan Area in the City of Los Angeles. Regional access to the area is provided by SR-170 in the north–south direction. The nearest ramp interchanges with SR-170 are at Sherman Way to the north of the Project Sites and at Victory Boulevard to the south of the Project Sites.

NHW Chlorination Station

Vanowen Street is a designated Avenue II in the east–west direction within the Community Plan. It is located south of the NHW Chlorination Station and provides two lanes in each direction with a two-way center turn lane. Parking is available along some stretches of Vanowen Street. The NHW Chlorination Station has an existing driveway access along Vanowen Street across from the Rhodes Avenue/ Vanowen Street intersection.

Metro Route 165 provides bus transit service along Vanowen Street at a frequency of approximately every 20 minutes on weekdays and approximately every 30 minutes on weekends. The nearest bus stop in the westbound direction is located approximately 575 feet from the Project Site driveway on Vanowen Street; in the eastbound direction, the nearest bus stop is located approximately 530 feet from the Project Site driveway on Vanowen Street. Vanowen Street from Gentry Avenue to Valjean Avenue, which encompasses the Project Site driveway, is part of LADOT’s High-Injury Network (LADOT 2019).[8] Vanowen Street is also part of a Pedestrian Enhanced District (LADOT 2020a)[9] near the NHW Chlorination Station.

---

8 The High-Injury Network represents the 6% of City streets (over 450 miles) that account for 70% of deaths and severe injuries for people walking. LADOT focuses comprehensive safety improvements on a subset of the High-Injury Network where the highest concentrations of traffic deaths and severe injury crashes occur, represented by the Priority Corridors and Intersections.

9 As defined in the Supplemental Street Design Guide, Pedestrian Enhanced Districts include streets where pedestrian improvements are prioritized to provide safe and enjoyable walking connections to and from major destinations within communities. Pedestrian Enhanced Districts are selected based on safety, public health, equity, access, social, and/or economic benefits. Examples of pedestrian enhancements include wayfinding signage, street trees, pedestrian-scale street lighting, enhanced crosswalks, automatic pedestrian signals, reduced crossing length (e.g., corner extensions and crossing refuge islands), sidewalk widening, and public seating areas.

RT Chlorination Station

Vose Street is a Local Street between Laurel Canyon Boulevard and Lankershim Boulevard in the east-west direction. It is located south of the RT Project site and provides two travel lanes, one lane in each direction. Parking is generally available on both sides of the street. The Project Site has an existing driveway access along Vose Street. There are no transit routes along Vose Street. Both sides of the street have paved sidewalks and there are no marked bike facilities.

Radford Avenue is a designated Collector Street and provides two travel lanes, one lane in each direction. It has a two-way stop-controlled intersection with Vose Street near the RT Project Site. Parking is generally available on both sides of this street. There are no transit routes along Radford Avenue. Both sides of the street have paved sidewalks and there are no marked bike facilities.

NHC Chlorination Station

Vanowen Street is a designated Avenue II, and Morella Avenue, Dehougne Street, and Hinds Avenue are Local Streets that provide two travel lanes, one in each direction. Parking is available on both sides of the local streets. There are no transit stops or bike routes along these streets. The streets are constructed with paved sidewalks, except along the south side of Dehougne Street, adjacent to the NHC Project Site. There are no transit routes along the above-mentioned local streets near the NHC Chlorination Station. Metro Route 165 operates along Vanowen Street. The nearest bus stops to the NHC Chlorination Station are located along Vanowen Street near its intersection with Radford Avenue.

Construction Trip Generation

The trips generated from construction of the Project have been estimated for informational purposes. The Institute of Transportation Engineers' 2021 Trip Generation manual does not contain trip rates for the construction-related activities associated with the Proposed Project; therefore, the analysis of trip generation is primarily based on the number of construction employees or workers as well as the quantity of vendor- (material and concrete trucks) and haul-related truck estimates. These data were also used in the Project's Air Quality analysis. Each worker and truck is assumed to generate two daily trips to/from the Project Sites, one morning inbound and one afternoon outbound. The vendor and haul truck traffic would be evenly distributed through duration of the workday.

The Project's construction traffic was estimated on a monthly basis. Trip generation for workers and trucks is estimated for the peak phase of construction, which would occur for approximately 30 days in October 2023, during which the maximum number of total worker and truck trips would be required. This peak construction month was established based on applying a passenger car equivalent conversion factor to truck trips. As shown in Table 3.17-1, the peak construction of the Proposed

Project (consolidated among all three Project Sites) would generate 60 total daily trips, 22 a.m. peak hour trips and 22 p.m. peak hour trips. Applying the passenger car equivalent conversion factor for trucks, the peak construction of the Proposed Project (consolidated among all three Project Sites) would generate 98 total daily trips, 27 a.m. peak hour trips and 27 p.m. peak hour trips.

Table 3.17-1. Peak Phase Construction Trip Generation

Vehicle Type	Daily Quantity	Daily Trips	AM Peak Hour			PM Peak Hour		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trip Generation[a]								
Workers	19 workers	38	19	0	19	0	19	19
Vendor Trucks	3 trucks	6	1	0	1	0	1	1
Haul Trucks	8 trucks	16	1	1	2	1	1	2
	Total Trips	**60**	**21**	**1**	**22**	**1**	**21**	**22**
Trip Generation with PCE								
Workers (1.0 PCE)	19 workers	38	19	0	19	0	19	19
Vendor Trucks (2.0 PCE)	3 trucks	12	2	0	2	0	2	2
Haul Trucks (3.0 PCE)	8 trucks	48	3	3	6	3	3	6
	Total PCE Trips	**98**	**24**	**3**	**27**	**3**	**24**	**27**

Source: Appendix A.
Notes: PCE = passenger car equivalent.
See Appendix A for detailed trip generation summary for workers and trucks for construction schedule of the three Project Sites.
[a] Daily trips are a total of all inbound and outbound trips and represent one-way trips per the Air Quality analysis.

The following analysis describes the Project's potential impacts related to transportation systems.

a) Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

No Impact. The Mobility Plan 2035, which is one of the elements of the City's General Plan, lays out the policy foundation for achieving a transportation system that balances the needs of all road users (City of Los Angeles 2016). It also guides development of a City-wide transportation system that provides for the efficient movement of people and goods. The Mobility Plan 2035 is an update to the City's General Plan Transportation Element (1999) and incorporates complete streets principles. The Mobility Plan 2035 includes goals that define the City's high-level mobility goals and priorities: Safety First; Access for All Angelenos; World Class Infrastructure; Collaboration, Communication and Informed Choices; and Clean Environments and Healthy Communities. The primary emphasis of the plan is on maximizing the efficiency of existing and proposed transportation infrastructure through advanced transportation technology, reduction of vehicle trips, and focusing growth in proximity to public transit. The Mobility Plan also sets forth street designations and related standards that are intended to create a balance between traffic flow and other important street functions, including transit routes and stops, pedestrian environments, bicycle routes, and building design and site access. Vision Zero implements the Safety First goal of the Mobility Plan 2035, and aims to reduce transportation fatalities to zero by using extensive crash data analysis to identify priority corridors and intersections, and applying safety countermeasures.

Per LADOT guidelines, a project would not be shown to result in an impact merely based on whether a project would not implement a particular program, plan, policy, or ordinance. Many of these programs must be implemented by the City itself over time and over a broad area, and it is the intention of this threshold test to ensure that proposed development projects and plans do not preclude the City from implementing adopted programs, plans and policies.

The Project would upgrade the existing NHW and RT Chlorination Stations and construct a replacement facility at the NHC Chlorination Station. The Proposed Project improvements would occur entirely within existing LADWP properties. The Proposed Project would not require vacating a public right-of-way or relief from a required street dedication. Therefore, it would not impact a long-term mobility need as defined in the Mobility Plan or Community Plan.

As shown in Table 3.17-1, the construction of the Project would generate temporary construction-related trips, which would cease after Project construction is completed. As discussed in Section 3.17(b), below, the permanent operations would generate nominal daily trips, which would not warrant a Local Transportation Analysis.

Metrolink provides bus service along Vanowen Street that operates near all three Project Sites. The construction of the Proposed Project would not disrupt existing bus service, nor would it require the relocation of existing bus stops.

As discussed in this section, the Proposed Project would be served by existing roadway, transit, bicycle, and pedestrian facilities and would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. No impact would occur.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

No Impact. CEQA Guidelines Section 15064.3(b) focuses on the currently adopted vehicle miles traveled (VMT) metric for determining the significance of transportation impacts. The passage of SB 743 required the focus of transportation analysis to change from level of service or vehicle delay to VMT. The LADOT Transportation Assessment Guidelines (LADOT

Guidelines; LADOT 2020b) establish the guidelines and methodology for assessing transportation impacts for development and transportation projects based on the updated CEQA guidelines. The Project Sites are located in the City of Los Angeles. Therefore, the following assessment is based on LADOT's Transportation Assessment Guidelines and the Governor's Office of Planning and Research Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory; OPR 2018).

VMT is defined as "the amount and distance of automobile travel attributable to a project." *Automobile* refers to on-road passenger vehicles, specifically cars and light trucks. The Office of Planning and Research has clarified in its Technical Advisory (OPR 2018) that heavy-duty truck VMT is not required to be included in the estimation of a project's VMT. Other relevant considerations may include the effects of a project on transit and non-motorized travel.

The LADOT Guidelines recommend a threshold of significance for land use development (residential, office, and other land uses) and transportation projects. It should be noted that there is no significance threshold for the construction phase of a project. The construction of the Proposed Project would generate a relatively low number of temporary construction-related trips (see Table 3.17-1, which reflects trips during the peak month of construction and includes heavy-duty truck trips, although such trips have been excluded from VMT analysis by the Office of Planning and Research). The increase in VMT associated with Project construction would be temporary and would not cause a significant VMT impact in accordance with the LADOT Guidelines.

The anticipated nominal operations and maintenance traffic generated by the Project would be categorized under Subdivision (b)(3), qualitative analysis. Project operation is anticipated to retain the same operational characteristics as the existing chlorination stations. The stations would not be permanently staffed, but may be visited daily to monitor operations and conduct routine inspections, maintenance, and repairs as required. This would result in no additional trips related to operations at the NHW and RT Chlorination Stations and relatively minimal new daily personnel and truck trips related to operations at the NHC Chlorination Station. The operation of the NHOU2IR facility would also generate relatively minimal daily personnel and truck trips. Therefore, the operation of the Proposed Project can be screened out per the LADOT Guidelines, given that it would generate very few new daily trips.

Therefore, the Proposed Project would not conflict or be inconsistent with CEQA Guidelines Sections 15064.3(b)(1) and 15064.3(b)(3), and no impact would occur.

c) Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. The Project would not be making physical changes to the public right-of-way. The Proposed Project would not include any new driveways or introduce new vehicular access to the Project Sites along Vanowen Street or Vose Street. For the NHC Chlorination Station, the existing driveway along Dehougne Street would be removed, and a new driveway would be constructed adjacent to the new building in the east–west direction between Hinds Avenue and Morella Avenue (see Figure 4 in Section 1 of this IS/MND). The driveway is located along a Local Street and would not cause operational delays or queuing due to nominal and occasional Project-related trips. The driveway would have adequate visibility for vehicles turning in to or out of the driveway. The design and location of the driveway would not conflict with existing bicycle and pedestrian facilities. Therefore, the operational traffic from the Proposed Project at the new driveway at the NHC Chlorination Station would not increase hazards due to a geometric design feature or incompatible uses.

Access and egress for construction-related traffic (workers and trucks) to the Project Sites would be at the existing driveways. All required administrative, staging, storage, and laydown areas related to Project construction would be located within the respective LADWP property for each chlorination station. This would include an immediately adjacent LADWP-owned parcel on the northeast corner of Vanowen Street and Morella Avenue for construction of the NHC Chlorination Station. If required for any work in the public right-of-way, LADWP would prepare and implement a Worksite Traffic Control Plan per LADOT requirements to protect users, workers, and equipment in accordance with the California Manual on Uniform Traffic Control Devices, Part 6 (CalSTA and Caltrans 2014). As such, nominal trips generated by passenger cars and trucks entering and exiting the Project Sites would be able to do so without resulting in safety, operational, or capacity impacts at the driveways during construction or operation of the Project. Therefore, the Project would not substantially increase hazards due to a roadway design feature or introduce incompatible uses, and no impact would occur.

d) Would the project result in inadequate emergency access?

No Impact. Emergency access requirements are established in the City's Fire Code. Within the City of Los Angeles, fire prevention and suppression and emergency medical services are provided by the Los Angeles Fire Department. Public protection service and law enforcement are provided by the Los Angeles Police Department. The Project Sites are located in an established, developed urbanized area with ample access for emergency service providers. Construction activities would occur on the Project Sites, and no road closures in the public right-of-way or driveway closures are anticipated that would impact adopted emergency access or response plans. The contractor would follow standard construction practices and ensure that adequate on-site circulation and access is always maintained for all users. Therefore, the Project would not create impediments for emergency access, and no impact would occur.

References

CalSTA and Caltrans (California State Transportation Agency and California Department of Transportation). 2021. *California Manual on Uniform Traffic Control Devices: FHWA's MUTCD 2009 Edition, including Revisions 1 & 2 as amended for use in California*. 2014 Edition, Revision 6. March 30, 2021.

City of Los Angeles. 2016. *Mobility Plan 2035: An Element of the General Plan*. Los Angeles Department of City Planning. Adopted September 7, 2016. Accessed May 2022. https://planning.lacity.org/odocument/523f2a95-9d72-41d7-aba5-1972f84c1d36/Mobility_Plan_2035.pdf.

LADOT (Los Angles Department of Transportation). 2019. LADOT Livable Streets: Vision Zero: Maps: High-Injury Network. [Website.] https://ladotlivablestreets.org/programs/vision-zero/maps.

LADOT. 2020a. *City of Los Angeles Supplemental Street Design Guide*. LADOT, Bureau of Engineering. https://ladot.lacity.org/sites/default/files/documents/supplemental-design-guide-052620-final.pdf.

LADOT. 2020b. *LADOT Transportation Assessment Guidelines*. LADOT, Bureau of Planning & Development Services. July 2020. Accessed May 2022. https://ladot.lacity.org/sites/default/files/documents/2020-transportation-assessment-guidelines_final_2020.07.27.pdf

OPR (California Governor's Office of Planning and Research). 2018. Technical Advisory on Evaluating Transportation Impacts in CEQA. December 2018. Accessed May 2022. http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf.

3.18 Tribal Cultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☐	☒
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Potential impacts related to tribal cultural resources resulting from implementation of the Proposed Project were determined from the results presented in the Cultural Resources Assessment Report prepared for the Proposed Project, which is included as Appendix C to this IS/MND, and Native American consultation by LADWP in accordance with AB 52, which requires that a lead agency must consult with California Native American tribes who request formal consultation regarding potential impacts to tribal cultural resources. Proposed Project improvements at the NHW Chlorination Station do not include any ground disturbance. Therefore, Project components and construction activities related to the NHW Chlorination Station are not addressed in the Cultural Resources Assessment Report or analyzed in this IS/MND for potential impacts to tribal cultural resources.

a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?

No Impact. Tribal cultural resources include sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe. An NAHC Sacred Lands File search conducted for the Proposed Project was determined to be positive; however, the Sacred Lands File "sacred" land designation relates to the general regional area including and surrounding the Project Sites and does not necessarily equate to the existence of resources within the specific Project Sites. The NAHC identified 10 Native American tribal representatives who could potentially have specific and unreported knowledge of Native American cultural resources within the Project Sites. As of the publication date of this IS/MND, LADWP had consulted with all tribes that requested consultation on the Proposed Project in accordance with AB 52, specifically the Gabrieleño Band of Mission Indians–Kizh Nation and the Fernandeño Tataviam Band of Mission Indians. No tribal cultural resources were identified within the Project Sites based on these consultations. In addition, the CHRIS records search and other archival research did not identify prehistoric archaeological sites, sites of Native American origin, or isolated burials or cremations within 0.5 miles of the Project Sites. Therefore, there are no tribal cultural resources within the Project Sites that are listed or eligible for listing in the CRHR or a local register. The Proposed Project would not result in a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in a state or local register of historical resources, and no impact would occur.

ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less Than Significant with Mitigation Incorporated. As discussed in Section 3.18(a)(i), no known tribal cultural resources, including sites, places, landscapes, or objects, were identified within the Project Sites. However, the cultural resources assessment revealed that there is a potential for unrecorded prehistoric buried archaeological resources to exist within the Project Sites for several reasons. The previous cultural resources study conducted by McKenna (2010) classified North Hollywood as sensitive for prehistoric resources; however, while the Project Sites are within a geographic area that has experienced past Native American activity, they are also located within a highly urbanized area that has been extensively disturbed and developed over time. An NAHC Sacred Lands File search for the Project Sites was determined to be positive, and the associated Tribe was consulted. However, the CHRIS records search did not identify prehistoric archaeological sites, sites of Native American origin, or isolated burials or cremations within 0.5 miles of the Project Sites. A review of the historical maps shows that waterways existed around the Project Sites that have the potential to support prehistoric occupation; however, the map appears to be highly generalized and therefore the distance of the waterways in relation to the Project Sites may vary significantly. Project-level analysis determined that no Native American villages are known to have existed in the immediate vicinity of the Project Sites. Nonetheless, although not expected to occur, unknown subsurface archaeological resources, including tribal cultural resources, could be encountered during ground-disturbing activities during the construction of the Proposed Project.

As discussed in Section 3.5(b) of this IS/MND, in the event that previously unknown archaeological resources are encountered during construction activities, the Proposed Project would be subject to California Public Resources Code Section 21083.2(i) regarding provisions related to the accidental discovery of archaeological resources. These provisions include immediately halting construction work in the vicinity of the find (within a 50-foot buffer) and LADWP retaining a qualified archaeologist meeting the Secretary of the Interior’s standards to evaluate the significance of and determine appropriate treatment for the resource in accordance with the provisions of CEQA Guidelines Section 15064.5 and the National Historic Preservation Act. If the resource is determined to be potentially of Native American in origin, MM-TCR-1 would be implemented to reduce impacts to a less-than-significant level. With compliance with California Public Resources Code Section 21083.2(i), implementation of MM-TCR-1, and incorporation of BMP-2 regarding cultural resources awareness training, as outlined in Section 3.5(b), impacts to tribal cultural resources would be less than significant.

Mitigation Measures

MM-TCR-1 In the event that an archaeological resource inadvertently discovered during Project construction is determined to be potentially of Native American origin based on the initial assessment of the find by a qualified archaeologist pursuant to California Public Resources Code Section 21083.2(i), the Native American tribes that consulted on the Proposed Project pursuant to California Assembly Bill 52 shall be notified and be provided information about the find to allow for early input from the tribal representatives with regard to the potential significance and treatment of the resource.

If, as a result of the resource evaluation and tribal consultation process, the resource is considered to be a tribal cultural resource that has been determined, in accordance with California Public Resources Code Section 21074, to be eligible for inclusion in the CRHR or a local register of historical resources or determined to be significant by LADWP (the CEQA lead agency), the qualified archaeologist shall monitor all remaining ground-disturbing activities in the area of the resource, and a tribal monitor from a consulting Native American tribe shall be invited to monitor the ground-disturbing activities. All monitoring performed shall be compensated. The tribal monitor shall be ancestrally affiliated with the Project area and qualified by their tribe to monitor tribal cultural resources.

The input of all consulting tribes shall be taken into account in the preparation of any required treatment plan for the resources prepared by the qualified archaeologist. Work in the area of the discovery may not resume until evaluation and treatment of the resource is completed and/or the resource is recovered and removed from the site. Construction activities may continue on other parts of the construction site while evaluation and treatment of the resource takes place.

References

McKenna, J. 2010. *A Cultural Resources Overview and Preliminary Assessment of the Pacoima/Panorama City Redevelopment Plan Amendment/Expansion Project Area, Los Angeles County, California*. On file at the CHRIS South Central Coastal Information Center, California State University, Fullerton.

3.19 Utilities and Service Systems

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

a) Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less-Than-Significant Impact. Operation of the NHOU2IR would require periodic backwashing of the WBA exchange system and the LPGAC vessels. These processes would require the discharge of approximately 333,000 gallons of wastewater to the sewer system on an annual basis, spread over several flushing events. The wastewater would be discharged to the City's sanitary sewer collection system, which is operated and maintained by City of Los Angeles Bureau of Sanitation (LASAN). However, the backwash wastewater would be routed to a 100,000-gallon holding tank, from which it would be released to the sanitary sewer at a rate that would not exceed the available capacity of the sewer lines. Wastewater from the Project would be discharged to the existing sewer line beneath Vose Street. The response received from LASAN to a Sewer Capacity Availability Request during the design of the NHOU2IR indicated that the line has adequate capacity to handle the discharge. Wastewater collected in the area of the Project Sites is conveyed by interceptor lines and ultimately treated at City water reclamation plants; specifically, the Los Angeles–Glendale Water Reclamation Plant and the Hyperion Water Treatment Plant.

Because wastewater discharges associated with the Proposed Project would be process water discharges rather than conventional sanitary sewer discharges, the Proposed Project would be subject to the Industrial Waste Control Ordinance (LAMC Section 64.30). It is anticipated that this process water would be of suitable quality to be conveyed and treated at the regional water reclamation facilities. However, pursuant to the Industrial Waste Control Ordinance, LADWP would be required to coordinate with LASAN to obtain an industrial wastewater permit. Compliance with industrial wastewater permits protects the City's sewer collection and treatment systems, prevents regulated toxic wastewater constituents from passing through to receiving waters, and ensures that applicable federal or state statutes, rules, or regulations are adhered to (LASAN 2022a).

LADWP would satisfy requirements for industrial waste discharge through consultation with LASAN's Industrial Waste Management Division. Compliance with the provisions of the permit would ensure that the Project would not result in violation of wastewater treatment requirements. Compliance with LAMC Section 64.30, including any Project-specific permit requirements that may be imposed by the Industrial Waste Management Division, would ensure that the wastewater from the Proposed Project would not cause exceedances of wastewater discharge requirements.

The Proposed Project would not generate substantial increased stormwater runoff, such that new stormwater drainage facilities or facility expansion would be required. As described in Section 3.10, Hydrology and Water Quality, of this IS/MND, the Proposed Project may slightly increase impervious areas on the Project Sites. However, this minor increase in impervious area would not have a substantial effect on the amount of stormwater runoff that would come from the sites. Further, the Proposed Project would comply with the City of Los Angeles Low Impact Development Ordinance, which requires management of stormwater on site, including measures to capture and infiltrate stormwater into pervious surfaces.

The Project would not require the construction of new or relocation of existing electric power, natural gas, or telecommunications infrastructure. Therefore, impacts would be less than significant.

b) ***Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?***

Less-Than-Significant Impact. The Proposed Project would involve operation of new and modified chlorination stations and the NHOU2IR. The Proposed Project would disinfect water pumped from the RT Well Field, the NHW Well Field, and the western portion of the NHOU, all of which would be operated consistent with LADWP's historical use of its well fields to help meet current and projected demand for drinking water in the City of Los Angeles. This disinfection capability would help ensure the reliability and sustainability of the City's drinking water system by reducing dependence on imported water supplies.

As discussed in Section 3.19(a), periodic backwashing of the WBA exchange system and the LPGAC vessels would require approximately 333,000 gallons of water annually. However, this water would be supplied from a dedicated tank that would hold 100,000 gallons of effluent from the NHOU2IR treatment facility, and no substantial new water supplies would be required for this purpose. Therefore, sufficient water supplies would be available to serve the Project and reasonably foreseeable future development, and impacts would be less than significant.

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

Less-Than-Significant Impact. As discussed in Section 3.19(a), wastewater from the Project would be discharged to the existing sewer line beneath Vose Street. This volume of wastewater would be minor in the context of the wastewater treatment capacities of Los Angeles–Glendale and/or Hyperion Water Reclamation Plants, which have capacities of 20 million gallons of wastewater per day and 450 million gallons of wastewater per day, respectively (LASAN 2022b). The largest volume of wastewater produced by a single backwashing event would be 55,500 gallons, which would occur twice per year during backflushing of the WBA system. This volume would represent approximately 0.28% of the daily wastewater capacity of the Los Angeles–Glendale Water Reclamation Plant and approximately 0.01% of the daily capacity of the Hyperion Water Reclamation Plant. As such, the amount of wastewater produced by the Proposed Project would be minor relative to the amount of water that is processed at LASAN facilities, and the amounts of wastewater related to Project operation activities would not require new wastewater treatment facilities. Impacts would be less than significant.

d) Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less-Than-Significant Impact. The total volume of excavated material during Project construction is estimated to be approximately 3,000 loose cubic yards, which is the volume based on expansion due to an increase in void spaces after the material is excavated from its fully compacted state in the ground. During excavation of the NHC Chlorination Station, an average of approximately 80 loose cubic yards per day would be generated over an approximately 2-month period. This would be a very small volume both in terms of daily throughput and current remaining capacity of area landfills (County of Los Angeles 2019), and impacts would be less than significant.

Operation of the Proposed Project would generate approximately 22 cubic yards of LARW waste once per year during replacement of the resin in the WBA exchange vessels. This material must be transported to a facility approved for disposal of LARW, dependent on the concentration of the uranium in the resin. For TENORM, the closest such facility is Clean Harbors Buttonwillow in the Central Valley. For LLRW, the closest such facility is Energy Solutions Clive Disposal Facility in Clive, Utah. The volume of waste involved in the annual replacement of the WBA resin at the NHOU2IR facility would represent a small fraction of the capacity of the above mentioned facilities, and impacts would be less than significant.

e) Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Less-Than-Significant Impact. Construction activities would generate construction waste, such as equipment packaging, construction scrap, and debris. In accordance with the City's Construction and Demolition Waste Recycling Ordinance, construction would incorporate source reduction techniques and recycling measures and would maintain a recycling program to divert waste. These measures would minimize the amount of construction debris generated by the Proposed Project that would need to be disposed of in an area landfill. Any non-recyclable and hazardous construction waste generated would be disposed of at a landfill approved to accept such materials.

Project operation would produce sources of solid waste. In addition to the LARW waste described in Section 3.19(d), the 284 UV reactor lamps in the AOP reactor would need to be replaced approximately every 20 months. Because the lamps contain mercury, spent lamps would be returned to the manufacturer for recycling. Additionally, the carbon media in each LPGAC vessel would need to be replaced about once every 2 years. The spent carbon media would be transported to a recycling facility for regeneration and reuse. As such, impacts would be less than significant.

References

CalRecycle (California Department of Resources Recycling and Recovery). 2019. "SWIS Facility/Site Activity Details Clean Harbors Buttonwillow LLC (15-AA-1257)" Webpage. Accessed May 13, 2022. https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/3922?siteID=733.

County of Los Angeles. 2019. Waste Disposal by Jurisdiction of Origin at Permitted Municipal Solid Waste Facilities in Southern California. Webpage accessed on June 20, 2022. https://dpw.lacounty.gov/epd/swims/ShowDoc.aspx?id=11230&hp=yes &type= PDF.

LASAN (Los Angeles Sanitation). 2022a. "Required Permit and Reporting." [Webpage.] Accessed May 13, 2022. https://www.lacitysan.org/san/faces/home/portal/s-lsh-wwd/s-lsh-wwd-cw/s-lsh-wwd-cw-iwm/s-lsh-wwd-cw-iwm-rpr?_afrLoop=4121482389700102&_afrWindowMode=0&_afrWindowId=null&_adf.ctrl-state=bsvy96qgg_309#!%40%40%3F_afrWindowId%3Dnull%26_afrLoop%3D4121482389700102%26_afrWindowMode%3D0%26_adf.ctrl-state%3Dbsvy96qgg_313.

LASAN (Los Angeles Sanitation). 2022b. "Water Reclamation Plants." Webpage. Accessed May 13, 2022. https://www.lacitysan.org/san/faces/wcnav_externalId/s-lsh-wwd-cw-p?_adf.ctrl-state=bsvy96qgg_232&_afrLoop=4120635952259816&_afrWindowMode=0&_afrWindowId=ystj760cp#!%40%40%3F_afrWindowId%3Dystj760cp%26_afrLoop%3D4120635952259816%26_afrWindowMode%3D0%26_adf.ctrl-state%3Dbsvy96qgg_236.

3.20 Wildfire

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact. The Project Sites are not located within a very high fire hazard severity zone (VHFHSZ) (CAL FIRE 2011). The Project Sites are located in urban, built-up, flat areas that are not in the vicinity of wildlands. Additionally, none of the Proposed Project components are located on streets designated as primary or secondary disaster routes, as designated by the Los Angeles County Public Works Department (Los Angeles County Public Works Department 2012). All construction activities would occur within or immediately adjacent to existing LADWP facilities and on LADWP property. As such, the Project would not substantially impair an adopted emergency response plan or emergency evacuation plan, and no impact would occur.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

No Impact. As described in Section 3.20(a), the Project Sites are not within a VHFHSZ. The Project Sites are located in urban, built-up, flat areas that are not in the vicinity of wildlands. Additionally, the Project Sites are located within existing LADWP properties. As such, the Proposed Project would not exacerbate wildfire risk, and no impact would occur.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

No Impact. As described in Sections 3.20(a) and 3.20(b), the Project Sites are not within a VHFHSZ. The Project Sites are located in urban areas that are not in the vicinity of wildlands. Additionally, the Project Sites are within existing LADWP property. As such, the Proposed Project would not require the installation of infrastructure that would exacerbate wildfire risk, and no impact would occur.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No Impact. As described in Sections 3.20(a), 3.20(b) and 3.20(c), the Project Sites are not within a VHFHSZ. The Project Sites are located in urban areas that are not in the vicinity of wildlands. Additionally, the Project Sites are flat and built-up and are not susceptible to slope instability. As such, the Proposed Project would have no impact related to post-fire flooding or landslides.

References

CAL FIRE (California Department of Forestry and Fire Protection). 2011. Los Angeles, Very High Fire Hazard Severity Zones in LRA as recommended by CAL FIRE. Accessed May 17, 2022. https://osfm.fire.ca.gov/media/5830/los_angeles.pdf.

Los Angeles County Public Works Department. 2012. Disaster Route Maps (by City), Los Angeles – Valley. Accessed June 2022. https://dpw.lacounty.gov/dsg/DisasterRoutes/map/Los%20Angeles%20Valley%20Area.pdf.

3.21 Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, 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) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, 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 Incorporated. The Project Sites are owned by LADWP and have been used for public utilities purposes for many decades. The Project Sites are disturbed and developed under existing conditions and are surrounded by urbanized areas. The proposed addition of water disinfection equipment and facilities would not degrade the quality of the environment, as it would occur on sites that are already disturbed and are already primarily used for public utilities purposes. As described in Section 3.4, Biological Resources, no special-status plant or wildlife species are anticipated to occur within or close to the Project Sites. Nesting birds in the area of the Project Sites would have the potential to be disturbed by construction activities. However, nesting birds would be protected via compliance with the Migratory Bird Treaty Act, as required under BMP-1. Therefore, the Proposed Project would not have the potential to 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, or reduce the number or restrict the range of a rare or endangered plant or animal. Impacts would be less than significant.

While there are no known important examples of California prehistory on the Project Sites, there is the potential for previously unknown archaeological resources to be encountered on the site during ground-disturbing activities associated with construction of the Proposed Project. However, the Project would comply with California Public Resources Code Section 21083.2(i) regarding provisions related to the accidental discovery of archaeological resources, as well as Health and Safety Code Section 7050.5 and Public Resources Code 5097.98 related to human remains. In addition, based on the results of AB 52 consultation that LADWP has conducted with interested local tribal representatives, the broader Project region is sensitive for tribal cultural resources, and such resources, although not known to exist within the Project Sites, could lie beneath the surface and may be inadvertently discovered during ground-disturbing construction activities. Because the potential to encounter tribal cultural resources exists, MM-TCR-1 (related to the inadvertent discovery, evaluation, and treatment of tribal cultural resources) would be implemented. This measure includes, as necessary, the opportunity for a tribal monitor from a consulting Native American tribe to observe the ground-disturbing activities. With compliance with California Public Resources Code Sections 5097.98 and 21083.2(i), as well as Health and Safety Code Section 7050.5, implementation of MM-TCR-1, and incorporation of BMP-2 regarding cultural resources awareness training, as outlined in Section 3.5(b), impacts to archaeological and tribal cultural resources would be less than significant with mitigation incorporated.

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

Less-Than-Significant Impact. A significant environmental impact could result from the combined effects of two or more projects that are closely related geographically (i.e., within the same vicinity or greater region, depending on the nature and scope of the project and environmental factor under consideration) and in time (i.e., recently completed projects, projects currently under construction, and/or projects anticipated to be implemented in the near-term future). In general, the effects of a proposed project when combined with the effects of past projects (other than recently completed projects) are accounted for in the baseline conditions under CEQA for the analysis of the proposed project's environmental impacts.

The analysis of the combined impacts of more than one project allows decision makers to consider the potential consequences of a project in a broader environmental context rather than in isolation. This is necessary because a significant combined impact could result even when the individual impacts of related projects are less than significant. The combined effects of several related projects with individually less-than-significant impacts may also be determined to be less than significant on a cumulative basis. In addition, even if the combined effects of several related projects are determined to be significant, an individual project's incremental contribution to those significant combined effects may be determined to be less than cumulatively considerable and therefore less than significant.

The Project Sites are owned by LADWP, and the majority of the properties has been used for public utilities purposes for many decades. The Project Sites are disturbed and developed under existing conditions and are surrounded by urbanized areas, including established residential neighborhoods, industrial functions, major arterial roads, and highways. Because the Project is a public utilities function located within existing public utilities properties, it would not generally represent a substantial change in the existing environment such that it would make a cumulatively considerable contribution to a significant impact when considered in combination with impacts from closely related projects. Due to the temporary construction period for the Proposed Project, the highly localized nature of construction activities that would be involved, and the relatively minor operational activities that would be required, Proposed Project activities are not expected to create cumulatively considerable impacts on the environment. Specific environmental factors addressed throughout this IS/MND are discussed in greater detail below with respect to cumulative impacts.

As shown in the environmental analysis in this IS/MND, the Proposed Project was determined to have no impact related to aesthetics, agriculture and forestry resources, energy, land use and planning, mineral resources, population and housing, public services, recreation, transportation, or wildfire. Because the Project would have no impact in relation to these factors, it would not have the potential to contribute to a significant effect created by the combined impacts of closely related projects.

Impacts for all other environmental factors considered in this IS/MND were determined to be less than significant without the need for mitigation measures, except for impacts related to noise created by construction activity and tribal cultural resources not currently listed or identified as eligible for listing in the CRHR, which were determined to be less than significant with the incorporation of mitigation measures.

Air pollutant and GHG emissions, as assessed under CEQA, are inherently recognized as cumulative impacts. Project-level thresholds of significance for these emissions are used in the determination of whether a project's individual emissions would make a cumulatively considerable contribution to a significant impact. Based on the analysis contained in this IS/MND, both air quality and GHG emissions would remain substantially below the defined thresholds of significance. Therefore, the Proposed Project would not make a cumulatively considerable contribution to a wider adverse air quality or GHG impact.

The use of energy is likewise considered an impact with potentially broader effects based on the consumption of limited resources often required to produce energy. However, it was determined in this IS/MND that Project energy consumption during construction would be relatively minor, would not be wasteful, and would be temporary in nature. During post-construction operation, it was determined that the Project would result in a net reduction in energy consumption when compared to energy required to import drinking water into Southern California from other regions, which would be offset by the use of groundwater enabled by the Project. Therefore, the Proposed Project would not make a cumulatively considerable contribution to a wider adverse impact related to energy consumption and conservation.

Potential impacts to certain resources, including biological resources (nesting birds) and the inadvertent discovery of unknown buried archaeological, paleontological, or tribal cultural resources as well as human remains were determined in this IS/MND to be less than significant through compliance with existing policies or regulations, with the implementation of applicable BMPs established as part of the Proposed Project, or with the implementation of mitigation measures introduced based on the results of the environmental analysis contained in the IS/MND. However, such impacts, should they occur, are site-specific in nature, are limited to the Project construction footprint, and therefore would not make a cumulatively considerable contribution to similar potentially adverse impacts resulting from other closely related projects in the vicinity.

Geology and hydrology impacts related to increased potential for erosion, runoff, siltation, flooding, and pollution discharges would also generally be site-specific in nature, but such impacts could also extend off site and result in a larger impact when combined with similar impacts from closely related projects in the area. However, given the nature of the Proposed Project and the existing setting and through compliance with existing policies or regulations (NPDES Permit and SWPPP), off site impacts would be largely eliminated and therefore would not make a cumulatively considerable contribution to a more widespread impact potentially created by the combined effects of closely related projects.

Although determined to be less than significant, geology impacts related to seismic hazards and hazards created by various soil conditions pertain to the potential impacts from the environment on the Proposed Project rather than impacts to the environment caused by the Project. In this regard the Project would not make a cumulatively considerable contribution to similar impacts experienced by closely related projects in the area.

Impacts related to noise have the potential to affect a limited area beyond the boundaries of the Project Sites. However, the assessment of such impacts in this IS/MND and the conclusion of a less-than-significant impact with mitigation incorporated accounted for the combined effect of the Project and the surrounding existing setting. Furthermore, no major projects that would contribute to a significant combined impact related to noise have been identified in the vicinity of the Proposed Project (Los Angeles Department of City Planning n.d.).

The NHOU2IR would require some potentially hazardous materials during operation. These materials would be contained and confined to the Lankershim Yard property or in transport vehicles traveling to and from the property. Compliance with required state and federal laws as well as safeguards incorporated into the Project to monitor for, limit, and contain accidental releases would minimize the potential for hazardous materials to be released from the Project Sites. As such, hazardous materials associated with the Proposed Project are not anticipated to combine with those used for other development projects in the area to create a cumulatively considerable effect.

With regard to groundwater quality, any Project impact would be beneficial. Therefore, the Proposed Project would not have the potential to create a cumulatively considerable negative impact on groundwater quality.

While the Proposed Project would involve extraction of groundwater, this would be consistent with LADWP’s historical use of its well fields to help meet current and projected demand for drinking water in the City of Los Angeles. This Project is not anticipated to have a material effect, either alone or in conjunction with other actions, on groundwater elevations over time. The SFB, within which the Project Sites are located, is an adjudicated basin and is administered by the ULARA Watermaster. Groundwater extraction from the SFB is limited by court-defined rights recorded in the *Judgment of the California Superior Court in Case No. 650079, The City of Los Angeles vs. The City of San Fernando, et al.,* dated January 26, 1979. Extracted water is “charged” to the City’s pumping entitlement, as stipulated in the 1979 judgment. LADWP is also allowed to accumulate credit for stored groundwater from in-lieu pumping or additional spread water. Groundwater extraction from the RT Well Field, the NHW Well Field, and the western portion of the NHOU would continue to be limited by LADWP’s adjudicated water rights. As such, the Proposed Project’s impacts on the groundwater supply would be less than cumulatively considerable.

Impacts to utilities and service systems could contribute to a significant impact from the combined effects of more than one project on the limited capacity of services such as wastewater treatment, water supply, and solid waste disposal. The Proposed Project, during the operation of the NHOU2IR, would discharge wastewater to existing sewer lines adjacent to Lankershim Yard at rates that would not exceed the available capacity of the lines. These rates were determined by LASAN. In the event that future related projects were to generate wastewater that would discharge into the sewer lines, those projects would also be required to discharge at a rate that would not exceed the available capacity of the lines as determined by LASAN; therefore, the Project would not contribute an exceedance of the capacity of the sewer lines. As discussed in this IS/MND, the Project would create no impacts related to stormwater, electrical power, natural gas, or telecommunications facilities or supplies and therefore could not make a cumulatively considerable contribution to a wider impact. As discussed, the Project would generate solid waste in the form of excavated material during construction. However, this would be temporary and would represent a very small volume both in terms of daily throughput and current remaining capacity of area landfills. Therefore, it would represent a less than cumulatively considerable incremental contribution by the Project to any combined effect created by other projects.

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

Less Than Significant with Mitigation Incorporated. Numerous factors discussed above in this IS/MND pertain to the quality of the human environment. Based on the analysis contained in the IS/MND, the environmental impacts created by the proposed project in relation to most of these factors would be absent or less than significant. As discussed in Section 3.13(a), Project construction activities in the vicinity of the NHC Project Site could generate a substantial temporary increase in ambient noise levels in excess of applicable standards established in the local ordinances. Therefore, MM-NOI-1 and MM-NOI-2 would be required. With the incorporation of these mitigation measures, the Project would not have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly. Impacts would be less than significant with mitigation incorporated.

References

Los Angeles Department of City Planning. n.d. Major Projects. Accessed June 2022. https://ladcp.maps.arcgis.com/apps/MapJournal/index.html?appid=b06f97ccf94741fdaad27443013eead1.

INTENTIONALLY LEFT BLANK

4 REPORT PREPARERS

Lead Agency

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

Marshall Styers, Project Manager
Jane Hauptman, Environmental Affairs Officer

Technical Assistance Provided By
Dudek
27372 Calle Arroyo
San Juan Capistrano, California 92675

Contributors

Eric Wilson, Principal
Rachel Struglia, Project Manager
Laura Masterson, Environmental Planner
Jeffrey Fenner, Environmental Consultant
Matthew Morales, Air Resources Specialist
Galen Hagen, Biologist
Linda Kry, Cultural Resources Specialist
Adam Giacinto, Cultural Resources Specialist
Michael Williams, Paleontologist
Mark Storm, Noise Specialist
Sabita Tewani, Transportation Specialist
Laurel Porter, Technical Editor
‘Olana Chow, GIS Analyst
Raoul Ranoa, Graphics Specialist

INTENTIONALLY LEFT BLANK

APPENDIX A

Air Quality and Greenhouse Gas Modeling Outputs

LADWP North Hollywood Central Treatment Project
Total Construction Emissions

	Daily Emissions (lb/day)									Monthly Emissions (tons/month)										Daily Onsite Emissions (lb/day)				Daily Offsite Emissions (lb/day)			
	VOC	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	VOC	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	CO2e	NOx	CO	PM10	PM2.5	NOx	CO	PM10	PM2.5
Jul-23																											
Offroad Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Vehicles	0.00	0.15	0.07	0.00	0.01	0.01	149.22	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	1.64	0.00	0.00	1.71					0.15	0.07	0.01	0.01
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Jul-23	**0.00**	**0.15**	**0.07**	**0.00**	**0.01**	**0.01**	**149.22**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.64**	**0.00**	**0.00**	**1.71**	**0.00**	**0.00**	**0.00**	**0.00**	**0.15**	**0.07**	**0.01**	**0.01**
Aug-23																											
Offroad Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Vehicles	0.00	0.16	0.20	0.00	0.01	0.01	189.73	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	2.09	0.00	0.00	2.16					0.16	0.20	0.01	0.01
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Aug-23	**0.00**	**0.16**	**0.20**	**0.00**	**0.01**	**0.01**	**189.73**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.09**	**0.00**	**0.00**	**2.16**	**0.00**	**0.00**	**0.00**	**0.00**	**0.16**	**0.20**	**0.01**	**0.01**
Sep-23																											
Offroad Equipment	0.62	5.23	6.81	0.01	0.20	0.19	1349.09	0.44	0.20	0.01	0.06	0.07	0.00	0.00	0.00	14.84	0.00	0.00	15.60	5.23	6.81	0.20	0.19				
Vehicles	0.02	1.39	0.63	0.01	0.11	0.05	1342.97	0.00	0.19	0.00	0.02	0.01	0.00	0.00	0.00	14.77	0.00	0.00	15.38					1.39	0.63	0.11	0.05
Earth Moving	–	–	–	–	0.25	0.03	–	–	–	–	–	–	–	0.00	0.00	–	–	–	–	–	–	0.25	0.03				
Sep-23	**0.64**	**6.62**	**7.45**	**0.03**	**0.56**	**0.27**	**2692.06**	**0.44**	**0.38**	**0.01**	**0.07**	**0.08**	**0.00**	**0.01**	**0.00**	**29.61**	**0.00**	**0.00**	**30.99**	**5.23**	**6.81**	**0.45**	**0.22**	**1.39**	**0.63**	**0.11**	**0.05**
Oct-23																											
Offroad Equipment	1.17	10.54	11.54	0.02	0.45	0.41	2142.80	0.69	0.31	0.01	0.11	0.11	0.00	0.00	0.00	21.93	0.01	0.00	23.06	10.54	11.54	0.45	0.41				
Vehicles	0.04	1.74	1.28	0.02	0.15	0.06	1803.47	0.01	0.23	0.00	0.02	0.01	0.00	0.00	0.00	19.84	0.00	0.00	20.60					1.74	1.28	0.15	0.06
Earth Moving	–	–	–	–	0.25	0.03	–	–	–	–	–	–	–	0.00	0.00	–	–	–	–	–	–	0.25	0.03				
Oct-23	**1.20**	**12.28**	**12.81**	**0.04**	**0.84**	**0.51**	**3946.27**	**0.70**	**0.54**	**0.01**	**0.13**	**0.13**	**0.00**	**0.01**	**0.00**	**41.77**	**0.01**	**0.01**	**43.66**	**10.54**	**11.54**	**0.70**	**0.45**	**1.74**	**1.28**	**0.15**	**0.06**
Nov-23																											
Offroad Equipment	1.17	10.54	11.54	0.02	0.45	0.41	2142.80	0.69	0.31	0.01	0.11	0.11	0.00	0.00	0.00	21.93	0.01	0.00	23.06	10.54	11.54	0.45	0.41				
Vehicles	0.02	0.68	1.22	0.01	0.07	0.03	900.75	0.00	0.09	0.00	0.01	0.01	0.00	0.00	0.00	9.91	0.00	0.00	10.20					0.68	1.22	0.07	0.03
Earth Moving	–	–	–	–	0.25	0.03	–	–	–	–	–	–	–	0.00	0.00	–	–	–	–	–	–	0.25	0.03				
Nov-23	**1.19**	**11.23**	**12.76**	**0.03**	**0.76**	**0.47**	**3043.54**	**0.70**	**0.40**	**0.01**	**0.11**	**0.13**	**0.00**	**0.01**	**0.00**	**31.84**	**0.01**	**0.00**	**33.26**	**10.54**	**11.54**	**0.70**	**0.45**	**0.68**	**1.22**	**0.07**	**0.03**
Dec-23																											
Offroad Equipment	0.85	8.04	8.82	0.01	0.35	0.33	1384.84	0.40	0.18	0.01	0.08	0.08	0.00	0.00	0.00	13.60	0.00	0.00	14.22	8.04	8.82	0.35	0.33				
Vehicles	0.03	0.70	1.53	0.01	0.08	0.03	1002.04	0.01	0.09	0.00	0.01	0.02	0.00	0.00	0.00	11.02	0.00	0.00	11.32					0.70	1.53	0.08	0.03
Earth Moving	–	–	–	–	0.00	0.00	–	–	–	–	–	–	–	0.00	0.00	–	–	–	–	–	–	0.00	0.00				
Dec-23	**0.88**	**8.74**	**10.36**	**0.02**	**0.43**	**0.36**	**2386.88**	**0.41**	**0.27**	**0.01**	**0.09**	**0.10**	**0.00**	**0.00**	**0.00**	**24.62**	**0.00**	**0.00**	**25.54**	**8.04**	**8.82**	**0.35**	**0.33**	**0.70**	**1.53**	**0.08**	**0.03**
ANNUAL SUMMARY - MAXIMUM DAILY	**1.20**	**12.28**	**12.81**	**0.04**	**0.84**	**0.51**	**3946.27**	**0.70**	**0.54**											**10.54**	**11.54**	**0.70**	**0.45**	**1.74**	**1.53**	**0.15**	**0.06**
ANNUAL TOTAL - TONS										**0.04**	**0.40**	**0.44**	**0.00**	**0.03**	**0.02**	**131.58**	**0.02**	**0.02**	**137.31**								
ANNUAL TOTAL - METRIC TONS																**145.04**	**0.03**	**0.02**	**151.35**								

LADWP North Hollywood Central Treatment Project
Total Construction Emissions

	Daily Emissions (lb/day)									Monthly Emissions (tons/month)										Daily Onsite Emissions (lb/day)				Daily Offsite Emissions (lb/day)			
	VOC	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	VOC	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	CO2e	NOx	CO	PM10	PM2.5	NOx	CO	PM10	PM2.5
Jan-24																											
Offroad Equipment	0.83	7.49	8.90	0.01	0.32	0.30	1383.03	0.40	0.18	0.01	0.07	0.09	0.00	0.00	0.00	13.58	0.00	0.00	14.19	7.49	8.90	0.32	0.30				
Vehicles	0.03	0.52	1.47	0.01	0.06	0.03	876.75	0.01	0.07	0.00	0.01	0.02	0.00	0.00	0.00	9.64	0.00	0.00	9.87					0.52	1.47	0.06	0.03
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Jan-24	**0.85**	**8.02**	**10.38**	**0.02**	**0.39**	**0.32**	**2259.78**	**0.41**	**0.25**	**0.01**	**0.08**	**0.10**	**0.00**	**0.00**	**0.00**	**23.22**	**0.00**	**0.00**	**24.07**	**7.49**	**8.90**	**0.32**	**0.30**	**0.52**	**1.47**	**0.06**	**0.03**
Feb-24																											
Offroad Equipment	0.58	5.08	6.86	0.01	0.23	0.21	941.98	0.26	0.12	0.01	0.05	0.06	0.00	0.00	0.00	8.73	0.00	0.00	9.09	5.08	6.86	0.23	0.21				
Vehicles	0.03	0.53	1.53	0.01	0.07	0.03	896.52	0.01	0.07	0.00	0.01	0.02	0.00	0.00	0.00	9.86	0.00	0.00	10.09					0.53	1.53	0.07	0.03
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Feb-24	**0.61**	**5.61**	**8.39**	**0.02**	**0.30**	**0.24**	**1838.50**	**0.27**	**0.19**	**0.01**	**0.05**	**0.08**	**0.00**	**0.00**	**0.00**	**18.59**	**0.00**	**0.00**	**19.19**	**5.08**	**6.86**	**0.23**	**0.21**	**0.53**	**1.53**	**0.07**	**0.03**
Mar-24																											
Offroad Equipment	1.20	10.66	13.08	0.02	0.50	0.47	1784.15	0.53	0.24	0.01	0.06	0.08	0.00	0.00	0.00	11.27	0.00	0.00	11.77	10.66	13.08	0.50	0.47				
Vehicles	0.03	0.69	1.83	0.01	0.08	0.03	1122.89	0.01	0.09	0.00	0.01	0.02	0.00	0.00	0.00	12.35	0.00	0.00	12.65					0.69	1.83	0.08	0.03
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Mar-24	**1.23**	**11.35**	**14.91**	**0.03**	**0.59**	**0.50**	**2907.04**	**0.54**	**0.33**	**0.01**	**0.07**	**0.10**	**0.00**	**0.00**	**0.00**	**23.62**	**0.00**	**0.00**	**24.42**	**10.66**	**13.08**	**0.50**	**0.47**	**0.69**	**1.83**	**0.08**	**0.03**
Apr-24																											
Offroad Equipment	1.20	10.66	13.08	0.02	0.50	0.47	1784.15	0.53	0.24	0.01	0.06	0.08	0.00	0.00	0.00	11.27	0.00	0.00	11.77	10.66	13.08	0.50	0.47				
Vehicles	0.03	0.67	1.54	0.01	0.08	0.03	1024.09	0.01	0.09	0.00	0.01	0.02	0.00	0.00	0.00	11.27	0.00	0.00	11.56					0.67	1.54	0.08	0.03
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Apr-24	**1.23**	**11.33**	**14.62**	**0.03**	**0.58**	**0.50**	**2808.23**	**0.54**	**0.33**	**0.01**	**0.07**	**0.10**	**0.00**	**0.00**	**0.00**	**22.53**	**0.00**	**0.00**	**23.33**	**10.66**	**13.08**	**0.50**	**0.47**	**0.67**	**1.54**	**0.08**	**0.03**
May-24																											
Offroad Equipment	1.20	10.66	13.08	0.02	0.50	0.47	1784.15	0.53	0.24	0.01	0.06	0.08	0.00	0.00	0.00	11.27	0.00	0.00	11.77	10.66	13.08	0.50	0.47				
Vehicles	0.03	0.67	1.54	0.01	0.08	0.03	1024.09	0.01	0.09	0.00	0.01	0.02	0.00	0.00	0.00	11.27	0.00	0.00	11.56					0.67	1.54	0.08	0.03
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
May-24	**1.23**	**11.33**	**14.62**	**0.03**	**0.58**	**0.50**	**2808.23**	**0.54**	**0.33**	**0.01**	**0.07**	**0.10**	**0.00**	**0.00**	**0.00**	**22.53**	**0.00**	**0.00**	**23.33**	**10.66**	**13.08**	**0.50**	**0.47**	**0.67**	**1.54**	**0.08**	**0.03**
Jun-24																											
Offroad Equipment	1.02	8.31	11.36	0.02	0.36	0.34	1953.15	0.59	0.26	0.01	0.06	0.09	0.00	0.00	0.00	16.58	0.00	0.00	17.35	8.31	11.36	0.36	0.34				
Vehicles	0.03	0.83	1.83	0.01	0.09	0.04	1250.46	0.01	0.11	0.00	0.01	0.02	0.00	0.00	0.00	13.76	0.00	0.00	14.12					0.83	1.83	0.09	0.04
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Jun-24	**1.05**	**9.14**	**13.20**	**0.03**	**0.46**	**0.37**	**3203.61**	**0.59**	**0.37**	**0.01**	**0.07**	**0.11**	**0.00**	**0.00**	**0.00**	**30.33**	**0.00**	**0.00**	**31.47**	**8.31**	**11.36**	**0.36**	**0.34**	**0.83**	**1.83**	**0.09**	**0.04**
Jul-24																											
Offroad Equipment	0.46	4.18	5.84	0.01	0.21	0.19	769.30	0.25	0.11	0.00	0.02	0.03	0.00	0.00	0.00	3.55	0.00	0.00	3.74	4.18	5.84	0.21	0.19				
Vehicles	0.03	0.38	1.52	0.01	0.06	0.02	768.95	0.01	0.05	0.00	0.00	0.02	0.00	0.00	0.00	8.46	0.00	0.00	8.62					0.38	1.52	0.06	0.02
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Jul-24	**0.48**	**4.56**	**7.36**	**0.02**	**0.26**	**0.21**	**1538.25**	**0.25**	**0.16**	**0.00**	**0.02**	**0.04**	**0.00**	**0.00**	**0.00**	**12.01**	**0.00**	**0.00**	**12.36**	**4.18**	**5.84**	**0.21**	**0.19**	**0.38**	**1.52**	**0.06**	**0.02**
Aug-24																											
Offroad Equipment	0.46	4.18	5.84	0.01	0.21	0.19	769.30	0.25	0.11	0.00	0.02	0.03	0.00	0.00	0.00	3.55	0.00	0.00	3.74	4.18	5.84	0.21	0.19				
Vehicles	0.02	0.24	1.51	0.01	0.04	0.02	641.38	0.01	0.03	0.00	0.00	0.02	0.00	0.00	0.00	7.06	0.00	0.00	7.15					0.24	1.51	0.04	0.02
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Aug-24	**0.48**	**4.42**	**7.36**	**0.01**	**0.25**	**0.21**	**1410.68**	**0.25**	**0.14**	**0.00**	**0.02**	**0.04**	**0.00**	**0.00**	**0.00**	**10.61**	**0.00**	**0.00**	**10.89**	**4.18**	**5.84**	**0.21**	**0.19**	**0.24**	**1.51**	**0.04**	**0.02**
Sep-24																											
Offroad Equipment	0.46	4.18	5.84	0.01	0.21	0.19	769.30	0.25	0.11	0.00	0.02	0.03	0.00	0.00	0.00	3.55	0.00	0.00	3.74	4.18	5.84	0.21	0.19				
Vehicles	0.03	0.27	1.98	0.01	0.05	0.02	799.47	0.01	0.03	0.00	0.00	0.02	0.00	0.00	0.00	8.79	0.00	0.00	8.90					0.27	1.98	0.05	0.02
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Sep-24	**0.49**	**4.45**	**7.82**	**0.02**	**0.26**	**0.21**	**1568.77**	**0.26**	**0.14**	**0.00**	**0.02**	**0.05**	**0.00**	**0.00**	**0.00**	**12.35**	**0.00**	**0.00**	**12.64**	**4.18**	**5.84**	**0.21**	**0.19**	**0.27**	**1.98**	**0.05**	**0.02**
Oct-24																											
Offroad Equipment	0.46	4.18	5.84	0.01	0.21	0.19	769.30	0.25	0.11	0.00	0.02	0.03	0.00	0.00	0.00	3.55	0.00	0.00	3.74	4.18	5.84	0.21	0.19				
Vehicles	0.03	0.41	1.93	0.01	0.06	0.02	907.28	0.01	0.05	0.00	0.00	0.02	0.00	0.00	0.00	9.98	0.00	0.00	10.15					0.41	1.93	0.06	0.02
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Oct-24	**0.49**	**4.59**	**7.77**	**0.02**	**0.27**	**0.22**	**1676.58**	**0.26**	**0.16**	**0.00**	**0.02**	**0.05**	**0.00**	**0.00**	**0.00**	**13.53**	**0.00**	**0.00**	**13.89**	**4.18**	**5.84**	**0.21**	**0.19**	**0.41**	**1.93**	**0.06**	**0.02**

LADWP North Hollywood Central Treatment Project
Total Construction Emissions

	Daily Emissions (lb/day)									Monthly Emissions (tons/month)										Daily Onsite Emissions (lb/day)				Daily Offsite Emissions (lb/day)			
	VOC	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	VOC	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	CO2e	NOx	CO	PM10	PM2.5	NOx	CO	PM10	PM2.5
Nov-24																											
Offroad Equipment	0.98	8.24	10.67	0.02	0.37	0.34	1880.42	0.56	0.25	0.01	0.06	0.08	0.00	0.00	0.00	15.78	0.00	0.00	16.51	8.24	10.67	0.37	0.34				
Vehicles	0.03	0.96	1.61	0.01	0.10	0.04	1298.99	0.01	0.13	0.00	0.01	0.02	0.00	0.00	0.00	14.29	0.00	0.00	14.72					0.96	1.61	0.10	0.04
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Nov-24	**1.02**	**9.20**	**12.28**	**0.03**	**0.47**	**0.38**	**3179.41**	**0.57**	**0.38**	**0.01**	**0.07**	**0.10**	**0.00**	**0.00**	**0.00**	**30.06**	**0.00**	**0.00**	**31.22**	**8.24**	**10.67**	**0.37**	**0.34**	**0.96**	**1.61**	**0.10**	**0.04**
Dec-24																											
Offroad Equipment	0.86	7.08	9.55	0.02	0.31	0.29	1723.67	0.51	0.23	0.01	0.05	0.07	0.00	0.00	0.00	14.05	0.00	0.00	14.69	7.08	9.55	0.31	0.29				
Vehicles	0.03	0.96	1.61	0.01	0.10	0.04	1298.99	0.01	0.13	0.00	0.01	0.02	0.00	0.00	0.00	14.29	0.00	0.00	14.72					0.96	1.61	0.10	0.04
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Dec-24	**0.89**	**8.04**	**11.16**	**0.03**	**0.41**	**0.33**	**3022.65**	**0.52**	**0.36**	**0.01**	**0.06**	**0.08**	**0.00**	**0.00**	**0.00**	**28.34**	**0.00**	**0.00**	**29.41**	**7.08**	**9.55**	**0.31**	**0.29**	**0.96**	**1.61**	**0.10**	**0.04**
ANNUAL SUMMARY - MAXIMUM DAILY	**1.23**	**11.35**	**14.91**	**0.03**	**0.59**	**0.50**	**3203.61**	**0.59**	**0.38**											**10.66**	**13.08**	**0.50**	**0.47**	**0.96**	**1.98**	**0.10**	**0.04**
ANNUAL TOTAL - TONS										**0.07**	**0.64**	**0.95**	**0.00**	**0.03**	**0.03**	**247.73**	**0.03**	**0.03**	**256.21**								
ANNUAL TOTAL - METRIC TONS																**273.08**	**0.04**	**0.03**	**282.43**								
Jan-25																											
Offroad Equipment	0.80	6.47	9.48	0.02	0.27	0.25	1723.43	0.51	0.23	0.01	0.05	0.07	0.00	0.00	0.00	14.05	0.00	0.00	14.69	6.47	9.48	0.27	0.25				
Vehicles	0.02	0.48	1.10	0.01	0.06	0.02	764.27	0.00	0.07	0.00	0.01	0.01	0.00	0.00	0.00	8.41	0.00	0.00	8.63					0.48	1.10	0.06	0.02
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Jan-25	**0.82**	**6.95**	**10.59**	**0.03**	**0.33**	**0.27**	**2487.70**	**0.52**	**0.30**	**0.01**	**0.05**	**0.08**	**0.00**	**0.00**	**0.00**	**22.46**	**0.00**	**0.00**	**23.32**	**6.47**	**9.48**	**0.27**	**0.25**	**0.48**	**1.10**	**0.06**	**0.02**
Feb-25																											
Offroad Equipment	1.72	12.46	17.62	0.04	0.47	0.43	4103.65	1.28	0.57	0.01	0.07	0.10	0.00	0.00	0.00	22.78	0.01	0.00	23.86	12.46	17.62	0.47	0.43				
Vehicles	0.02	0.48	1.16	0.01	0.06	0.02	783.58	0.00	0.07	0.00	0.01	0.01	0.00	0.00	0.00	8.62	0.00	0.00	8.84					0.48	1.16	0.06	0.02
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Feb-25	**1.74**	**12.94**	**18.77**	**0.05**	**0.53**	**0.46**	**4887.23**	**1.29**	**0.64**	**0.01**	**0.07**	**0.11**	**0.00**	**0.00**	**0.00**	**31.40**	**0.01**	**0.00**	**32.70**	**12.46**	**17.62**	**0.47**	**0.43**	**0.48**	**1.16**	**0.06**	**0.02**
Mar-25																											
Offroad Equipment	1.52	10.57	14.29	0.04	0.40	0.37	3652.43	1.14	0.51	0.01	0.06	0.08	0.00	0.00	0.00	21.12	0.01	0.00	22.13	10.57	14.29	0.40	0.37				
Vehicles	0.02	0.62	1.16	0.01	0.07	0.03	909.65	0.00	0.09	0.00	0.01	0.01	0.00	0.00	0.00	10.01	0.00	0.00	10.29					0.62	1.16	0.07	0.03
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Mar-25	**1.54**	**11.18**	**15.45**	**0.05**	**0.47**	**0.40**	**4562.08**	**1.14**	**0.60**	**0.01**	**0.07**	**0.10**	**0.00**	**0.00**	**0.00**	**31.13**	**0.01**	**0.00**	**32.42**	**10.57**	**14.29**	**0.40**	**0.37**	**0.62**	**1.16**	**0.07**	**0.03**
Apr-25																											
Offroad Equipment	1.46	9.94	13.17	0.04	0.38	0.35	3502.02	1.09	0.49	0.01	0.05	0.07	0.00	0.00	0.00	19.47	0.01	0.00	20.39	9.94	13.17	0.38	0.35				
Vehicles	0.02	0.63	1.33	0.01	0.07	0.03	967.56	0.01	0.09	0.00	0.01	0.01	0.00	0.00	0.00	10.64	0.00	0.00	10.93					0.63	1.33	0.07	0.03
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Apr-25	**1.48**	**10.56**	**14.50**	**0.05**	**0.45**	**0.38**	**4469.58**	**1.09**	**0.57**	**0.01**	**0.06**	**0.09**	**0.00**	**0.00**	**0.00**	**30.11**	**0.01**	**0.00**	**31.32**	**9.94**	**13.17**	**0.38**	**0.35**	**0.63**	**1.33**	**0.07**	**0.03**
May-25																											
Offroad Equipment	0.71	5.47	7.69	0.02	0.23	0.22	1473.19	0.43	0.19	0.00	0.03	0.05	0.00	0.00	0.00	11.30	0.00	0.00	11.80	5.47	7.69	0.23	0.22				
Vehicles	0.02	0.49	1.37	0.01	0.06	0.02	860.79	0.01	0.07	0.00	0.01	0.02	0.00	0.00	0.00	9.47	0.00	0.00	9.69					0.49	1.37	0.06	0.02
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
May-25	**0.73**	**5.96**	**9.06**	**0.02**	**0.30**	**0.24**	**2333.98**	**0.44**	**0.26**	**0.01**	**0.04**	**0.06**	**0.00**	**0.00**	**0.00**	**20.76**	**0.00**	**0.00**	**21.49**	**5.47**	**7.69**	**0.23**	**0.22**	**0.49**	**1.37**	**0.06**	**0.02**

LADWP North Hollywood Central Treatment Project
Total Construction Emissions

	Daily Emissions (lb/day)									Monthly Emissions (tons/month)										Daily Onsite Emissions (lb/day)				Daily Offsite Emissions (lb/day)			
	VOC	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**	**CO2**	**CH4**	**N2O**	**VOC**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**	**CO2**	**CH4**	**N2O**	**CO2e**	**NOx**	**CO**	**PM10**	**PM2.5**	**NOx**	**CO**	**PM10**	**PM2.5**
Jun-25																											
Offroad Equipment	0.46	4.14	6.24	0.01	0.19	0.18	819.84	0.27	0.12	0.00	0.02	0.03	0.00	0.00	0.00	4.11	0.00	0.00	4.32	4.14	6.24	0.19	0.18				
Vehicles	0.02	0.34	1.10	0.01	0.05	0.02	638.20	0.00	0.05	0.00	0.00	0.01	0.00	0.00	0.00	7.02	0.00	0.00	7.17					0.34	1.10	0.05	0.02
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Jun-25	**0.48**	**4.48**	**7.33**	**0.01**	**0.24**	**0.19**	**1458.04**	**0.27**	**0.17**	**0.00**	**0.02**	**0.04**	**0.00**	**0.00**	**0.00**	**11.13**	**0.00**	**0.00**	**11.49**	**4.14**	**6.24**	**0.19**	**0.18**	**0.34**	**1.10**	**0.05**	**0.02**
Jul-25																											
Offroad Equipment	0.39	3.51	5.13	0.01	0.17	0.16	669.43	0.22	0.10	0.00	0.01	0.02	0.00	0.00	0.00	2.45	0.00	0.00	2.58	3.51	5.13	0.17	0.16				
Vehicles	0.02	0.33	0.88	0.01	0.04	0.02	560.99	0.00	0.05	0.00	0.00	0.01	0.00	0.00	0.00	6.17	0.00	0.00	6.32					0.33	0.88	0.04	0.02
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Jul-25	**0.41**	**3.84**	**6.01**	**0.01**	**0.21**	**0.17**	**1230.42**	**0.22**	**0.14**	**0.00**	**0.02**	**0.03**	**0.00**	**0.00**	**0.00**	**8.63**	**0.00**	**0.00**	**8.90**	**3.51**	**5.13**	**0.17**	**0.16**	**0.33**	**0.88**	**0.04**	**0.02**
Aug-25																											
Offroad Equipment	0.39	3.51	5.13	0.01	0.17	0.16	669.43	0.22	0.10	0.00	0.01	0.02	0.00	0.00	0.00	2.45	0.00	0.00	2.58	3.51	5.13	0.17	0.16				
Vehicles	0.01	0.18	0.71	0.00	0.03	0.01	377.01	0.00	0.02	0.00	0.00	0.01	0.00	0.00	0.00	4.15	0.00	0.00	4.23					0.18	0.71	0.03	0.01
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Aug-25	**0.40**	**3.69**	**5.84**	**0.01**	**0.20**	**0.17**	**1046.44**	**0.22**	**0.12**	**0.00**	**0.01**	**0.03**	**0.00**	**0.00**	**0.00**	**6.60**	**0.00**	**0.00**	**6.81**	**3.51**	**5.13**	**0.17**	**0.16**	**0.18**	**0.71**	**0.03**	**0.01**
Sep-25																											
Offroad Equipment	0.17	1.56	2.28	0.00	0.08	0.07	297.53	0.10	0.04	0.00	0.01	0.01	0.00	0.00	0.00	1.64	0.00	0.00	1.72	1.56	2.28	0.08	0.07				
Vehicles	0.00	0.01	0.22	0.00	0.00	0.00	77.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.85					0.01	0.22	0.01	0.00
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Sep-25	**0.18**	**1.57**	**2.50**	**0.00**	**0.08**	**0.07**	**374.74**	**0.10**	**0.04**	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**2.49**	**0.00**	**0.00**	**2.57**	**1.56**	**2.28**	**0.08**	**0.07**	**0.01**	**0.22**	**0.01**	**0.00**
Oct-25																											
Offroad Equipment	0.17	1.56	2.28	0.00	0.08	0.07	297.53	0.10	0.04	0.00	0.01	0.01	0.00	0.00	0.00	1.64	0.00	0.00	1.72	1.56	2.28	0.08	0.07				
Vehicles	0.00	0.01	0.22	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.85					0.01	0.22	0.01	0.00
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Oct-25	**0.18**	**1.57**	**2.50**	**0.00**	**0.08**	**0.07**	**297.53**	**0.10**	**0.04**	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**2.49**	**0.00**	**0.00**	**2.57**	**1.56**	**2.28**	**0.08**	**0.07**	**0.01**	**0.22**	**0.01**	**0.00**
Nov-25																											
Offroad Equipment	0.17	1.56	2.28	0.00	0.08	0.07	297.53	0.10	0.04	0.00	0.01	0.01	0.00	0.00	0.00	1.64	0.00	0.00	1.72	1.56	2.28	0.08	0.07				
Vehicles	0.00	0.01	0.22	0.00	0.01	0.00	77.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.85					0.01	0.22	0.01	0.00
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Nov-25	**0.18**	**1.57**	**2.50**	**0.00**	**0.08**	**0.07**	**374.74**	**0.10**	**0.04**	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**2.49**	**0.00**	**0.00**	**2.57**	**1.56**	**2.28**	**0.08**	**0.07**	**0.01**	**0.22**	**0.01**	**0.00**
Dec-25																											
Offroad Equipment	0.17	1.56	2.28	0.00	0.08	0.07	297.53	0.10	0.04	0.00	0.01	0.01	0.00	0.00	0.00	1.64	0.00	0.00	1.72	1.56	2.28	0.08	0.07				
Vehicles	0.00	0.01	0.22	0.00	0.01	0.00	77.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.85					0.01	0.22	0.01	0.00
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Dec-25	**0.18**	**1.57**	**2.50**	**0.00**	**0.08**	**0.07**	**374.74**	**0.10**	**0.04**	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**2.49**	**0.00**	**0.00**	**2.57**	**1.56**	**2.28**	**0.08**	**0.07**	**0.01**	**0.22**	**0.01**	**0.00**
ANNUAL SUMMARY - MAXIMUM DAILY	**1.74**	**12.94**	**18.77**	**0.05**	**0.53**	**0.46**	**4887.23**	**1.29**	**0.64**											**12.46**	**17.62**	**0.47**	**0.43**	**0.63**	**1.37**	**0.07**	**0.03**
ANNUAL TOTAL - TONS										**0.05**	**0.38**	**0.59**	**0.00**	**0.02**	**0.01**	**172.15**	**0.03**	**0.02**	**178.74**								
ANNUAL TOTAL - METRIC TONS																**189.77**	**0.03**	**0.02**	**197.03**								

LADWP North Hollywood Central Treatment Project
Total Construction Emissions

	Daily Emissions (lb/day)									Monthly Emissions (tons/month)										Daily Onsite Emissions (lb/day)				Daily Offsite Emissions (lb/day)			
	VOC	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	VOC	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	CO2e	NOx	CO	PM10	PM2.5	NOx	CO	PM10	PM2.5
Jan-26																											
Offroad Equipment	0.04	0.39	0.57	0.00	0.02	0.02	74.38	0.02	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.82	0.00	0.00	0.86	0.39	0.57	0.02	0.02				
Vehicles	0.00	0.01	0.10	0.00	0.00	0.00	37.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.41					0.01	0.10	0.00	0.00
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Jan-26	**0.05**	**0.40**	**0.67**	**0.00**	**0.02**	**0.02**	**111.47**	**0.02**	**0.01**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**1.23**	**0.00**	**0.00**	**1.27**	**0.39**	**0.57**	**0.02**	**0.02**	**0.01**	**0.10**	**0.00**	**0.00**
Feb-26																											
Offroad Equipment	0.04	0.39	0.57	0.00	0.02	0.02	74.38	0.02	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.82	0.00	0.00	0.86	0.39	0.57	0.02	0.02				
Vehicles	0.00	0.01	0.10	0.00	0.00	0.00	37.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41					0.01	0.10	0.00	0.00
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Feb-26	**0.05**	**0.40**	**0.67**	**0.00**	**0.02**	**0.02**	**111.47**	**0.02**	**0.01**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.82**	**0.00**	**0.00**	**1.27**	**0.39**	**0.57**	**0.02**	**0.02**	**0.01**	**0.10**	**0.00**	**0.00**
Mar-26																											
Offroad Equipment	0.04	0.39	0.57	0.00	0.02	0.02	74.38	0.02	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.82	0.00	0.00	0.86	0.39	0.57	0.02	0.02				
Vehicles	0.00	0.01	0.10	0.00	0.00	0.00	37.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41					0.01	0.10	0.00	0.00
Earth Moving	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
Mar-26	**0.05**	**0.40**	**0.67**	**0.00**	**0.02**	**0.02**	**111.47**	**0.02**	**0.01**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.82**	**0.00**	**0.00**	**1.27**	**0.39**	**0.57**	**0.02**	**0.02**	**0.01**	**0.10**	**0.00**	**0.00**
ANNUAL SUMMARY - MAXIMUM DAILY	**0.05**	**0.40**	**0.67**	**0.00**	**0.02**	**0.02**	**111.47**	**0.02**	**0.01**											**0.39**	**0.57**	**0.02**	**0.02**	**0.01**	**0.10**	**0.00**	**0.00**
ANNUAL TOTAL - TONS										**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**2.86**	**0.00**	**0.00**	**3.81**								
ANNUAL TOTAL - METRIC TONS																**3.16**	**0.00**	**0.00**	**4.20**								

LADWP North Hollywood Chlorination Stations Project
Construction Equipment Emissions Summary

	Daily Emissions (lb/day)									Monthly Emissions (tons/month)									
	ROG	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	ROG	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	CO2E
2023																			
Jul-23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aug-23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sep-23	0.62	5.23	6.81	0.01	0.20	0.19	1,349.09	0.44	0.20	0.01	0.06	0.07	0.00	0.00	0.00	14.84	0.00	0.00	15.60
Oct-23	1.17	10.54	11.54	0.02	0.45	0.41	2,142.80	0.69	0.31	0.01	0.11	0.11	0.00	0.00	0.00	21.93	0.01	0.00	23.06
Nov-23	1.17	10.54	11.54	0.02	0.45	0.41	2,142.80	0.69	0.31	0.01	0.11	0.11	0.00	0.00	0.00	21.93	0.01	0.00	23.06
Dec-23	0.85	8.04	8.82	0.01	0.35	0.33	1,384.84	0.40	0.18	0.01	0.08	0.08	0.00	0.00	0.00	13.60	0.00	0.00	14.22
2024																			
Jan-24	0.83	7.49	8.90	0.01	0.32	0.30	1383.03	0.40	0.18	0.01	0.07	0.09	0.00	0.00	0.00	13.58	0.00	0.00	14.19
Feb-24	0.58	5.08	6.86	0.01	0.23	0.21	941.98	0.26	0.12	0.01	0.05	0.06	0.00	0.00	0.00	8.73	0.00	0.00	9.09
Mar-24	1.20	10.66	13.08	0.02	0.50	0.47	1784.15	0.53	0.24	0.01	0.06	0.08	0.00	0.00	0.00	11.27	0.00	0.00	11.77
Apr-24	1.20	10.66	13.08	0.02	0.50	0.47	1784.15	0.53	0.24	0.01	0.06	0.08	0.00	0.00	0.00	11.27	0.00	0.00	11.77
May-24	1.20	10.66	13.08	0.02	0.50	0.47	1784.15	0.53	0.24	0.01	0.06	0.08	0.00	0.00	0.00	11.27	0.00	0.00	11.77
Jun-24	1.02	8.31	11.36	0.02	0.36	0.34	1953.15	0.59	0.26	0.01	0.06	0.09	0.00	0.00	0.00	16.58	0.00	0.00	17.35
Jul-24	0.46	4.18	5.84	0.01	0.21	0.19	769.30	0.25	0.11	0.00	0.02	0.03	0.00	0.00	0.00	3.55	0.00	0.00	3.74
Aug-24	0.46	4.18	5.84	0.01	0.21	0.19	769.30	0.25	0.11	0.00	0.02	0.03	0.00	0.00	0.00	3.55	0.00	0.00	3.74
Sep-24	0.46	4.18	5.84	0.01	0.21	0.19	769.30	0.25	0.11	0.00	0.02	0.03	0.00	0.00	0.00	3.55	0.00	0.00	3.74
Oct-24	0.46	4.18	5.84	0.01	0.21	0.19	769.30	0.25	0.11	0.00	0.02	0.03	0.00	0.00	0.00	3.55	0.00	0.00	3.74
Nov-24	0.98	8.24	10.67	0.02	0.37	0.34	1880.42	0.56	0.25	0.01	0.06	0.08	0.00	0.00	0.00	15.78	0.00	0.00	16.51
Dec-24	0.86	7.08	9.55	0.02	0.31	0.29	1723.67	0.51	0.23	0.01	0.05	0.07	0.00	0.00	0.00	14.05	0.00	0.00	14.69
2025																			
Jan-25	0.80	6.47	9.48	0.02	0.27	0.25	1723.43	0.51	0.23	0.01	0.05	0.07	0.00	0.00	0.00	14.05	0.00	0.00	14.69
Feb-25	1.72	12.46	17.62	0.04	0.47	0.43	4103.65	1.28	0.57	0.01	0.07	0.10	0.00	0.00	0.00	22.78	0.01	0.00	23.86
Mar-25	1.52	10.57	14.29	0.04	0.40	0.37	3652.43	1.14	0.51	0.01	0.06	0.08	0.00	0.00	0.00	21.12	0.01	0.00	22.13
Apr-25	1.46	9.94	13.17	0.04	0.38	0.35	3502.02	1.09	0.49	0.01	0.05	0.07	0.00	0.00	0.00	19.47	0.01	0.00	20.39
May-25	0.71	5.47	7.69	0.02	0.23	0.22	1473.19	0.43	0.19	0.00	0.03	0.05	0.00	0.00	0.00	11.30	0.00	0.00	11.80
Jun-25	0.46	4.14	6.24	0.01	0.19	0.18	819.84	0.27	0.12	0.00	0.02	0.03	0.00	0.00	0.00	4.11	0.00	0.00	4.32
Jul-25	0.39	3.51	5.13	0.01	0.17	0.16	669.43	0.22	0.10	0.00	0.01	0.02	0.00	0.00	0.00	2.45	0.00	0.00	2.58
Aug-25	0.39	3.51	5.13	0.01	0.17	0.16	669.43	0.22	0.10	0.00	0.01	0.02	0.00	0.00	0.00	2.45	0.00	0.00	2.58
Sep-25	0.17	1.56	2.28	0.00	0.08	0.07	297.53	0.10	0.04	0.00	0.01	0.01	0.00	0.00	0.00	1.64	0.00	0.00	1.72
Oct-25	0.17	1.56	2.28	0.00	0.08	0.07	297.53	0.10	0.04	0.00	0.01	0.01	0.00	0.00	0.00	1.64	0.00	0.00	1.72
Nov-25	0.17	1.56	2.28	0.00	0.08	0.07	297.53	0.10	0.04	0.00	0.01	0.01	0.00	0.00	0.00	1.64	0.00	0.00	1.72
Dec-25	0.17	1.56	2.28	0.00	0.08	0.07	297.53	0.10	0.04	0.00	0.01	0.01	0.00	0.00	0.00	1.64	0.00	0.00	1.72
2026																			
Jan-26	0.04	0.39	0.57	0.00	0.02	0.02	74.38	0.02	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.82	0.00	0.00	0.86
Feb-26	0.04	0.39	0.57	0.00	0.02	0.02	74.38	0.02	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.82	0.00	0.00	0.86
Mar-26	0.04	0.39	0.57	0.00	0.02	0.02	74.38	0.02	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.82	0.00	0.00	0.86
SUMMARY - MAXIMUM DAILY	**1.72**	**12.46**	**17.62**	**0.04**	**0.50**	**0.47**	**4103.65**	**1.28**	**0.57**										
TOTAL - TONS										**0.15**	**1.26**	**1.62**	**0.00**	**0.05**	**0.05**	**295.75**	**0.09**	**0.04**	**309.82**
TOTAL - METRIC TONS																**326.01**	**0.10**	**0.04**	**341.52**

LADWP North Hollywood Chlorination Stations Project
Off-Road Equipment Emissions

Equipment - Project-Specific Name	Equipment	# of Units	Hrs/Day	Hours per Month	Category	Daily Emissions (lb/day)									Monthly Emissions (tons/month)									
						ROG	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	ROG	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	CO2E
Jul-23																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 20 ton	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Backhoe	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Bobcat S510	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Forklift	Forklifts	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Water Truck	Off-Highway Trucks	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Jul-23	**TOTAL**			**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Aug-23																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 20 ton	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Backhoe	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Bobcat S510	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Forklift	Forklifts	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Water Truck	Off-Highway Trucks	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Aug-23	**TOTAL**			**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Sep-23																								
Excavator - 5 yard bucket	Excavators	1	4	88	Off-Road	0.08	0.74	1.13	0.00	0.03	0.03	152.60	0.05	0.02	0.001	0.008	0.012	0.000	0.000	0.000	1.679	0.001	0.000	1.76
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	1	4	88	Off-Road	0.08	0.72	1.11	0.00	0.03	0.03	150.17	0.05	0.02	0.001	0.008	0.012	0.000	0.000	0.000	1.652	0.001	0.000	1.74
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	1	4	88	Off-Road	0.03	0.41	0.69	0.00	0.01	0.01	99.83	0.03	0.01	0.000	0.004	0.008	0.000	0.000	0.000	1.098	0.000	0.000	1.15
Crane - 20 ton	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Backhoe	Tractors/Loaders/Backhoes	1	4	88	Off-Road	0.08	0.72	1.11	0.00	0.03	0.03	150.17	0.05	0.02	0.001	0.008	0.012	0.000	0.000	0.000	1.652	0.001	0.000	1.74
Bobcat S510	Skid Steer Loaders	1	4	88	Off-Road	0.05	0.48	0.55	0.00	0.01	0.01	78.84	0.03	0.01	0.001	0.005	0.006	0.000	0.000	0.000	0.867	0.000	0.000	0.91
Forklift	Forklifts	1	4	88	Off-Road	0.05	0.46	0.58	0.00	0.03	0.02	74.38	0.02	0.01	0.001	0.005	0.006	0.000	0.000	0.000	0.818	0.000	0.000	0.86
Water Truck	Off-Highway Trucks	1	4	88	Off-Road	0.25	1.70	1.65	0.01	0.06	0.05	643.11	0.21	0.09	0.003	0.019	0.018	0.000	0.001	0.001	7.074	0.002	0.001	7.44
Sep-23	**TOTAL**			**616.00**		**0.62**	**5.23**	**6.81**	**0.01**	**0.20**	**0.19**	**1,349.09**	**0.44**	**0.20**	**0.01**	**0.06**	**0.07**	**0.00**	**0.00**	**0.00**	**14.84**	**0.00**	**0.00**	**15.60**
Oct-23																								
Excavator - 5 yard bucket	Excavators	1	4	88	Off-Road	0.08	0.74	1.13	0.00	0.03	0.03	152.60	0.05	0.02	0.001	0.008	0.012	0.000	0.000	0.000	1.679	0.001	0.000	1.76
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	1	4	88	Off-Road	0.08	0.72	1.11	0.00	0.03	0.03	150.17	0.05	0.02	0.001	0.008	0.012	0.000	0.000	0.000	1.652	0.001	0.000	1.74
Compaction Roller	Rollers	1	4	88	Off-Road	0.08	0.75	0.91	0.00	0.04	0.03	125.44	0.04	0.02	0.001	0.008	0.010	0.000	0.000	0.000	1.380	0.000	0.000	1.45
Skid Steer	Skid Steer Loaders	1	4	88	Off-Road	0.03	0.41	0.69	0.00	0.01	0.01	99.83	0.03	0.01	0.000	0.004	0.008	0.000	0.000	0.000	1.098	0.000	0.000	1.15
Crane - 20 ton	Cranes	1	4	88	Off-Road	0.14	1.32	1.14	0.00	0.06	0.06	156.74	0.05	0.02	0.002	0.015	0.013	0.000	0.001	0.001	1.724	0.001	0.000	1.81
Crane - 50 ton (RT700E)	Cranes	1	4	88	Off-Road	0.18	1.87	0.95	0.00	0.07	0.06	288.38	0.09	0.04	0.002	0.021	0.010	0.000	0.001	0.001	3.172	0.001	0.000	3.33
Concrete Pump Truck	Pumps	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Backhoe	Tractors/Loaders/Backhoes	1	4	88	Off-Road	0.08	0.72	1.11	0.00	0.03	0.03	150.17	0.05	0.02	0.001	0.008	0.012	0.000	0.000	0.000	1.652	0.001	0.000	1.74
Bobcat S510	Skid Steer Loaders	1	4	88	Off-Road	0.05	0.48	0.55	0.00	0.01	0.01	78.84	0.03	0.01	0.001	0.005	0.006	0.000	0.000	0.000	0.867	0.000	0.000	0.91
Forklift	Forklifts	2	8	176	Off-Road	0.21	1.83	2.30	0.00	0.10	0.09	297.53	0.10	0.04	0.001	0.010	0.013	0.000	0.001	0.001	1.636	0.001	0.000	1.72
Water Truck	Off-Highway Trucks	1	4	88	Off-Road	0.25	1.70	1.65	0.01	0.06	0.05	643.11	0.21	0.09	0.003	0.019	0.018	0.000	0.001	0.001	7.074	0.002	0.001	7.44
Oct-23	**TOTAL**			**968.00**		**1.17**	**10.54**	**11.54**	**0.02**	**0.45**	**0.41**	**2,142.80**	**0.69**	**0.31**	**0.01**	**0.11**	**0.11**	**0.00**	**0.00**	**0.00**	**21.93**	**0.01**	**0.00**	**23.06**
Nov-23																								
Excavator - 5 yard bucket	Excavators	1	4	88	Off-Road	0.08	0.74	1.13	0.00	0.03	0.03	152.60	0.05	0.02	0.001	0.008	0.012	0.000	0.000	0.000	1.679	0.001	0.000	1.76
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	1	4	88	Off-Road	0.08	0.72	1.11	0.00	0.03	0.03	150.17	0.05	0.02	0.001	0.008	0.012	0.000	0.000	0.000	1.652	0.001	0.000	1.74
Compaction Roller	Rollers	1	4	88	Off-Road	0.08	0.75	0.91	0.00	0.04	0.03	125.44	0.04	0.02	0.001	0.008	0.010	0.000	0.000	0.000	1.380	0.000	0.000	1.45
Skid Steer	Skid Steer Loaders	1	4	88	Off-Road	0.03	0.41	0.69	0.00	0.01	0.01	99.83	0.03	0.01	0.000	0.004	0.008	0.000	0.000	0.000	1.098	0.000	0.000	1.15
Crane - 20 ton	Cranes	1	4	88	Off-Road	0.14	1.32	1.14	0.00	0.06	0.06	156.74	0.05	0.02	0.002	0.015	0.013	0.000	0.001	0.001	1.724	0.001	0.000	1.81
Crane - 50 ton (RT700E)	Cranes	1	4	88	Off-Road	0.18	1.87	0.95	0.00	0.07	0.06	288.38	0.09	0.04	0.002	0.021	0.010	0.000	0.001	0.001	3.172	0.001	0.000	3.33
Concrete Pump Truck	Pumps	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00

LADWP North Hollywood Chlorination Stations Project
Off-Road Equipment Emissions

Equipment - Project-Specific Name	Equipment	# of Units	Hrs/Day	Hours per Month	Category	Daily Emissions (lb/day)									Monthly Emissions (tons/month)									
						ROG	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	ROG	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	CO2E
Backhoe	Tractors/Loaders/Backhoes	1	4	88	Off-Road	0.08	0.72	1.11	0.00	0.03	0.03	150.17	0.05	0.02	0.001	0.008	0.012	0.000	0.000	0.000	1.652	0.001	0.000	1.74
Bobcat S510	Skid Steer Loaders	1	4	88	Off-Road	0.05	0.48	0.55	0.00	0.01	0.01	78.84	0.03	0.01	0.001	0.005	0.006	0.000	0.000	0.000	0.867	0.000	0.000	0.91
Forklift	Forklifts	2	8	176	Off-Road	0.21	1.83	2.30	0.00	0.10	0.09	297.53	0.10	0.04	0.001	0.010	0.013	0.000	0.001	0.001	1.636	0.001	0.000	1.72
Water Truck	Off-Highway Trucks	1	4	88	Off-Road	0.25	1.70	1.65	0.01	0.06	0.05	643.11	0.21	0.09	0.003	0.019	0.018	0.000	0.001	0.001	7.074	0.002	0.001	7.44
Nov-23	**TOTAL**			**968.00**		**1.17**	**10.54**	**11.54**	**0.02**	**0.45**	**0.41**	**2,142.80**	**0.69**	**0.31**	**0.01**	**0.11**	**0.11**	**0.00**	**0.00**	**0.00**	**21.93**	**0.01**	**0.00**	**23.06**
Dec-23																								
Excavator - 5 yard bucket	Excavators	1	4	88	Off-Road	0.08	0.74	1.13	0.00	0.03	0.03	152.60	0.05	0.02	0.001	0.008	0.012	0.000	0.000	0.000	1.679	0.001	0.000	1.76
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	1	4	88	Off-Road	0.03	0.41	0.69	0.00	0.01	0.01	99.83	0.03	0.01	0.000	0.004	0.008	0.000	0.000	0.000	1.098	0.000	0.000	1.15
Crane - 20 ton	Cranes	1	4	88	Off-Road	0.14	1.32	1.14	0.00	0.06	0.06	156.74	0.05	0.02	0.002	0.015	0.013	0.000	0.001	0.001	1.724	0.001	0.000	1.81
Crane - 50 ton (RT700E)	Cranes	1	4	88	Off-Road	0.18	1.87	0.95	0.00	0.07	0.06	288.38	0.09	0.04	0.002	0.021	0.010	0.000	0.001	0.001	3.172	0.001	0.000	3.33
Concrete Pump Truck	Pumps	1	4	88	Off-Road	0.08	0.67	0.96	0.00	0.03	0.03	160.76	0.01	0.00	0.001	0.007	0.011	0.000	0.000	0.000	1.768	0.000	0.000	1.78
Backhoe	Tractors/Loaders/Backhoes	1	4	88	Off-Road	0.08	0.72	1.11	0.00	0.03	0.03	150.17	0.05	0.02	0.001	0.008	0.012	0.000	0.000	0.000	1.652	0.001	0.000	1.74
Bobcat S510	Skid Steer Loaders	1	4	88	Off-Road	0.05	0.48	0.55	0.00	0.01	0.01	78.84	0.03	0.01	0.001	0.005	0.006	0.000	0.000	0.000	0.867	0.000	0.000	0.91
Forklift	Forklifts	2	8	176	Off-Road	0.21	1.83	2.30	0.00	0.10	0.09	297.53	0.10	0.04	0.001	0.010	0.013	0.000	0.001	0.001	1.636	0.001	0.000	1.72
Water Truck	Off-Highway Trucks	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Dec-23	**TOTAL**			**792.00**		**0.85**	**8.04**	**8.82**	**0.01**	**0.35**	**0.33**	**1,384.84**	**0.40**	**0.18**	**0.01**	**0.08**	**0.08**	**0.00**	**0.00**	**0.00**	**13.60**	**0.00**	**0.00**	**14.22**
MAXIMUM SUMMARY						**1.17**	**10.54**	**11.54**	**0.02**	**0.45**	**0.41**	**2,142.80**	**0.69**	**0.31**	0.01	0.11	0.11	0.00	0.00	0.00	21.93	0.01	0.00	23.06
ANNUAL TOTAL - TONS															0.04	0.35	0.39	0.00	0.01	0.01	72.31	0.02	0.01	75.94
ANNUAL TOTAL - METRIC TONS																					**79.70**	**0.03**	**0.01**	**83.71**
Jan-24																								
Excavator - 5 yard bucket	Excavators	1	4	88	Off-Road	0.07	0.70	1.13	0.00	0.03	0.03	152.67	0.05	0.02	0.001	0.008	0.012	0.000	0.000	0.000	1.679	0.001	0.000	1.77
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	1	4	88	Off-Road	0.03	0.39	0.69	0.00	0.01	0.01	99.87	0.03	0.01	0.000	0.004	0.008	0.000	0.000	0.000	1.099	0.000	0.000	1.15
Crane - 20 ton	Cranes	1	4	88	Off-Road	0.13	1.16	1.12	0.00	0.06	0.05	156.75	0.05	0.02	0.001	0.013	0.012	0.000	0.001	0.001	1.724	0.001	0.000	1.81
Crane - 50 ton (RT700E)	Cranes	1	4	88	Off-Road	0.17	1.71	0.92	0.00	0.06	0.06	288.37	0.09	0.04	0.002	0.019	0.010	0.000	0.001	0.001	3.172	0.001	0.000	3.33
Concrete Pump Truck	Pumps	1	4	88	Off-Road	0.08	0.63	0.96	0.00	0.03	0.03	160.76	0.01	0.00	0.001	0.007	0.011	0.000	0.000	0.000	1.768	0.000	0.000	1.78
Backhoe	Tractors/Loaders/Backhoes	1	4	88	Off-Road	0.07	0.68	1.11	0.00	0.03	0.03	150.26	0.05	0.02	0.001	0.008	0.012	0.000	0.000	0.000	1.653	0.001	0.000	1.74
Bobcat S510	Skid Steer Loaders	1	4	88	Off-Road	0.09	0.53	0.69	0.00	0.02	0.02	76.81	0.02	0.01	0.001	0.006	0.008	0.000	0.000	0.000	0.845	0.000	0.000	0.89
Forklift	Forklifts	2	8	176	Off-Road	0.19	1.68	2.29	0.00	0.09	0.08	297.53	0.10	0.04	0.001	0.009	0.013	0.000	0.000	0.000	1.636	0.001	0.000	1.72
Water Truck	Off-Highway Trucks	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Jan-24	**TOTAL**			**792.00**		**0.83**	**7.49**	**8.90**	**0.01**	**0.32**	**0.30**	**1,383.03**	**0.40**	**0.18**	**0.01**	**0.07**	**0.09**	**0.00**	**0.00**	**0.00**	**13.58**	**0.00**	**0.00**	**14.19**
Feb-24																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	1	4	88	Off-Road	0.03	0.39	0.69	0.00	0.01	0.01	99.87	0.03	0.01	0.000	0.004	0.008	0.000	0.000	0.000	1.099	0.000	0.000	1.15
Crane - 20 ton	Cranes	1	4	88	Off-Road	0.13	1.16	1.12	0.00	0.06	0.05	156.75	0.05	0.02	0.001	0.013	0.012	0.000	0.001	0.001	1.724	0.001	0.000	1.81
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00

LADWP North Hollywood Chlorination Stations Project
Off-Road Equipment Emissions

Equipment - Project-Specific Name	Equipment	# of Units	Hrs/Day	Hours per Month	Category	Daily Emissions (lb/day)									Monthly Emissions (tons/month)									
						ROG	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	ROG	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	CO2E
Concrete Pump Truck	Pumps	1	4	88	Off-Road	0.08	0.63	0.96	0.00	0.03	0.03	160.76	0.01	0.00	0.001	0.007	0.011	0.000	0.000	0.000	1.768	0.000	0.000	1.78
Backhoe	Tractors/Loaders/Backhoes	1	4	88	Off-Road	0.07	0.68	1.11	0.00	0.03	0.03	150.26	0.05	0.02	0.001	0.008	0.012	0.000	0.000	0.000	1.653	0.001	0.000	1.74
Bobcat S510	Skid Steer Loaders	1	4	88	Off-Road	0.09	0.53	0.69	0.00	0.02	0.02	76.81	0.02	0.01	0.001	0.006	0.008	0.000	0.000	0.000	0.845	0.000	0.000	0.89
Forklift	Forklifts	2	8	176	Off-Road	0.19	1.68	2.29	0.00	0.09	0.08	297.53	0.10	0.04	0.001	0.009	0.013	0.000	0.000	0.000	1.636	0.001	0.000	1.72
Water Truck	Off-Highway Trucks	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Feb-24	**TOTAL**			**616.00**		**0.58**	**5.08**	**6.86**	**0.01**	**0.23**	**0.21**	**941.98**	**0.26**	**0.12**	**0.01**	**0.05**	**0.06**	**0.00**	**0.00**	**0.00**	**8.73**	**0.00**	**0.00**	**9.09**
Mar-24																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	1	4	88	Off-Road	0.03	0.39	0.69	0.00	0.01	0.01	99.87	0.03	0.01	0.000	0.004	0.008	0.000	0.000	0.000	1.099	0.000	0.000	1.15
Crane - 20 ton	Cranes	2	8	176	Off-Road	0.50	4.64	4.48	0.01	0.22	0.20	627.01	0.20	0.09	0.003	0.026	0.025	0.000	0.001	0.001	3.449	0.001	0.000	3.63
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	1	4	88	Off-Road	0.08	0.63	0.96	0.00	0.03	0.03	160.76	0.01	0.00	0.001	0.007	0.011	0.000	0.000	0.000	1.768	0.000	0.000	1.78
Backhoe	Tractors/Loaders/Backhoes	1	4	88	Off-Road	0.07	0.68	1.11	0.00	0.03	0.03	150.26	0.05	0.02	0.001	0.008	0.012	0.000	0.000	0.000	1.653	0.001	0.000	1.74
Bobcat S510	Skid Steer Loaders	1	4	88	Off-Road	0.09	0.53	0.69	0.00	0.02	0.02	76.81	0.02	0.01	0.001	0.006	0.008	0.000	0.000	0.000	0.845	0.000	0.000	0.89
Forklift	Forklifts	3	12	264	Off-Road	0.43	3.79	5.15	0.01	0.20	0.18	669.43	0.22	0.10	0.002	0.014	0.019	0.000	0.001	0.001	2.455	0.001	0.000	2.58
Water Truck	Off-Highway Trucks	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Mar-24	**TOTAL**			**792.00**		**1.20**	**10.66**	**13.08**	**0.02**	**0.50**	**0.47**	**1,784.15**	**0.53**	**0.24**	**0.01**	**0.06**	**0.08**	**0.00**	**0.00**	**0.00**	**11.27**	**0.00**	**0.00**	**11.77**
Apr-24																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	1	4	88	Off-Road	0.03	0.39	0.69	0.00	0.01	0.01	99.87	0.03	0.01	0.000	0.004	0.008	0.000	0.000	0.000	1.099	0.000	0.000	1.15
Crane - 20 ton	Cranes	2	8	176	Off-Road	0.50	4.64	4.48	0.01	0.22	0.20	627.01	0.20	0.09	0.003	0.026	0.025	0.000	0.001	0.001	3.449	0.001	0.000	3.63
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	1	4	88	Off-Road	0.08	0.63	0.96	0.00	0.03	0.03	160.76	0.01	0.00	0.001	0.007	0.011	0.000	0.000	0.000	1.768	0.000	0.000	1.78
Backhoe	Tractors/Loaders/Backhoes	1	4	88	Off-Road	0.07	0.68	1.11	0.00	0.03	0.03	150.26	0.05	0.02	0.001	0.008	0.012	0.000	0.000	0.000	1.653	0.001	0.000	1.74
Bobcat S510	Skid Steer Loaders	1	4	88	Off-Road	0.09	0.53	0.69	0.00	0.02	0.02	76.81	0.02	0.01	0.001	0.006	0.008	0.000	0.000	0.000	0.845	0.000	0.000	0.89
Forklift	Forklifts	3	12	264	Off-Road	0.43	3.79	5.15	0.01	0.20	0.18	669.43	0.22	0.10	0.002	0.014	0.019	0.000	0.001	0.001	2.455	0.001	0.000	2.58
Water Truck	Off-Highway Trucks	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Apr-24	**TOTAL**			**792.00**		**1.20**	**10.66**	**13.08**	**0.02**	**0.50**	**0.47**	**1,784.15**	**0.53**	**0.24**	**0.01**	**0.06**	**0.08**	**0.00**	**0.00**	**0.00**	**11.27**	**0.00**	**0.00**	**11.77**
May-24																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	1	4	88	Off-Road	0.03	0.39	0.69	0.00	0.01	0.01	99.87	0.03	0.01	0.000	0.004	0.008	0.000	0.000	0.000	1.099	0.000	0.000	1.15
Crane - 20 ton	Cranes	2	8	176	Off-Road	0.50	4.64	4.48	0.01	0.22	0.20	627.01	0.20	0.09	0.003	0.026	0.025	0.000	0.001	0.001	3.449	0.001	0.000	3.63
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	1	4	88	Off-Road	0.08	0.63	0.96	0.00	0.03	0.03	160.76	0.01	0.00	0.001	0.007	0.011	0.000	0.000	0.000	1.768	0.000	0.000	1.78
Backhoe	Tractors/Loaders/Backhoes	1	4	88	Off-Road	0.07	0.68	1.11	0.00	0.03	0.03	150.26	0.05	0.02	0.001	0.008	0.012	0.000	0.000	0.000	1.653	0.001	0.000	1.74
Bobcat S510	Skid Steer Loaders	1	4	88	Off-Road	0.09	0.53	0.69	0.00	0.02	0.02	76.81	0.02	0.01	0.001	0.006	0.008	0.000	0.000	0.000	0.845	0.000	0.000	0.89
Forklift	Forklifts	3	12	264	Off-Road	0.43	3.79	5.15	0.01	0.20	0.18	669.43	0.22	0.10	0.002	0.014	0.019	0.000	0.001	0.001	2.455	0.001	0.000	2.58
Water Truck	Off-Highway Trucks	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
May-24	**TOTAL**			**792.00**		**1.20**	**10.66**	**13.08**	**0.02**	**0.50**	**0.47**	**1,784.15**	**0.53**	**0.24**	**0.01**	**0.06**	**0.08**	**0.00**	**0.00**	**0.00**	**11.27**	**0.00**	**0.00**	**11.77**
Jun-24																								
Excavator - 5 yard bucket	Excavators	1	4	88	Off-Road	0.07	0.70	1.13	0.00	0.03	0.03	152.67	0.05	0.02	0.001	0.008	0.012	0.000	0.000	0.000	1.679	0.001	0.000	1.77
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00

LADWP North Hollywood Chlorination Stations Project
Off-Road Equipment Emissions

Equipment - Project-Specific Name	Equipment	# of Units	Hrs/Day	Hours per Month	Category	Daily Emissions (lb/day)									Monthly Emissions (tons/month)									
						ROG	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	ROG	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	CO2E
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	1	4	88	Off-Road	0.03	0.39	0.69	0.00	0.01	0.01	99.87	0.03	0.01	0.000	0.004	0.008	0.000	0.000	0.000	1.099	0.000	0.000	1.15
Crane - 20 ton	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	1	4	88	Off-Road	0.08	0.63	0.96	0.00	0.03	0.03	160.76	0.01	0.00	0.001	0.007	0.011	0.000	0.000	0.000	1.768	0.000	0.000	1.78
Backhoe	Tractors/Loaders/Backhoes	1	4	88	Off-Road	0.07	0.68	1.11	0.00	0.03	0.03	150.26	0.05	0.02	0.001	0.008	0.012	0.000	0.000	0.000	1.653	0.001	0.000	1.74
Bobcat S510	Skid Steer Loaders	1	4	88	Off-Road	0.09	0.53	0.69	0.00	0.02	0.02	76.81	0.02	0.01	0.001	0.006	0.008	0.000	0.000	0.000	0.845	0.000	0.000	0.89
Forklift	Forklifts	3	12	264	Off-Road	0.43	3.79	5.15	0.01	0.20	0.18	669.43	0.22	0.10	0.002	0.014	0.019	0.000	0.001	0.001	2.455	0.001	0.000	2.58
Water Truck	Off-Highway Trucks	1	4	88	Off-Road	0.25	1.59	1.63	0.01	0.05	0.05	643.34	0.21	0.09	0.003	0.017	0.018	0.000	0.001	0.001	7.077	0.002	0.001	7.44
Jun-24	**TOTAL**			**792.00**		**1.02**	**8.31**	**11.36**	**0.02**	**0.36**	**0.34**	**1,953.15**	**0.59**	**0.26**	**0.01**	**0.06**	**0.09**	**0.00**	**0.00**	**0.00**	**16.58**	**0.00**	**0.00**	**17.35**
Jul-24																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	1	4	88	Off-Road	0.03	0.39	0.69	0.00	0.01	0.01	99.87	0.03	0.01	0.000	0.004	0.008	0.000	0.000	0.000	1.099	0.000	0.000	1.15
Crane - 20 ton	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Backhoe	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Bobcat S510	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Forklift	Forklifts	3	12	264	Off-Road	0.43	3.79	5.15	0.01	0.20	0.18	669.43	0.22	0.10	0.002	0.014	0.019	0.000	0.001	0.001	2.455	0.001	0.000	2.58
Water Truck	Off-Highway Trucks	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Jul-24	**TOTAL**			**352.00**		**0.46**	**4.18**	**5.84**	**0.01**	**0.21**	**0.19**	**769.30**	**0.25**	**0.11**	**0.00**	**0.02**	**0.03**	**0.00**	**0.00**	**0.00**	**3.55**	**0.00**	**0.00**	**3.74**
Aug-24																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	1	4	88	Off-Road	0.03	0.39	0.69	0.00	0.01	0.01	99.87	0.03	0.01	0.000	0.004	0.008	0.000	0.000	0.000	1.099	0.000	0.000	1.15
Crane - 20 ton	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Backhoe	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Bobcat S510	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Forklift	Forklifts	3	12	264	Off-Road	0.43	3.79	5.15	0.01	0.20	0.18	669.43	0.22	0.10	0.002	0.014	0.019	0.000	0.001	0.001	2.455	0.001	0.000	2.58
Water Truck	Off-Highway Trucks	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Aug-24	**TOTAL**			**352.00**		**0.46**	**4.18**	**5.84**	**0.01**	**0.21**	**0.19**	**769.30**	**0.25**	**0.11**	**0.00**	**0.02**	**0.03**	**0.00**	**0.00**	**0.00**	**3.55**	**0.00**	**0.00**	**3.74**
Sep-24																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	1	4	88	Off-Road	0.03	0.39	0.69	0.00	0.01	0.01	99.87	0.03	0.01	0.000	0.004	0.008	0.000	0.000	0.000	1.099	0.000	0.000	1.15
Crane - 20 ton	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Backhoe	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Bobcat S510	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Forklift	Forklifts	3	12	264	Off-Road	0.43	3.79	5.15	0.01	0.20	0.18	669.43	0.22	0.10	0.002	0.014	0.019	0.000	0.001	0.001	2.455	0.001	0.000	2.58
Water Truck	Off-Highway Trucks	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Sep-24	**TOTAL**			**352.00**		**0.46**	**4.18**	**5.84**	**0.01**	**0.21**	**0.19**	**769.30**	**0.25**	**0.11**	**0.00**	**0.02**	**0.03**	**0.00**	**0.00**	**0.00**	**3.55**	**0.00**	**0.00**	**3.74**
Oct-24																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	1	4	88	Off-Road	0.03	0.39	0.69	0.00	0.01	0.01	99.87	0.03	0.01	0.000	0.004	0.008	0.000	0.000	0.000	1.099	0.000	0.000	1.15
Crane - 20 ton	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Backhoe	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Bobcat S510	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Forklift	Forklifts	3	12	264	Off-Road	0.43	3.79	5.15	0.01	0.20	0.18	669.43	0.22	0.10	0.002	0.014	0.019	0.000	0.001	0.001	2.455	0.001	0.000	2.58

LADWP North Hollywood Chlorination Stations Project
Off-Road Equipment Emissions

Equipment - Project-Specific Name	Equipment	# of Units	Hrs/Day	Hours per Month	Category	Daily Emissions (lb/day)									Monthly Emissions (tons/month)									
						ROG	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	ROG	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	CO2E
Water Truck	Off-Highway Trucks	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Oct-24	**TOTAL**			**352.00**		**0.46**	**4.18**	**5.84**	**0.01**	**0.21**	**0.19**	**769.30**	**0.25**	**0.11**	**0.00**	**0.02**	**0.03**	**0.00**	**0.00**	**0.00**	**3.55**	**0.00**	**0.00**	**3.74**
Nov-24																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	1	4	88	Off-Road	0.03	0.39	0.69	0.00	0.01	0.01	99.87	0.03	0.01	0.000	0.004	0.008	0.000	0.000	0.000	1.099	0.000	0.000	1.15
Crane - 20 ton	Cranes	1	4	88	Off-Road	0.13	1.16	1.12	0.00	0.06	0.05	156.75	0.05	0.02	0.001	0.013	0.012	0.000	0.001	0.001	1.724	0.001	0.000	1.81
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	1	4	88	Off-Road	0.08	0.63	0.96	0.00	0.03	0.03	160.76	0.01	0.00	0.001	0.007	0.011	0.000	0.000	0.000	1.768	0.000	0.000	1.78
Backhoe	Tractors/Loaders/Backhoes	1	4	88	Off-Road	0.07	0.68	1.11	0.00	0.03	0.03	150.26	0.05	0.02	0.001	0.008	0.012	0.000	0.000	0.000	1.653	0.001	0.000	1.74
Bobcat S510	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Forklift	Forklifts	3	12	264	Off-Road	0.43	3.79	5.15	0.01	0.20	0.18	669.43	0.22	0.10	0.002	0.014	0.019	0.000	0.001	0.001	2.455	0.001	0.000	2.58
Water Truck	Off-Highway Trucks	1	4	88	Off-Road	0.25	1.59	1.63	0.01	0.05	0.05	643.34	0.21	0.09	0.003	0.017	0.018	0.000	0.001	0.001	7.077	0.002	0.001	7.44
Nov-24	**TOTAL**			**704.00**		**0.98**	**8.24**	**10.67**	**0.02**	**0.37**	**0.34**	**1,880.42**	**0.56**	**0.25**	**0.01**	**0.06**	**0.08**	**0.00**	**0.00**	**0.00**	**15.78**	**0.00**	**0.00**	**16.51**
Dec-24																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	1	4	88	Off-Road	0.03	0.39	0.69	0.00	0.01	0.01	99.87	0.03	0.01	0.000	0.004	0.008	0.000	0.000	0.000	1.099	0.000	0.000	1.15
Crane - 20 ton	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	1	4	88	Off-Road	0.08	0.63	0.96	0.00	0.03	0.03	160.76	0.01	0.00	0.001	0.007	0.011	0.000	0.000	0.000	1.768	0.000	0.000	1.78
Backhoe	Tractors/Loaders/Backhoes	1	4	88	Off-Road	0.07	0.68	1.11	0.00	0.03	0.03	150.26	0.05	0.02	0.001	0.008	0.012	0.000	0.000	0.000	1.653	0.001	0.000	1.74
Bobcat S510	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Forklift	Forklifts	3	12	264	Off-Road	0.43	3.79	5.15	0.01	0.20	0.18	669.43	0.22	0.10	0.002	0.014	0.019	0.000	0.001	0.001	2.455	0.001	0.000	2.58
Water Truck	Off-Highway Trucks	1	4	88	Off-Road	0.25	1.59	1.63	0.01	0.05	0.05	643.34	0.21	0.09	0.003	0.017	0.018	0.000	0.001	0.001	7.077	0.002	0.001	7.44
Dec-24	**TOTAL**			**616.00**		**0.86**	**7.08**	**9.55**	**0.02**	**0.31**	**0.29**	**1,723.67**	**0.51**	**0.23**	**0.01**	**0.05**	**0.07**	**0.00**	**0.00**	**0.00**	**14.05**	**0.00**	**0.00**	**14.69**
MAXIMUM SUMMARY						**1.20**	**10.66**	**13.08**	**0.02**	**0.50**	**0.47**	**1,953.15**	**0.59**	**0.26**	0.01	0.07	0.09	0.00	0.00	0.00	16.58	0.00	0.00	17.35
ANNUAL TOTAL - TONS															0.07	0.56	0.73	0.00	0.02	0.02	116.72	0.03	0.02	122.08
ANNUAL TOTAL - METRIC TONS																					**128.66**	**0.04**	**0.02**	**134.57**
Jan-25																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	1	4	88	Off-Road	0.03	0.37	0.69	0.00	0.01	0.01	99.83	0.03	0.01	0.000	0.004	0.008	0.000	0.000	0.000	1.098	0.000	0.000	1.15
Crane - 20 ton	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	1	4	88	Off-Road	0.07	0.59	0.96	0.00	0.02	0.02	160.76	0.01	0.00	0.001	0.007	0.011	0.000	0.000	0.000	1.768	0.000	0.000	1.78
Backhoe	Tractors/Loaders/Backhoes	1	4	88	Off-Road	0.07	0.63	1.11	0.00	0.02	0.02	150.41	0.05	0.02	0.001	0.007	0.012	0.000	0.000	0.000	1.654	0.001	0.000	1.74

LADWP North Hollywood Chlorination Stations Project
Off-Road Equipment Emissions

Equipment - Project-Specific Name	Equipment	# of Units	Hrs/Day	Hours per Month	Category	Daily Emissions (lb/day)									Monthly Emissions (tons/month)									
						ROG	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	ROG	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	CO2E
Bobcat S510	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Forklift	Forklifts	3	12	264	Off-Road	0.39	3.51	5.13	0.01	0.17	0.16	669.43	0.22	0.10	0.001	0.013	0.019	0.000	0.001	0.001	2.455	0.001	0.000	2.58
Water Truck	Off-Highway Trucks	1	4	88	Off-Road	0.24	1.37	1.60	0.01	0.04	0.04	643.00	0.21	0.09	0.003	0.015	0.018	0.000	0.000	0.000	7.073	0.002	0.001	7.44
Jan-25	**TOTAL**			**616.00**		**0.80**	**6.47**	**9.48**	**0.02**	**0.27**	**0.25**	**1,723.43**	**0.51**	**0.23**	**0.01**	**0.05**	**0.07**	**0.00**	**0.00**	**0.00**	**14.05**	**0.00**	**0.00**	**14.69**
Feb-25																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	1	4	88	Off-Road	0.03	0.37	0.69	0.00	0.01	0.01	99.83	0.03	0.01	0.000	0.004	0.008	0.000	0.000	0.000	1.098	0.000	0.000	1.15
Crane - 20 ton	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	1	4	88	Off-Road	0.07	0.59	0.96	0.00	0.02	0.02	160.76	0.01	0.00	0.001	0.007	0.011	0.000	0.000	0.000	1.768	0.000	0.000	1.78
Backhoe	Tractors/Loaders/Backhoes	2	8	176	Off-Road	0.26	2.52	4.44	0.01	0.09	0.08	601.63	0.19	0.09	0.001	0.014	0.024	0.000	0.001	0.000	3.309	0.001	0.000	3.48
Bobcat S510	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Forklift	Forklifts	3	12	264	Off-Road	0.39	3.51	5.13	0.01	0.17	0.16	669.43	0.22	0.10	0.001	0.013	0.019	0.000	0.001	0.001	2.455	0.001	0.000	2.58
Water Truck	Off-Highway Trucks	2	8	176	Off-Road	0.96	5.46	6.40	0.03	0.18	0.16	2,572.00	0.83	0.37	0.005	0.030	0.035	0.000	0.001	0.001	14.146	0.005	0.002	14.87
Feb-25	**TOTAL**			**792.00**		**1.72**	**12.46**	**17.62**	**0.04**	**0.47**	**0.43**	**4,103.65**	**1.28**	**0.57**	**0.01**	**0.07**	**0.10**	**0.00**	**0.00**	**0.00**	**22.78**	**0.01**	**0.00**	**23.86**
Mar-25																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	1	4	88	Off-Road	0.03	0.37	0.69	0.00	0.01	0.01	99.83	0.03	0.01	0.000	0.004	0.008	0.000	0.000	0.000	1.098	0.000	0.000	1.15
Crane - 20 ton	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	1	4	88	Off-Road	0.07	0.59	0.96	0.00	0.02	0.02	160.76	0.01	0.00	0.001	0.007	0.011	0.000	0.000	0.000	1.768	0.000	0.000	1.78
Backhoe	Tractors/Loaders/Backhoes	1	4	88	Off-Road	0.07	0.63	1.11	0.00	0.02	0.02	150.41	0.05	0.02	0.001	0.007	0.012	0.000	0.000	0.000	1.654	0.001	0.000	1.74
Bobcat S510	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Forklift	Forklifts	3	12	264	Off-Road	0.39	3.51	5.13	0.01	0.17	0.16	669.43	0.22	0.10	0.001	0.013	0.019	0.000	0.001	0.001	2.455	0.001	0.000	2.58
Water Truck	Off-Highway Trucks	2	8	176	Off-Road	0.96	5.46	6.40	0.03	0.18	0.16	2,572.00	0.83	0.37	0.005	0.030	0.035	0.000	0.001	0.001	14.146	0.005	0.002	14.87
Mar-25	**TOTAL**			**704.00**		**1.52**	**10.57**	**14.29**	**0.04**	**0.40**	**0.37**	**3,652.43**	**1.14**	**0.51**	**0.01**	**0.06**	**0.08**	**0.00**	**0.00**	**0.00**	**21.12**	**0.01**	**0.00**	**22.13**
Apr-25																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	1	4	88	Off-Road	0.03	0.37	0.69	0.00	0.01	0.01	99.83	0.03	0.01	0.000	0.004	0.008	0.000	0.000	0.000	1.098	0.000	0.000	1.15
Crane - 20 ton	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	1	4	88	Off-Road	0.07	0.59	0.96	0.00	0.02	0.02	160.76	0.01	0.00	0.001	0.007	0.011	0.000	0.000	0.000	1.768	0.000	0.000	1.78
Backhoe	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Bobcat S510	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Forklift	Forklifts	3	12	264	Off-Road	0.39	3.51	5.13	0.01	0.17	0.16	669.43	0.22	0.10	0.001	0.013	0.019	0.000	0.001	0.001	2.455	0.001	0.000	2.58
Water Truck	Off-Highway Trucks	2	8	176	Off-Road	0.96	5.46	6.40	0.03	0.18	0.16	2,572.00	0.83	0.37	0.005	0.030	0.035	0.000	0.001	0.001	14.146	0.005	0.002	14.87
Apr-25	**TOTAL**			**616.00**		**1.46**	**9.94**	**13.17**	**0.04**	**0.38**	**0.35**	**3,502.02**	**1.09**	**0.49**	**0.01**	**0.05**	**0.07**	**0.00**	**0.00**	**0.00**	**19.47**	**0.01**	**0.00**	**20.39**
May-25																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 20 ton	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	1	4	88	Off-Road	0.07	0.59	0.96	0.00	0.02	0.02	160.76	0.01	0.00	0.001	0.007	0.011	0.000	0.000	0.000	1.768	0.000	0.000	1.78
Backhoe	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Bobcat S510	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Forklift	Forklifts	3	12	264	Off-Road	0.39	3.51	5.13	0.01	0.17	0.16	669.43	0.22	0.10	0.001	0.013	0.019	0.000	0.001	0.001	2.455	0.001	0.000	2.58
Water Truck	Off-Highway Trucks	1	4	88	Off-Road	0.24	1.37	1.60	0.01	0.04	0.04	643.00	0.21	0.09	0.003	0.015	0.018	0.000	0.000	0.000	7.073	0.002	0.001	7.44
May-25	**TOTAL**			**440.00**		**0.71**	**5.47**	**7.69**	**0.02**	**0.23**	**0.22**	**1,473.19**	**0.43**	**0.19**	**0.00**	**0.03**	**0.05**	**0.00**	**0.00**	**0.00**	**11.30**	**0.00**	**0.00**	**11.80**
Jun-25																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00

LADWP North Hollywood Chlorination Stations Project
Off-Road Equipment Emissions

Equipment - Project-Specific Name	Equipment	# of Units	Hrs/Day	Hours per Month	Category	Daily Emissions (lb/day)									Monthly Emissions (tons/month)									
						ROG	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	ROG	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	CO2E
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 20 ton	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Backhoe	Tractors/Loaders/Backhoes	1	4	88	Off-Road	0.07	0.63	1.11	0.00	0.02	0.02	150.41	0.05	0.02	0.001	0.007	0.012	0.000	0.000	0.000	1.654	0.001	0.000	1.74
Bobcat S510	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Forklift	Forklifts	3	12	264	Off-Road	0.39	3.51	5.13	0.01	0.17	0.16	669.43	0.22	0.10	0.001	0.013	0.019	0.000	0.001	0.001	2.455	0.001	0.000	2.58
Water Truck	Off-Highway Trucks	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Jun-25	**TOTAL**			**352.00**		**0.46**	**4.14**	**6.24**	**0.01**	**0.19**	**0.18**	**819.84**	**0.27**	**0.12**	**0.00**	**0.02**	**0.03**	**0.00**	**0.00**	**0.00**	**4.11**	**0.00**	**0.00**	**4.32**
Jul-25																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 20 ton	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Backhoe	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Bobcat S510	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Forklift	Forklifts	3	12	264	Off-Road	0.39	3.51	5.13	0.01	0.17	0.16	669.43	0.22	0.10	0.001	0.013	0.019	0.000	0.001	0.001	2.455	0.001	0.000	2.58
Water Truck	Off-Highway Trucks	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Jul-25	**TOTAL**			**264.00**		**0.39**	**3.51**	**5.13**	**0.01**	**0.17**	**0.16**	**669.43**	**0.22**	**0.10**	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**2.45**	**0.00**	**0.00**	**2.58**
Aug-25																								

LADWP North Hollywood Chlorination Stations Project
Off-Road Equipment Emissions

Equipment - Project-Specific Name	Equipment	# of Units	Hrs/Day	Hours per Month	Category	Daily Emissions (lb/day) ROG	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	Monthly Emissions (tons/month) ROG	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	CO2E
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 20 ton	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Backhoe	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Bobcat S510	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Forklift	Forklifts	3	12	264	Off-Road	0.39	3.51	5.13	0.01	0.17	0.16	669.43	0.22	0.10	0.001	0.013	0.019	0.000	0.001	0.001	2.455	0.001	0.000	2.58
Water Truck	Off-Highway Trucks	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Aug-25	**TOTAL**			**264.00**		**0.39**	**3.51**	**5.13**	**0.01**	**0.17**	**0.16**	**669.43**	**0.22**	**0.10**	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**2.45**	**0.00**	**0.00**	**2.58**
Sep-25																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 20 ton	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Backhoe	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Bobcat S510	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Forklift	Forklifts	2	8	176	Off-Road	0.17	1.56	2.28	0.00	0.08	0.07	297.53	0.10	0.04	0.001	0.009	0.013	0.000	0.000	0.000	1.636	0.001	0.000	1.72
Water Truck	Off-Highway Trucks	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Sep-25	**TOTAL**			**176.00**		**0.17**	**1.56**	**2.28**	**0.00**	**0.08**	**0.07**	**297.53**	**0.10**	**0.04**	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**1.64**	**0.00**	**0.00**	**1.72**
Oct-25																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 20 ton	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Backhoe	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Bobcat S510	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Forklift	Forklifts	2	8	176	Off-Road	0.17	1.56	2.28	0.00	0.08	0.07	297.53	0.10	0.04	0.001	0.009	0.013	0.000	0.000	0.000	1.636	0.001	0.000	1.72
Water Truck	Off-Highway Trucks	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Oct-25	**TOTAL**			**176.00**		**0.17**	**1.56**	**2.28**	**0.00**	**0.08**	**0.07**	**297.53**	**0.10**	**0.04**	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**1.64**	**0.00**	**0.00**	**1.72**
Nov-25																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 20 ton	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Backhoe	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Bobcat S510	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Forklift	Forklifts	2	8	176	Off-Road	0.17	1.56	2.28	0.00	0.08	0.07	297.53	0.10	0.04	0.001	0.009	0.013	0.000	0.000	0.000	1.636	0.001	0.000	1.72
Water Truck	Off-Highway Trucks	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Nov-25	**TOTAL**			**176.00**		**0.17**	**1.56**	**2.28**	**0.00**	**0.08**	**0.07**	**297.53**	**0.10**	**0.04**	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**1.64**	**0.00**	**0.00**	**1.72**
Dec-25																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 20 ton	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Backhoe	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00

LADWP North Hollywood Chlorination Stations Project
Off-Road Equipment Emissions

Equipment - Project-Specific Name	Equipment	# of Units	Hrs/Day	Hours per Month	Category	Daily Emissions (lb/day)									Monthly Emissions (tons/month)									
						ROG	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	ROG	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	CO2E
Bobcat S510	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Forklift	Forklifts	2	8	176	Off-Road	0.17	1.56	2.28	0.00	0.08	0.07	297.53	0.10	0.04	0.001	0.009	0.013	0.000	0.000	0.000	1.636	0.001	0.000	1.72
Water Truck	Off-Highway Trucks	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Dec-25	**TOTAL**			**176.00**		**0.17**	**1.56**	**2.28**	**0.00**	**0.08**	**0.07**	**297.53**	**0.10**	**0.04**	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**1.64**	**0.00**	**0.00**	**1.72**
MAXIMUM SUMMARY						**1.72**	**12.46**	**17.62**	**0.04**	**0.47**	**0.43**	**4,103.65**	**1.28**	**0.57**	0.01	0.07	0.10	0.00	0.00	0.00	22.78	0.01	0.00	23.86
ANNUAL TOTAL - TONS															0.05	0.34	0.49	0.00	0.01	0.01	104.27	0.03	0.01	109.22
ANNUAL TOTAL - METRIC TONS																					**114.94**	**0.03**	**0.02**	**120.40**
Jan-26																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 20 ton	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Backhoe	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Bobcat S510	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Forklift	Forklifts	1	4	88	Off-Road	0.04	0.39	0.57	0.00	0.02	0.02	74.38	0.02	0.01	0.000	0.004	0.006	0.000	0.000	0.000	0.818	0.000	0.000	0.86
Water Truck	Off-Highway Trucks	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Jan-26	**TOTAL**			**88.00**		**0.04**	**0.39**	**0.57**	**0.00**	**0.02**	**0.02**	**74.38**	**0.02**	**0.01**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.82**	**0.00**	**0.00**	**0.86**
Feb-26																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 20 ton	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Backhoe	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Bobcat S510	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Forklift	Forklifts	1	4	88	Off-Road	0.04	0.39	0.57	0.00	0.02	0.02	74.38	0.02	0.01	0.000	0.004	0.006	0.000	0.000	0.000	0.818	0.000	0.000	0.86
Water Truck	Off-Highway Trucks	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Feb-26	**TOTAL**			**88.00**		**0.04**	**0.39**	**0.57**	**0.00**	**0.02**	**0.02**	**74.38**	**0.02**	**0.01**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.82**	**0.00**	**0.00**	**0.86**
Mar-26																								
Excavator - 5 yard bucket	Excavators	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Front end Loader - 5 yard	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Compaction Roller	Rollers	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Skid Steer	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 20 ton	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Crane - 50 ton (RT700E)	Cranes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Concrete Pump Truck	Pumps	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Backhoe	Tractors/Loaders/Backhoes	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Bobcat S510	Skid Steer Loaders	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Forklift	Forklifts	1	4	88	Off-Road	0.04	0.39	0.57	0.00	0.02	0.02	74.38	0.02	0.01	0.000	0.004	0.006	0.000	0.000	0.000	0.818	0.000	0.000	0.86
Water Truck	Off-Highway Trucks	0	0	0	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Mar-26	**TOTAL**			**88.00**		**0.04**	**0.39**	**0.57**	**0.00**	**0.02**	**0.02**	**74.38**	**0.02**	**0.01**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.82**	**0.00**	**0.00**	**0.86**
MAXIMUM SUMMARY						**0.04**	**0.39**	**0.57**	**0.00**	**0.02**	**0.02**	**74.38**	**0.02**	**0.01**	0.00	0.00	0.01	0.00	0.00	0.00	0.82	0.00	0.00	0.86
ANNUAL TOTAL - TONS															0.00	0.01	0.02	0.00	0.00	0.00	2.45	0.00	0.00	2.58
ANNUAL TOTAL - METRIC TONS																					**2.71**	**0.00**	**0.00**	**2.84**

LADWP North Hollywood Chlorination Stations Project
Vehicle Emissions Summary

	Daily Emissions (lb/day)									Monthly Emissions (tons/month)									
	ROG	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**	**CO2**	**CH4**	**N2O**	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**	**CO2**	**CH4**	**N2O**	**CO2E**
2023																			
Jul-23	0.00	0.15	0.07	0.00	0.01	0.01	149.22	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	1.64	0.00	0.00	1.71
Aug-23	0.00	0.16	0.20	0.00	0.01	0.01	189.73	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	2.09	0.00	0.00	2.16
Sep-23	0.02	1.39	0.63	0.01	0.11	0.05	1342.97	0.00	0.19	0.00	0.02	0.01	0.00	0.00	0.00	14.77	0.00	0.00	15.38
Oct-23	0.04	1.74	1.28	0.02	0.15	0.06	1803.47	0.01	0.23	0.00	0.02	0.01	0.00	0.00	0.00	19.84	0.00	0.00	20.60
Nov-23	0.02	0.68	1.22	0.01	0.07	0.03	900.75	0.00	0.09	0.00	0.01	0.01	0.00	0.00	0.00	9.91	0.00	0.00	10.20
Dec-23	0.03	0.70	1.53	0.01	0.08	0.03	1002.04	0.01	0.09	0.00	0.01	0.02	0.00	0.00	0.00	11.02	0.00	0.00	11.32
2024																			
Jan-24	0.03	0.52	1.47	0.01	0.06	0.03	876.75	0.01	0.07	0.00	0.01	0.02	0.00	0.00	0.00	9.64	0.00	0.00	9.87
Feb-24	0.03	0.53	1.53	0.01	0.07	0.03	896.52	0.01	0.07	0.00	0.01	0.02	0.00	0.00	0.00	9.86	0.00	0.00	10.09
Mar-24	0.03	0.69	1.83	0.01	0.08	0.03	1122.89	0.01	0.09	0.00	0.01	0.02	0.00	0.00	0.00	12.35	0.00	0.00	12.65
Apr-24	0.03	0.67	1.54	0.01	0.08	0.03	1024.09	0.01	0.09	0.00	0.01	0.02	0.00	0.00	0.00	11.27	0.00	0.00	11.56
May-24	0.03	0.67	1.54	0.01	0.08	0.03	1024.09	0.01	0.09	0.00	0.01	0.02	0.00	0.00	0.00	11.27	0.00	0.00	11.56
Jun-24	0.03	0.83	1.83	0.01	0.09	0.04	1250.46	0.01	0.11	0.00	0.01	0.02	0.00	0.00	0.00	13.76	0.00	0.00	14.12
Jul-24	0.03	0.38	1.52	0.01	0.06	0.02	768.95	0.01	0.05	0.00	0.00	0.02	0.00	0.00	0.00	8.46	0.00	0.00	8.62
Aug-24	0.02	0.24	1.51	0.01	0.04	0.02	641.38	0.01	0.03	0.00	0.00	0.02	0.00	0.00	0.00	7.06	0.00	0.00	7.15
Sep-24	0.03	0.27	1.98	0.01	0.05	0.02	799.47	0.01	0.03	0.00	0.00	0.02	0.00	0.00	0.00	8.79	0.00	0.00	8.90
Oct-24	0.03	0.41	1.93	0.01	0.06	0.02	907.28	0.01	0.05	0.00	0.00	0.02	0.00	0.00	0.00	9.98	0.00	0.00	10.15
Nov-24	0.03	0.96	1.61	0.01	0.10	0.04	1298.99	0.01	0.13	0.00	0.01	0.02	0.00	0.00	0.00	14.29	0.00	0.00	14.72
Dec-24	0.03	0.96	1.61	0.01	0.10	0.04	1298.99	0.01	0.13	0.00	0.01	0.02	0.00	0.00	0.00	14.29	0.00	0.00	14.72
2025																			
Jan-25	0.02	0.48	1.10	0.01	0.06	0.02	764.27	0.00	0.07	0.00	0.01	0.01	0.00	0.00	0.00	8.41	0.00	0.00	8.63
Feb-25	0.02	0.48	1.16	0.01	0.06	0.02	783.58	0.00	0.07	0.00	0.01	0.01	0.00	0.00	0.00	8.62	0.00	0.00	8.84
Mar-25	0.02	0.62	1.16	0.01	0.07	0.03	909.65	0.00	0.09	0.00	0.01	0.01	0.00	0.00	0.00	10.01	0.00	0.00	10.29
Apr-25	0.02	0.63	1.33	0.01	0.07	0.03	967.56	0.01	0.09	0.00	0.01	0.01	0.00	0.00	0.00	10.64	0.00	0.00	10.93
May-25	0.02	0.49	1.37	0.01	0.06	0.02	860.79	0.01	0.07	0.00	0.01	0.02	0.00	0.00	0.00	9.47	0.00	0.00	9.69
Jun-25	0.02	0.34	1.10	0.01	0.05	0.02	638.20	0.00	0.05	0.00	0.00	0.01	0.00	0.00	0.00	7.02	0.00	0.00	7.17
Jul-25	0.02	0.33	0.88	0.01	0.04	0.02	560.99	0.00	0.05	0.00	0.00	0.01	0.00	0.00	0.00	6.17	0.00	0.00	6.32
Aug-25	0.01	0.18	0.71	0.00	0.03	0.01	377.01	0.00	0.02	0.00	0.00	0.01	0.00	0.00	0.00	4.15	0.00	0.00	4.23
Sep-25	0.00	0.01	0.22	0.00	0.01	0.00	77.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.85
Oct-25	0.00	0.01	0.22	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.85
Nov-25	0.00	0.01	0.22	0.00	0.01	0.00	77.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.85
Dec-25	0.00	0.01	0.22	0.00	0.01	0.00	77.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.85
2026																			
Jan-26	0.00	0.01	0.10	0.00	0.00	0.00	37.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.41
Feb-26	0.00	0.01	0.10	0.00	0.00	0.00	37.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41
Mar-26	0.00	0.01	0.10	0.00	0.00	0.00	37.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41
SUMMARY - MAXIMUM DAILY	**0.04**	**1.74**	**1.98**	**0.02**	**0.15**	**0.06**	**1803.47**	**0.01**	**0.23**										
TOTAL - TONS										**0.01**	**0.17**	**0.38**	**0.00**	**0.02**	**0.01**	**258.57**	**0.00**	**0.02**	**266.25**
TOTAL - METRIC TONS																**285.02**	**0.00**	**0.03**	**293.49**

LADWP North Hollywood Chlorination Stations Project
On-Road Off-Site Vehicle Emissions

Trip Type	Vehicle Class	Work Days per Month	Trucks: Round Trips per Month	Trucks: One-Way Trips per Month	Trucks: One-Way Trips per Day	Miles per Trip	Category	Daily Emissions (lb/day) ROG	NOx	CO	SOx	PM10 Exhaust	PM10 PMTW	PM10 PMBW	PM10 Paved Road	TOTAL PM10	PM2.5 Exhaust	PM2.5 PMTW	PM2.5 PMBW	PM2.5 Paved Road	TOTAL PM2.5	CO2	CH4	N2O
Jul-23																								
Trucks	HHDT & MHDT	22	22	44	2	20	On-Road	0.00	0.15	0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	128.96	0.00	0.02
Workers	LDA, LDT1 & LDT2	22	22	44	2	15	On-Road	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.26	0.00	0.00
MONTH SUBTOTAL								**0.00**	**0.15**	**0.07**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**149.22**	**0.00**	**0.02**
Aug-23																								
Trucks	HHDT & MHDT	22	22	44	2	20	On-Road	0.00	0.15	0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	128.96	0.00	0.02
Workers	LDA, LDT1 & LDT2	22	66	132	6	15	On-Road	0.00	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.77	0.00	0.00
MONTH SUBTOTAL								**0.00**	**0.16**	**0.20**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**189.73**	**0.00**	**0.02**
Sep-23																								
Trucks	HHDT & MHDT	22	198	396	18	20	On-Road	0.01	1.35	0.07	0.01	0.02	0.02	0.06	0.00	0.10	0.02	0.01	0.02	0.00	0.04	1160.65	0.00	0.18
Workers	LDA, LDT1 & LDT2	22	198	396	18	15	On-Road	0.01	0.04	0.56	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	182.32	0.00	0.00
MONTH SUBTOTAL								**0.02**	**1.39**	**0.63**	**0.01**	**0.02**	**0.03**	**0.06**	**0.00**	**0.11**	**0.02**	**0.01**	**0.02**	**0.00**	**0.05**	**1342.97**	**0.00**	**0.19**
Oct-23																								
Trucks	HHDT & MHDT	22	242	484	22	20	On-Road	0.02	1.65	0.09	0.01	0.02	0.03	0.07	0.00	0.12	0.02	0.01	0.02	0.00	0.05	1418.57	0.00	0.22
Workers	LDA, LDT1 & LDT2	22	418	836	38	15	On-Road	0.02	0.08	1.19	0.00	0.00	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.01	384.90	0.00	0.01
MONTH SUBTOTAL								**0.04**	**1.74**	**1.28**	**0.02**	**0.02**	**0.04**	**0.08**	**0.00**	**0.15**	**0.02**	**0.01**	**0.03**	**0.00**	**0.06**	**1803.47**	**0.01**	**0.23**
Nov-23																								
Trucks	HHDT & MHDT	22	88	176	8	20	On-Road	0.01	0.60	0.03	0.00	0.01	0.01	0.03	0.00	0.04	0.01	0.00	0.01	0.00	0.02	515.84	0.00	0.08
Workers	LDA, LDT1 & LDT2	22	418	836	38	15	On-Road	0.02	0.08	1.19	0.00	0.00	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.01	384.90	0.00	0.01
MONTH SUBTOTAL								**0.02**	**0.68**	**1.22**	**0.01**	**0.01**	**0.02**	**0.04**	**0.00**	**0.07**	**0.01**	**0.01**	**0.01**	**0.00**	**0.03**	**900.75**	**0.00**	**0.09**
Dec-23																								
Trucks	HHDT & MHDT	22	88	176	8	20	On-Road	0.01	0.60	0.03	0.00	0.01	0.01	0.03	0.00	0.04	0.01	0.00	0.01	0.00	0.02	515.84	0.00	0.08
Workers	LDA, LDT1 & LDT2	22	528	1056	48	15	On-Road	0.02	0.10	1.50	0.00	0.00	0.01	0.01	0.00	0.03	0.00	0.00	0.01	0.00	0.01	486.19	0.01	0.01
MONTH SUBTOTAL								**0.03**	**0.70**	**1.53**	**0.01**	**0.01**	**0.02**	**0.04**	**0.00**	**0.08**	**0.01**	**0.01**	**0.01**	**0.00**	**0.03**	**1002.04**	**0.01**	**0.09**
MAXIMUM DAILY								**0.04**	**1.74**	**1.53**	**0.02**	**0.02**	**0.04**	**0.08**	**0.00**	**0.15**	**0.02**	**0.01**	**0.03**	**0.00**	**0.06**	**1803.47**	**0.01**	**0.23**

Trip Type	Monthly Emissions (tons/month) ROG	NOx	CO	SOx	PM10	PM10 PMTW	PM10 PMBW	PM10 Paved Road	TOTAL PM10	PM2.5 Exhaust	PM2.5 PMTW	PM2.5 PMBW	PM2.5 Paved Road	TOTAL PM2.5	CO2	CH4	N2O	CO2E
Jul-23																		
Trucks	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.419	0.000	0.000	1.485
Workers	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.223	0.000	0.000	0.224
MONTH SUBTOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.64**	**0.00**	**0.00**	**1.71**
Aug-23																		
Trucks	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.419	0.000	0.000	1.485
Workers	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.669	0.000	0.000	0.673
MONTH SUBTOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.09**	**0.00**	**0.00**	**2.16**
Sep-23																		
Trucks	0.000	0.015	0.001	0.000	0.000	0.001	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	12.767	0.000	0.002	13.367
Workers	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.006	0.000	0.000	2.018
MONTH SUBTOTAL	**0.00**	**0.02**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**14.77**	**0.00**	**0.00**	**15.38**
Oct-23																		
Trucks	0.000	0.018	0.001	0.000	0.000	0.001	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	15.605	0.000	0.002	16.337
Workers	0.000	0.001	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.234	0.000	0.000	4.260
MONTH SUBTOTAL	**0.00**	**0.02**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**19.84**	**0.00**	**0.00**	**20.60**
Nov-23																		
Trucks	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.674	0.000	0.001	5.941
Workers	0.000	0.001	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.234	0.000	0.000	4.260
MONTH SUBTOTAL	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**9.91**	**0.00**	**0.00**	**10.20**
Dec-23																		
Trucks	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.674	0.000	0.001	5.941
Workers	0.000	0.001	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.348	0.000	0.000	5.381
MONTH SUBTOTAL	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**11.02**	**0.00**	**0.00**	**11.32**
ANNUAL TOTAL - TONS	**0.00**	**0.05**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**59.27**	**0.00**	**0.01**	**61.37**
ANNUAL TOTAL - METRIC TONS															**65.33**	**0.00**	**0.01**	**67.65**

LADWP North Hollywood Chlorination Stations Project
On-Road Off-Site Vehicle Emissions

Trip Type	Vehicle Class	Work Days per Month	Trucks			Miles per Trip	Category	Daily Emissions (lb/day)																	Monthly Emissions (tons/month)																	
			Round Trips per Month	One-Way Trips per Month	One-Way Trips per Day			ROG	NOx	CO	SOx	PM10 Exhaust	PM10 PMTW	PM10 PMBW	PM10 Paved Road	TOTAL PM10	PM2.5 Exhaust	PM2.5 PMTW	PM2.5 PMBW	PM2.5 Paved Road	TOTAL PM2.5	CO2	CH4	N2O	ROG	NOx	CO	SOx	PM10	PM10 PMTW	PM10 PMBW	PM10 Paved Road	TOTAL PM10	PM2.5 Exhaust	PM2.5 PMTW	PM2.5 PMBW	PM2.5 Paved Road	TOTAL PM2.5	CO2	CH4	N2O	CO2E
Jan-24																																										
Trucks	HHDT & MHDT	22	66	132	6	20	On-Road	0.00	0.43	0.02	0.00	0.01	0.01	0.02	0.00	0.03	0.01	0.00	0.01	0.00	0.01	382.71	0.00	0.06	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.210	0.000	0.001	4.408
Workers	LDA, LDT1 & LDT2	22	550	1100	50	15	On-Road	0.02	0.10	1.45	0.00	0.00	0.01	0.01	0.00	0.03	0.00	0.00	0.01	0.00	0.01	494.04	0.01	0.01	0.000	0.001	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.435	0.000	0.000	5.466
MONTH SUBTOTAL								**0.03**	**0.52**	**1.47**	**0.01**	**0.01**	**0.02**	**0.03**	**0.00**	**0.06**	**0.01**	**0.01**	**0.01**	**0.00**	**0.03**	**876.75**	**0.01**	**0.07**	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**9.64**	**0.00**	**0.00**	**9.87**
Feb-24																																										
Trucks	HHDT & MHDT	22	66	132	6	20	On-Road	0.00	0.43	0.02	0.00	0.01	0.01	0.02	0.00	0.03	0.01	0.00	0.01	0.00	0.01	382.71	0.00	0.06	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.210	0.000	0.001	4.408
Workers	LDA, LDT1 & LDT2	22	572	1144	52	15	On-Road	0.02	0.10	1.51	0.01	0.00	0.01	0.02	0.00	0.03	0.00	0.00	0.01	0.00	0.01	513.81	0.01	0.01	0.000	0.001	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.652	0.000	0.000	5.684
MONTH SUBTOTAL								**0.03**	**0.53**	**1.53**	**0.01**	**0.01**	**0.02**	**0.03**	**0.00**	**0.07**	**0.01**	**0.01**	**0.01**	**0.00**	**0.03**	**896.52**	**0.01**	**0.07**	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**9.86**	**0.00**	**0.00**	**10.09**
Mar-24																																										
Trucks	HHDT & MHDT	22	88	176	8	20	On-Road	0.01	0.57	0.03	0.00	0.01	0.01	0.02	0.00	0.04	0.01	0.00	0.01	0.00	0.02	510.28	0.00	0.08	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.613	0.000	0.001	5.877
Workers	LDA, LDT1 & LDT2	22	682	1364	62	15	On-Road	0.03	0.12	1.80	0.01	0.00	0.02	0.02	0.00	0.04	0.00	0.00	0.01	0.00	0.01	612.61	0.01	0.01	0.000	0.001	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.739	0.000	0.000	6.777
MONTH SUBTOTAL								**0.03**	**0.69**	**1.83**	**0.01**	**0.01**	**0.03**	**0.04**	**0.00**	**0.08**	**0.01**	**0.01**	**0.02**	**0.00**	**0.03**	**1122.89**	**0.01**	**0.09**	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**12.35**	**0.00**	**0.00**	**12.65**
Apr-24																																										
Trucks	HHDT & MHDT	22	88	176	8	20	On-Road	0.01	0.57	0.03	0.00	0.01	0.01	0.02	0.00	0.04	0.01	0.00	0.01	0.00	0.02	510.28	0.00	0.08	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.613	0.000	0.001	5.877
Workers	LDA, LDT1 & LDT2	22	572	1144	52	15	On-Road	0.02	0.10	1.51	0.01	0.00	0.01	0.02	0.00	0.03	0.00	0.00	0.01	0.00	0.01	513.81	0.01	0.01	0.000	0.001	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.652	0.000	0.000	5.684
MONTH SUBTOTAL								**0.03**	**0.67**	**1.54**	**0.01**	**0.01**	**0.02**	**0.04**	**0.00**	**0.08**	**0.01**	**0.01**	**0.01**	**0.00**	**0.03**	**1024.09**	**0.01**	**0.09**	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**11.27**	**0.00**	**0.00**	**11.56**
May-24																																										
Trucks	HHDT & MHDT	22	88	176	8	20	On-Road	0.01	0.57	0.03	0.00	0.01	0.01	0.02	0.00	0.04	0.01	0.00	0.01	0.00	0.02	510.28	0.00	0.08	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.613	0.000	0.001	5.877
Workers	LDA, LDT1 & LDT2	22	572	1144	52	15	On-Road	0.02	0.10	1.51	0.01	0.00	0.01	0.02	0.00	0.03	0.00	0.00	0.01	0.00	0.01	513.81	0.01	0.01	0.000	0.001	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.652	0.000	0.000	5.684
MONTH SUBTOTAL								**0.03**	**0.67**	**1.54**	**0.01**	**0.01**	**0.02**	**0.04**	**0.00**	**0.08**	**0.01**	**0.01**	**0.01**	**0.00**	**0.03**	**1024.09**	**0.01**	**0.09**	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**11.27**	**0.00**	**0.00**	**11.56**
Jun-24																																										
Trucks	HHDT & MHDT	22	110	220	10	20	On-Road	0.01	0.71	0.04	0.01	0.01	0.01	0.03	0.00	0.05	0.01	0.00	0.01	0.00	0.02	637.85	0.00	0.10	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.016	0.000	0.001	7.346
Workers	LDA, LDT1 & LDT2	22	682	1364	62	15	On-Road	0.03	0.12	1.80	0.01	0.00	0.02	0.02	0.00	0.04	0.00	0.00	0.01	0.00	0.01	612.61	0.01	0.01	0.000	0.001	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.739	0.000	0.000	6.777
MONTH SUBTOTAL								**0.03**	**0.83**	**1.83**	**0.01**	**0.01**	**0.03**	**0.05**	**0.00**	**0.09**	**0.01**	**0.01**	**0.02**	**0.00**	**0.04**	**1250.46**	**0.01**	**0.11**	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**13.76**	**0.00**	**0.00**	**14.12**
Jul-24																																										
Trucks	HHDT & MHDT	22	44	88	4	20	On-Road	0.00	0.29	0.01	0.00	0.00	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.01	255.14	0.00	0.04	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.807	0.000	0.000	2.938
Workers	LDA, LDT1 & LDT2	22	572	1144	52	15	On-Road	0.02	0.10	1.51	0.01	0.00	0.01	0.02	0.00	0.03	0.00	0.00	0.01	0.00	0.01	513.81	0.01	0.01	0.000	0.001	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.652	0.000	0.000	5.684
MONTH SUBTOTAL								**0.03**	**0.38**	**1.52**	**0.01**	**0.01**	**0.02**	**0.03**	**0.00**	**0.06**	**0.01**	**0.00**	**0.01**	**0.00**	**0.02**	**768.95**	**0.01**	**0.05**	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**8.46**	**0.00**	**0.00**	**8.62**
Aug-24																																										
Trucks	HHDT & MHDT	22	22	44	2	20	On-Road	0.00	0.14	0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	127.57	0.00	0.02	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.403	0.000	0.000	1.469
Workers	LDA, LDT1 & LDT2	22	572	1144	52	15	On-Road	0.02	0.10	1.51	0.01	0.00	0.01	0.02	0.00	0.03	0.00	0.00	0.01	0.00	0.01	513.81	0.01	0.01	0.000	0.001	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.652	0.000	0.000	5.684
MONTH SUBTOTAL								**0.02**	**0.24**	**1.51**	**0.01**	**0.00**	**0.02**	**0.02**	**0.00**	**0.04**	**0.00**	**0.00**	**0.01**	**0.00**	**0.02**	**641.38**	**0.01**	**0.03**	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**7.06**	**0.00**	**0.00**	**7.15**
Sep-24																																										
Trucks	HHDT & MHDT	22	22	44	2	20	On-Road	0.00	0.14	0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	127.57	0.00	0.02	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.403	0.000	0.000	1.469
Workers	LDA, LDT1 & LDT2	22	748	1496	68	15	On-Road	0.03	0.13	1.97	0.01	0.00	0.02	0.02	0.00	0.04	0.00	0.00	0.01	0.00	0.02	671.90	0.01	0.01	0.000	0.001	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.391	0.000	0.000	7.433
MONTH SUBTOTAL								**0.03**	**0.27**	**1.98**	**0.01**	**0.01**	**0.02**	**0.03**	**0.00**	**0.05**	**0.01**	**0.01**	**0.01**	**0.00**	**0.02**	**799.47**	**0.01**	**0.03**	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**8.79**	**0.00**	**0.00**	**8.90**
Oct-24																																										
Trucks	HHDT & MHDT	22	44	88	4	20	On-Road	0.00	0.29	0.01	0.00	0.00	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.01	255.14	0.00	0.04	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.807	0.000	0.000	2.938
Workers	LDA, LDT1 & LDT2	22	726	1452	66	15	On-Road	0.03	0.13	1.91	0.01	0.00	0.02	0.02	0.00	0.04	0.00	0.00	0.01	0.00	0.01	652.14	0.01	0.01	0.000	0.001	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.174	0.000	0.000	7.215
MONTH SUBTOTAL								**0.03**	**0.41**	**1.93**	**0.01**	**0.01**	**0.02**	**0.03**	**0.00**	**0.06**	**0.01**	**0.01**	**0.01**	**0.00**	**0.02**	**907.28**	**0.01**	**0.05**	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**9.98**	**0.00**	**0.00**	**10.15**
Nov-24																																										
Trucks	HHDT & MHDT	22	132	264	12	20	On-Road	0.01	0.86	0.04	0.01	0.01	0.02	0.04	0.00	0.07	0.01	0.00	0.01	0.00	0.03	765.42	0.00	0.12	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	8.420	0.000	0.001	8.815
Workers	LDA, LDT1 & LDT2	22	594	1188	54	15	On-Road	0.02	0.10	1.57	0.01	0.00	0.01	0.02	0.00	0.03	0.00	0.00	0.01	0.00	0.01	533.57	0.01	0.01	0.000	0.001	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.869	0.000	0.000	5.903
MONTH SUBTOTAL								**0.03**	**0.96**	**1.61**	**0.01**	**0.01**	**0.03**	**0.05**	**0.00**	**0.10**	**0.01**	**0.01**	**0.02**	**0.00**	**0.04**	**1298.99**	**0.01**	**0.13**	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**14.29**	**0.00**	**0.00**	**14.72**
Dec-24																																										
Trucks	HHDT & MHDT	22	132	264	12	20	On-Road	0.01	0.86	0.04	0.01	0.01	0.02	0.04	0.00	0.07	0.01	0.00	0.01	0.00	0.03	765.42	0.00	0.12	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	8.420	0.000	0.001	8.815
Workers	LDA, LDT1 & LDT2	22	594	1188	54	15	On-Road	0.02	0.10	1.57	0.01	0.00	0.01	0.02	0.00	0.03	0.00	0.00	0.01	0.00	0.01	533.57	0.01	0.01	0.000	0.001	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.869	0.000	0.000	5.903
MONTH SUBTOTAL								**0.03**	**0.96**	**1.61**	**0.01**	**0.01**	**0.03**	**0.05**	**0.00**	**0.10**	**0.01**	**0.01**	**0.02**	**0.00**	**0.04**	**1298.99**	**0.01**	**0.13**	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**14.29**	**0.00**	**0.00**	**14.72**
MAXIMUM DAILY								**0.03**	**0.96**	**1.98**	**0.01**	**0.01**	**0.03**	**0.05**	**0.00**	**0.10**	**0.01**	**0.01**	**0.02**	**0.00**	**0.04**	**1298.99**	**0.01**	**0.13**																		
ANNUAL TOTAL - TONS																									**0.00**	**0.08**	**0.22**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**131.01**	**0.00**	**0.01**	**134.13**
ANNUAL TOTAL - METRIC TONS																																							**144.41**	**0.00**	**0.01**	**147.86**
Jan-25																																										
Trucks	HHDT & MHDT	22	66	132	6	20	On-Road	0.00	0.41	0.02	0.00	0.01	0.01	0.02	0.00	0.03	0.01	0.00	0.01	0.00	0.01	378.22	0.00	0.06	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.160	0.000	0.001	4.356
Workers	LDA, LDT1 & LDT2	22	440	880	40	15	On-Road	0.02	0.07	1.08	0.00	0.00	0.01	0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.01	386.05	0.00	0.01	0.000	0.001	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.247	0.000	0.000	4.270
MONTH SUBTOTAL								**0.02**	**0.48**	**1.10**	**0.01**	**0.01**	**0.02**	**0.03**	**0.00**	**0.06**	**0.01**	**0.00**	**0.01**	**0.00**	**0.02**	**764.27**	**0.00**	**0.07**	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**8.41**	**0.00**	**0.00**	**8.63**
Feb-25																																										
Trucks	HHDT & MHDT	22	66	132	6	20	On-Road	0.00	0.41	0.02	0.00	0.01	0.01	0.02	0.00	0.03	0.01	0.00	0.01	0.00	0.01	378.22	0.00	0.06	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.160	0.000	0.001	4.356
Workers	LDA, LDT1 & LDT2	22	462	924	42	15	On-Road	0.02	0.07	1.14	0.00	0.00	0.01	0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.01	405.36	0.00	0.01	0.000	0.001	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.459	0.000	0.000	4.483
MONTH SUBTOTAL								**0.02**	**0.48**	**1.16**	**0.01**	**0.01**	**0.02**	**0.03**	**0.00**	**0.06**	**0.01**	**0.00**	**0.01**	**0.00**	**0.02**	**783.58**	**0.00**	**0.07**	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**8.62**	**0.00**	**0.00**	**8.84**
Mar-25																																										
Trucks	HHDT & MHDT	22	88	176	8	20	On-Road	0.01	0.54	0.03	0.00	0.01	0.01	0.02	0.00	0.04	0.01	0.00	0.01	0.00	0.02	504.29	0.00	0.08	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.547	0.000	0.001	5.808
Workers	LDA, LDT1 & LDT2	22	462	924	42	15	On-Road	0.02	0.07	1.14	0.00	0.00	0.01	0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.01	405.36	0.00	0.01	0.000	0.001	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.459	0.000	0.000	4.483
MONTH SUBTOTAL								**0.02**	**0.62**	**1.16**	**0.01**	**0.01**	**0.02**	**0.04**	**0.00**	**0.07**	**0.01**	**0.01**	**0.01**	**0.00**	**0.03**	**909.65**	**0.00**	**0.09**	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**10.01**	**0.00**	**0.00**	**10.29**
Apr-25																																										
Trucks	HHDT & MHDT	22	88	176	8	20	On-Road	0.01	0.54	0.03	0.00	0.01	0.01	0.02	0.00	0.04	0.01	0.00	0.01	0.00	0.02	504.29	0.00	0.08	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.547	0.000	0.001	5.808
Workers	LDA, LDT1 & LDT2	22	528	1056	48	15	On-Road	0.02	0.08	1.30	0.00	0.00	0.01	0.01	0.00	0.03	0.00	0.00	0.01	0.00	0.01	463.26	0.00	0.01	0.000	0.001	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.096	0.000	0.000	5.124
MONTH SUBTOTAL								**0.02**	**0.63**	**1.33**	**0.01**	**0.01**	**0.02**	**0.04**	**0.00**	**0.07**	**0.01**	**0.01**	**0.01**	**0.00**	**0.03**	**967.56**	**0.01**	**0.09**	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**10.64**	**0.00**	**0.00**	**10.93**
May-25																																										
Trucks	HHDT & MHDT	22	66	132	6	20	On-Road	0.00	0.41	0.02	0.00	0.01	0.01	0.02	0.00	0.03	0.01	0.00	0.01	0.00	0.01	378.22	0.00	0.06	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.160	0.000	0.001	4.356
Workers	LDA, LDT1 & LDT2	22	550	1100	50	15	On-Road	0.02	0.09	1.35	0.00	0.00	0.01	0.01	0.00	0.03	0.00	0.00	0.01	0.00	0.01	482.57	0.00	0.01	0.000	0.001	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.308	0.000	0.000	5.337
MONTH SUBTOTAL								**0.02**	**0.49**	**1.37**	**0.01**	**0.01**	**0.02**	**0.03**	**0.00**	**0.06**	**0.01**	**0.01**	**0.01**	**0.00**	**0.02**	**860.79**	**0.01**	**0.07**	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**9.47**	**0.00**	**0.00**	**9.69**
Jun-25																																										
Trucks	HHDT & MHDT	22	44	88	4	20	On-Road	0.00	0.27	0.01	0.00	0.00	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.01	252.15	0.00	0.04	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.774	0.000	0.000	2.904
Workers	LDA, LDT1 & LDT2	22	440	880	40	15	On-Road	0.02	0.07	1.08	0.00	0.00	0.01	0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.01	386.05	0.00	0.01	0.000	0.001	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.247	0.000	0.000	4.270
MONTH SUBTOTAL								**0.02**	**0.34**	**1.10**	**0.01**	**0.01**	**0.02**	**0.02**	**0.00**	**0.05**	**0.01**	**0.00**	**0.01**	**0.00**	**0.02**	**638.20**	**0.00**	**0.05**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**7.02**	**0.00**	**0.00**	**7.17**

LADWP North Hollywood Chlorination Stations Project
On-Road Off-Site Vehicle Emissions

Trip Type	Vehicle Class	Work Days per Month	Trucks			Miles per Trip	Category	Daily Emissions (lb/day)																
			Round Trips per Month	One-Way Trips per Month	One-Way Trips per Day			ROG	NOx	CO	SOx	PM10 Exhaust	PM10 PMTW	PM10 PMBW	PM10 Paved Road	TOTAL PM10	PM2.5 Exhaust	PM2.5 PMTW	PM2.5 PMBW	PM2.5 Paved Road	TOTAL PM2.5	CO2	CH4	N2O
Jul-25																								
Trucks	HHDT & MHDT	22	44	88	4	20	On-Road	0.00	0.27	0.01	0.00	0.00	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.01	252.15	0.00	0.04
Workers	LDA, LDT1 & LDT2	22	352	704	32	15	On-Road	0.01	0.06	0.87	0.00	0.00	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.01	308.84	0.00	0.01
MONTH SUBTOTAL								**0.02**	**0.33**	**0.88**	**0.01**	**0.01**	**0.01**	**0.02**	**0.00**	**0.04**	**0.00**	**0.00**	**0.01**	**0.00**	**0.02**	**560.99**	**0.00**	**0.05**
Aug-25																								
Trucks	HHDT & MHDT	22	22	44	2	20	On-Road	0.00	0.14	0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	126.07	0.00	0.02
Workers	LDA, LDT1 & LDT2	22	286	572	26	15	On-Road	0.01	0.04	0.70	0.00	0.00	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.01	250.93	0.00	0.00
MONTH SUBTOTAL								**0.01**	**0.18**	**0.71**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**377.01**	**0.00**	**0.02**
Sep-25																								
Trucks	HHDT & MHDT	22	0	0	0	20	On-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Workers	LDA, LDT1 & LDT2	22	88	176	8	15	On-Road	0.00	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	77.21	0.00	0.00
MONTH SUBTOTAL								**0.00**	**0.01**	**0.22**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**77.21**	**0.00**	**0.00**
Oct-25																								
Trucks	HHDT & MHDT	22	0	0	0	20	On-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Workers	LDA, LDT1 & LDT2	22	88	176	8	15	On-Road	0.00	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	77.21	0.00	0.00
MONTH SUBTOTAL								**0.00**	**0.01**	**0.22**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**77.21**	**0.00**	**0.00**
Nov-25																								
Trucks	HHDT & MHDT	22	0	0	0	20	On-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Workers	LDA, LDT1 & LDT2	22	88	176	8	15	On-Road	0.00	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	77.21	0.00	0.00
MONTH SUBTOTAL								**0.00**	**0.01**	**0.22**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**77.21**	**0.00**	**0.00**
Dec-25																								
Trucks	HHDT & MHDT	22	0	0	0	20	On-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Workers	LDA, LDT1 & LDT2	22	88	176	8	15	On-Road	0.00	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	77.21	0.00	0.00
MONTH SUBTOTAL								**0.00**	**0.01**	**0.22**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**77.21**	**0.00**	**0.00**
MAXIMUM DAILY								**0.02**	**0.63**	**1.37**	**0.01**	**0.01**	**0.02**	**0.04**	**0.00**	**0.07**	**0.01**	**0.01**	**0.01**	**0.00**	**0.03**	**967.56**	**0.01**	**0.09**
ANNUAL TOTAL - TONS																								
ANNUAL TOTAL - METRIC TONS																								
Jan-26																								
Trucks	HHDT & MHDT	22	0	0	0	20	On-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Workers	LDA, LDT1 & LDT2	22	44	88	4	15	On-Road	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.09	0.00	0.00
MONTH SUBTOTAL								**0.00**	**0.01**	**0.10**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**37.09**	**0.00**	**0.00**
Feb-26																								
Trucks	HHDT & MHDT	22	0	0	0	20	On-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Workers	LDA, LDT1 & LDT2	22	44	88	4	15	On-Road	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.09	0.00	0.00
MONTH SUBTOTAL								**0.00**	**0.01**	**0.10**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**37.09**	**0.00**	**0.00**
Mar-26																								
Trucks	HHDT & MHDT	22	0	0	0	20	On-Road	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Workers	LDA, LDT1 & LDT2	22	44	88	4	15	On-Road	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.09	0.00	0.00
MONTH SUBTOTAL								**0.00**	**0.01**	**0.10**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**37.09**	**0.00**	**0.00**
MAXIMUM DAILY								**0.00**	**0.01**	**0.10**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**37.09**	**0.00**	**0.00**
ANNUAL TOTAL - TONS																								
ANNUAL TOTAL - METRIC TONS																								

Trip Type	Monthly Emissions (tons/month)																	
	ROG	NOx	CO	SOx	PM10	PM10 PMTW	PM10 PMBW	PM10 Paved Road	TOTAL PM10	PM2.5 Exhaust	PM2.5 PMTW	PM2.5 PMBW	PM2.5 Paved Road	TOTAL PM2.5	CO2	CH4	N2O	CO2E
Jul-25																		
Trucks	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.774	0.000	0.000	2.904
Workers	0.000	0.001	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.397	0.000	0.000	3.416
MONTH SUBTOTAL	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**6.17**	**0.00**	**0.00**	**6.32**
Aug-25																		
Trucks	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.387	0.000	0.000	1.452
Workers	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.760	0.000	0.000	2.775
MONTH SUBTOTAL	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**4.15**	**0.00**	**0.00**	**4.23**
Sep-25																		
Trucks	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Workers	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.849	0.000	0.000	0.854
MONTH SUBTOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.85**	**0.00**	**0.00**	**0.85**
Oct-25																		
Trucks	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Workers	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.849	0.000	0.000	0.854
MONTH SUBTOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.85**	**0.00**	**0.00**	**0.85**
Nov-25																		
Trucks	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Workers	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.849	0.000	0.000	0.854
MONTH SUBTOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.85**	**0.00**	**0.00**	**0.85**
Dec-25																		
Trucks	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Workers	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.849	0.000	0.000	0.854
MONTH SUBTOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.85**	**0.00**	**0.00**	**0.85**
MAXIMUM DAILY																		
ANNUAL TOTAL - TONS	**0.00**	**0.04**	**0.11**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**67.88**	**0.00**	**0.01**	**69.52**
ANNUAL TOTAL - METRIC TONS															**74.83**	**0.00**	**0.01**	**76.63**
Jan-26																		
Trucks	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Workers	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.408	0.000	0.000	0.410
MONTH SUBTOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.41**	**0.00**	**0.00**	**0.41**
Feb-26																		
Trucks	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Workers	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.408	0.000	0.000	0.410
MONTH SUBTOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.41**	**0.00**	**0.00**	**0.41**
Mar-26																		
Trucks	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Workers	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.408	0.000	0.000	0.410
MONTH SUBTOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.41**	**0.00**	**0.00**	**0.41**
MAXIMUM DAILY																		
ANNUAL TOTAL - TONS	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.22**	**0.00**	**0.00**	**1.23**
ANNUAL TOTAL - METRIC TONS															**1.35**	**0.00**	**0.00**	**1.36**

LADWP North Hollywood Chlorination Stations Project
Fugitive Dust

Disturbed Area Fugitive Dust

Equations:

E_{PM10} = (0.051 x (S)^2.0 x F_{PM10}) x (As/Wb x 43,560/5,280)

$E_{PM2.5}$ = (0.051 x (S)^2.5 x $F_{PM2.5}$) x (As/Wb x 43,560/5,280)

Where:

E_{PM10} = PM_{10} emissions from ground disturbance (pounds of PM_{10})

$E_{PM2.5}$ = $PM_{2.5}$ emissions from ground disturbance (pounds of $PM_{2.5}$)

S = mean vehicle speed (mph); AP-42 default value is 7.1 mph

F_{PM10} = PM_{10} scaling factor; AP-42 default value is 0.6

$F_{PM2.5}$ = $PM_{2.5}$ scaling factor; AP-42 default value is 0.031

As = acreage of the grading site

Wb = blade width of grading equipment; CalEEMod default is 12 feet

Emissions Calculations:

Facility	**Area (Acres)**
All facilities	0.36

Daily PM10 Emissions (lbs/day)*	0.24
Daily PM2.5 Emissions (lbs/day)*	0.03
Annual (2023) PM10 Emissions (tpy)*	0.01
Annual (2023) PM2.5 Emissions (tpy)*	0.00

*Includes watering 2x per day, SCAQMD Rule 403

Grading, Excavation, Compaction			66	1-Sep-23	1-Dec-23		
Equipment	Qty		Acres/8-hr day	Total Acres	Ft2	Total VMT	VMT/day
Excavator		1	0.5	33	1,437,480	22.69	0.34375

Material Handling Fugitive Dust

Equations:

E = k*(0.0032)*(((U/5)^1.3)/((M/2)^1.4))*TP

Where:

E = Particulate emissions (in pounds) from truck loading/unloading

k = particle size multiplier; AP-42 default value is 0.35 for PM10 and 0.053 for PM2.5

U = mean wind speed (mph); default for LA County is 2.2 meter/sec = 4.9 mph

M = material moisture content; CalEEMod uses 12% (moisture content of cover) as default

TP = material throughput (tons)

Emissions Calculations:

Grading, Excavation, Compaction

	1-Sep-23	1-Dec-23	
Duration (days)	Total LCY	Total tonnage	
66	5,622	7,107.14	
Daily PM10 Emissions (lbs/day)	0.01		
Daily PM2.5 Emissions (lbs/day)	0.00		
Annual (2023) PM10 Emissions (tpy)	0.00		
Annual (2023) PM2.5 Emissions (tpy)	0.00		

Disturbed Area + Material Handling Summary	
PM10 (lb/day)	0.25
PM2.5 (lb/day)	0.03

LADWP North Hollywood Chlorination Stations Project
Operational Emissions Summary

	Daily Emissions (lb/day)									Annual Emissions (tons/year)									
	VOC	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	ROG	NOx	CO	SOx	PM10	PM2.5	CO2	CH4	N2O	CO2e
2026																			
SUMMARY - VEHICLES	0.02	2.26	0.37	0.02	0.19	0.08	2242.11	0.00	0.34	0.00	0.01	0.00	0.00	0.00	0.00	11.59	0.00	0.00	12.12
SUMMARY - METRIC TONS - VEHICLES																12.77	0.00	0.00	13.36
SUMMARY - METRIC TONS - ELECTRICITY																4,879.05	0.35	0.05	4,902.22
TOTAL - METRIC TONS - VEHICLES + ELECTRICITY																4,891.82	0.35	0.05	4,915.58

LADWP North Hollywood Chlorination Stations Project

Operations -- On-Road Off-Site Vehicle Emissions

** Assumes all activities overlap in 2026 as worse-case scenario **

Trip Type	Vehicle Class	Activity Days per Month	Trucks: Round Trips per Month	Trucks: One-Way Trips per Month	Trucks: Worse-Case Day - One-Way Trips	Trucks: Worse-Case Year - One-Way Trips	Miles per Trip	Category
NHC OSGH Salt (Monthly)								
Trucks	HHDT & MHDT	2	2	4	2	48	20	On-Road
ACTIVITY SUBTOTAL								
NHOU2IR Sulfuric Acid Refilling (46 days)								
Trucks	HHDT & MHDT	1	4	8	4	96	20	On-Road
ACTIVITY SUBTOTAL								
NHOU2IR Hydrogen Peroxide Refilling (Monthly)								
Trucks	HHDT & MHDT	3	6	12	6	144	20	On-Road
ACTIVITY SUBTOTAL								
NHOU2IR UV Reactor Lamp Replacement (Every 20-Months)								
Trucks	HHDT & MHDT	7	7	14	2	14	20	On-Road
Workers	LDA, LDT1 & LDT2	7	14	28	4	28	15	On-Road
ACTIVITY SUBTOTAL								
NHOU2IR Carbon Replacement (Once per Year)								
Trucks	HHDT & MHDT	30	16	32	8	48	20	On-Road
Workers	LDA, LDT1 & LDT2	30	12	24	6	36	15	On-Road
ACTIVITY SUBTOTAL								
NHOU2IR WBA Resin Transport (Once per Year)								
Trucks	HHDT & MHDT	0-1	0	0	2	2	125	On-Road
ACTIVITY SUBTOTAL								
ANNUAL SUMMARY - MAXIMUM DAILY								
ANNUAL TOTAL - TONS								
ANNUAL TOTAL - METRIC TONS								

Daily Emissions (lb/day)

Trip Type	VOC	NOx	CO	SOx	PM10 Exhaust	PM10 PMTW	PM10 PMBW	PM10 Paved Road	TOTAL PM10	PM2.5 Exhaust	PM2.5 PMTW	PM2.5 PMBW	PM2.5 Paved Road	TOTAL PM2.5	CO2	CH4	N2O
NHC OSGH Salt (Monthly)																	
Trucks	0.00	0.13	0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	124.60	0.00	0.02
ACTIVITY SUBTOTAL	**0.00**	**0.13**	**0.01**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**124.60**	**0.00**	**0.02**
NHOU2IR Sulfuric Acid Refilling (46 days)																	
Trucks	0.00	0.26	0.01	0.00	0.00	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.01	249.20	0.00	0.04
ACTIVITY SUBTOTAL	**0.00**	**0.26**	**0.01**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**249.20**	**0.00**	**0.04**
NHOU2IR Hydrogen Peroxide Refilling (Monthly)																	
Trucks	0.00	0.39	0.02	0.00	0.01	0.01	0.02	0.00	0.03	0.01	0.00	0.01	0.00	0.01	373.80	0.00	0.06
ACTIVITY SUBTOTAL	**0.00**	**0.39**	**0.02**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.03**	**0.01**	**0.00**	**0.01**	**0.00**	**0.01**	**373.80**	**0.00**	**0.06**
NHOU2IR UV Reactor Lamp Replacement (Every 20-Months)																	
Trucks	0.00	0.13	0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	124.60	0.00	0.02
Workers	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.09	0.00	0.00
ACTIVITY SUBTOTAL	**0.00**	**0.14**	**0.11**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**161.69**	**0.00**	**0.02**
NHOU2IR Carbon Replacement (Once per Year)																	
Trucks	0.00	0.52	0.03	0.00	0.01	0.01	0.03	0.00	0.04	0.01	0.00	0.01	0.00	0.02	498.41	0.00	0.08
Workers	0.00	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.64	0.00	0.00
ACTIVITY SUBTOTAL	**0.01**	**0.53**	**0.18**	**0.01**	**0.01**	**0.01**	**0.03**	**0.00**	**0.05**	**0.01**	**0.00**	**0.01**	**0.00**	**0.02**	**554.04**	**0.00**	**0.08**
NHOU2IR WBA Resin Transport (Once per Year)																	
Trucks	0.01	0.81	0.04	0.01	0.01	0.02	0.04	0.00	0.07	0.01	0.00	0.01	0.00	0.03	778.76	0.00	0.12
ACTIVITY SUBTOTAL	**0.01**	**0.81**	**0.04**	**0.01**	**0.01**	**0.02**	**0.04**	**0.00**	**0.07**	**0.01**	**0.00**	**0.01**	**0.00**	**0.03**	**778.76**	**0.00**	**0.12**
ANNUAL SUMMARY - MAXIMUM DAILY	**0.02**	**2.26**	**0.37**	**0.02**	**0.03**	**0.05**	**0.11**	**0.01**	**0.19**	**0.03**	**0.01**	**0.04**	**0.00**	**0.08**	**2242.11**	**0.00**	**0.34**

Annual Emissions (tons/year)

Trip Type	VOC	NOx	CO	SOx	PM10	PM10 PMTW	PM10 PMBW	PM10 Paved Road	TOTAL PM10	PM2.5 Exhaust	PM2.5 PMTW	PM2.5 PMBW	PM2.5 Paved Road	TOTAL PM2.5	CO2	CH4	N2O	CO2e
NHC OSGH Salt (Monthly)																		
Trucks	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.495	0.000	0.000	1.565
ACTIVITY SUBTOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.50**	**0.00**	**0.00**	**1.57**
NHOU2IR Sulfuric Acid Refilling (46 days)																		
Trucks	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.990	0.000	0.000	3.131
ACTIVITY SUBTOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.99**	**0.00**	**0.00**	**3.13**
NHOU2IR Hydrogen Peroxide Refilling (Monthly)																		
Trucks	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.486	0.000	0.001	4.696
ACTIVITY SUBTOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**4.49**	**0.00**	**0.00**	**4.70**
NHOU2IR UV Reactor Lamp Replacement (Every 20-Months)																		
Trucks	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.436	0.000	0.000	0.457
Workers	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.130	0.000	0.000	0.131
ACTIVITY SUBTOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.57**	**0.00**	**0.00**	**0.59**
NHOU2IR Carbon Replacement (Once per Year)																		
Trucks	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.495	0.000	0.000	1.565
Workers	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.167	0.000	0.000	0.168
ACTIVITY SUBTOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.66**	**0.00**	**0.00**	**1.73**
NHOU2IR WBA Resin Transport (Once per Year)																		
Trucks	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.389	0.000	0.000	0.408
ACTIVITY SUBTOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.39**	**0.00**	**0.00**	**0.41**
ANNUAL TOTAL - TONS	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**11.59**	**0.00**	**0.00**	**12.12**
ANNUAL TOTAL - METRIC TONS															**12.77**	**0.00**	**0.00**	**13.36**

LADWP North Hollywood Chlorination Stations Project
Indirect GHG Emissions from Electricity Use (Power Plant Emissions)

Operations Annual Electrical Use:	15,580,025	kWh (kilowatt hours)/year
	15,580	mWh (megawatt hours)/year

		Annual		CO2	Annual
	Emission Factor*	Project	GHGs	Equivalent	CO2 Equivalent
Indirect GHG gases	lb/mWh	Electricity mWh	metric tons	Factor	Emissions (metric tons)
Carbon Dioxide (CO2)	690.40	15,580	4,879.05	1	4,879.05
Nitrous Oxide (N2O)	0.0069	15,580	0.0488	298	14.53
Methane (CH4)	0.0489	15,580	0.3456	25	8.64
		Total Indirect GHG Emissions from Operations Electricity Use=			**4,902.22**

* Emission factor for CO2 based on LADWP Carbon Intensity estimates from CalEEMod

APPENDIX B

Biological Resources Database Results

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Van Nuys (3411824) OR Burbank (3411823) OR Topanga (3411815) OR Oat Mountain (3411835) OR Canoga Park (3411825) OR Beverly Hills (3411814) OR Sunland (3411833) OR San Fernando (3411834) OR Hollywood (3411813))

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks A	B	C	D	X	U	Population Status Historic > 20 yr	Recent <= 20 yr	Presence Extant	Poss. Extirp.	Extirp.
Agelaius tricolor tricolored blackbird	G1G2 S1S2	None Threatened	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_EN-Endangered NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	895 895	955 S:1	0	0	0	0	0	1	1	0	1	0	0
Aglaothorax longipennis Santa Monica shieldback katydid	G1G2 S1S2	None None	IUCN_CR-Critically Endangered	150 150	1 S:1	0	0	0	0	0	1	1	0	1	0	0
Aimophila ruficeps canescens southern California rufous-crowned sparrow	G5T3 S3	None None	CDFW_WL-Watch List	693 693	235 S:1	0	1	0	0	0	0	0	1	1	0	0
Anaxyrus californicus arroyo toad	G2G3 S2S3	Endangered None	CDFW_SSC-Species of Special Concern IUCN_EN-Endangered	825 825	139 S:1	0	0	0	0	1	0	1	0	0	1	0
Anniella spp. California legless lizard	G3G4 S3S4	None None	CDFW_SSC-Species of Special Concern	550 2,278	128 S:24	1	7	6	8	0	2	11	13	24	0	0
Anniella stebbinsi Southern California legless lizard	G3 S3	None None	CDFW_SSC-Species of Special Concern USFS_S-Sensitive	34 1,956	426 S:11	0	1	1	5	0	4	7	4	11	0	0
Antrozous pallidus pallid bat	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	600 770	420 S:4	0	0	0	0	0	4	4	0	4	0	0
Arenaria paludicola marsh sandwort	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_SBBG-Santa Barbara Botanic Garden	100 100	19 S:1	0	0	0	0	1	0	1	0	0	0	1
Arizona elegans occidentalis California glossy snake	G5T2 S2	None None	CDFW_SSC-Species of Special Concern	1,800 2,546	260 S:2	0	0	0	0	0	2	2	0	2	0	0

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks A	B	C	D	X	U	Population Status Historic > 20 yr	Recent <= 20 yr	Presence Extant	Poss. Extirp.	Extirp.
Aspidoscelis tigris stejnegeri coastal whiptail	G5T5 S3	None None	CDFW_SSC-Species of Special Concern	1,200 1,790	148 S:6	0	5	0	0	0	1	2	4	6	0	0
Astragalus brauntonii Braunton's milk-vetch	G2 S2	Endangered None	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic Garden	400 2,050	57 S:12	0	2	0	1	3	6	5	7	9	3	0
Astragalus pycnostachyus var. lanosissimus Ventura Marsh milk-vetch	G2T1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic Garden	5 5	7 S:2	0	0	0	0	2	0	2	0	0	0	2
Astragalus tener var. titi coastal dunes milk-vetch	G2T1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden		6 S:1	0	0	0	0	1	0	1	0	0	1	0
Athene cunicularia burrowing owl	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	280 280	2011 S:1	0	0	0	0	0	1	1	0	1	0	0
Atriplex coulteri Coulter's saltbush	G3 S1S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_CRES-San Diego Zoo CRES Native Gene Seed Bank		121 S:1	0	0	0	0	1	0	1	0	0	0	1
Atriplex pacifica south coast saltscale	G4 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden		109 S:1	0	0	0	0	1	0	1	0	0	1	0

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks A	B	C	D	X	U	Population Status Historic > 20 yr	Recent <= 20 yr	Presence Extant	Poss. Extirp.	Extirp.
Atriplex parishii Parish's brittlescale	G1G2 S1	None None	Rare Plant Rank - 1B.1 SB_CRES-San Diego Zoo CRES Native Gene Seed Bank USFS_S-Sensitive	100 525	15 S:2	0	0	0	0	0	2	2	0	2	0	0
Atriplex serenana var. davidsonii Davidson's saltscale	G5T1 S1	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden		26 S:2	0	0	0	0	2	0	2	0	0	2	0
Berberis nevinii Nevin's barberry	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic Garden	625 1,552	32 S:6	0	0	3	0	1	2	2	4	5	0	1
Bombus crotchii Crotch bumble bee	G3G4 S1S2	None None		100 2,647	437 S:17	0	0	0	0	0	17	9	8	17	0	0
Buteo swainsoni Swainson's hawk	G5 S3	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	25 1,300	2541 S:6	0	0	0	0	6	0	6	0	0	6	0
California Walnut Woodland California Walnut Woodland	G2 S2.1	None None		520 3,400	76 S:25	0	7	0	1	6	11	25	0	19	1	5
Calochortus clavatus var. gracilis slender mariposa-lily	G4T2T3 S2S3	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden USFS_S-Sensitive	935 2,645	143 S:19	0	1	0	0	3	15	0	19	16	0	3
Calochortus plummerae Plummer's mariposa-lily	G4 S4	None None	Rare Plant Rank - 4.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	500 3,100	230 S:18	0	4	2	1	1	10	7	11	17	1	0
Calystegia felix lucky morning-glory	G1Q S1	None None	Rare Plant Rank - 1B.1	100 100	10 S:2	0	0	0	0	0	2	2	0	2	0	0

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks A	B	C	D	X	U	Population Status Historic > 20 yr	Recent <= 20 yr	Presence Extant	Poss. Extirp.	Extirp.
Catostomus santaanae Santa Ana sucker	G1 S1	Threatened None	AFS_TH-Threatened IUCN_VU-Vulnerable	1,200 1,200	28 S:2	0	0	0	1	0	1	1	1	2	0	0
Centromadia parryi ssp. australis southern tarplant	G3T2 S2	None None	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_CRES-San Diego Zoo CRES Native Gene Seed Bank SB_SBBG-Santa Barbara Botanic Garden	3,200 3,200	94 S:3	0	0	0	0	0	3	3	0	3	0	0
Chloropyron maritimum ssp. maritimum salt marsh bird's-beak	G4?T1 S1	Endangered Endangered	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_CRES-San Diego Zoo CRES Native Gene Seed Bank SB_SBBG-Santa Barbara Botanic Garden	10 10	26 S:2	0	0	0	0	2	0	2	0	0	1	1
Chorizanthe parryi var. fernandina San Fernando Valley spineflower	G2T1 S1	None Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden USFS_S-Sensitive	300 1,100	21 S:5	0	0	0	0	5	0	5	0	0	5	0
Cicindela hirticollis gravida sandy beach tiger beetle	G5T2 S2	None None		10 10	34 S:1	0	0	0	0	1	0	1	0	0	0	1
Coccyzus americanus occidentalis western yellow-billed cuckoo	G5T2T3 S1	Threatened Endangered	BLM_S-Sensitive NABCI_RWL-Red Watch List USFS_S-Sensitive USFWS_BCC-Birds of Conservation Concern	1,100 1,100	165 S:1	0	0	0	0	1	0	1	0	0	0	1
Coelus globosus globose dune beetle	G1G2 S1S2	None None	IUCN_VU-Vulnerable	5 10	50 S:2	0	0	0	0	1	1	2	0	1	1	0

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks A	B	C	D	X	U	Population Status Historic > 20 yr	Recent <= 20 yr	Presence Extant	Poss. Extirp.	Extirp.
Corynorhinus townsendii Townsend's big-eared bat	G4 S2	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	1,510 1,510	635 S:1	0	0	0	0	0	1	1	0	1	0	0
Coturnicops noveboracensis yellow rail	G4 S1S2	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern NABCI_RWL-Red Watch List USFS_S-Sensitive USFWS_BCC-Birds of Conservation Concern	307 307	45 S:1	0	0	0	0	0	1	1	0	1	0	0
Danaus plexippus pop. 1 monarch - California overwintering population	G4T2T3 S2S3	Candidate None	USFS_S-Sensitive	30 1,350	383 S:10	0	1	0	0	5	4	8	2	5	3	2
Deinandra minthornii Santa Susana tarplant	G2 S2	None Rare	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	1,122 2,035	35 S:8	1	3	1	0	0	3	2	6	8	0	0
Diadophis punctatus modestus San Bernardino ringneck snake	G5T2T3 S2?	None None	USFS_S-Sensitive	876 876	14 S:1	0	0	1	0	0	0	0	1	1	0	0
Dithyrea maritima beach spectaclepod	G1 S1	None Threatened	Rare Plant Rank - 1B.1 SB_SBBG-Santa Barbara Botanic Garden	20 20	28 S:1	0	0	0	0	0	1	1	0	1	0	0
Dodecahema leptoceras slender-horned spineflower	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	1,260 1,800	42 S:5	0	1	0	0	4	0	4	1	1	2	2
Dudleya blochmaniae ssp. blochmaniae Blochman's dudleya	G3T2 S2	None None	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden		81 S:1	0	0	0	0	0	1	1	0	1	0	0

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks A	B	C	D	X	U	Population Status Historic > 20 yr	Recent <= 20 yr	Presence Extant	Poss. Extirp.	Extirp.
Dudleya cymosa ssp. ovatifolia Santa Monica dudleya	G5T1 S1	Threatened None	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	600 600	3 S:1	0	0	0	0	0	1	0	1	1	0	0
Dudleya multicaulis many-stemmed dudleya	G2 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden USFS_S-Sensitive		154 S:1	0	0	0	0	1	0	1	0	0	1	0
Empidonax traillii extimus southwestern willow flycatcher	G5T2 S1	Endangered Endangered	NABCI_RWL-Red Watch List	280 280	70 S:1	0	0	0	0	0	1	1	0	1	0	0
Emys marmorata western pond turtle	G3G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	550 3,300	1398 S:7	0	0	3	0	1	3	4	3	6	1	0
Eugnosta busckana Busck's gallmoth	G1G3 SH	None None		225 225	4 S:1	0	0	0	0	1	0	1	0	0	0	1
Eumops perotis californicus western mastiff bat	G4G5T4 S3S4	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern WBWG_H-High Priority	90 1,200	296 S:9	0	0	0	0	0	9	8	1	9	0	0
Gila orcuttii arroyo chub	G2 S2	None None	AFS_VU-Vulnerable CDFW_SSC-Species of Special Concern USFS_S-Sensitive	1,576 1,576	49 S:1	0	1	0	0	0	0	0	1	1	0	0
Glyptostoma gabrielense San Gabriel chestnut	G2 S2	None None			24 S:1	0	0	0	0	1	0	1	0	0	1	0
Gonidea angulata western ridged mussel	G3 S1S2	None None		100 283	157 S:2	0	0	0	0	2	0	2	0	0	0	2
Harpagonella palmeri Palmer's grapplinghook	G4 S3	None None	Rare Plant Rank - 4.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_CRES-San Diego Zoo CRES Native Gene Seed Bank	1,300 1,300	57 S:1	0	0	0	0	0	1	1	0	1	0	0

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks A	B	C	D	X	U	Population Status Historic > 20 yr	Recent <= 20 yr	Presence Extant	Poss. Extirp.	Extirp.
Helianthus nuttallii ssp. parishii Los Angeles sunflower	G5TX SX	None None	Rare Plant Rank - 1A	120 120	7 S:1	0	0	0	0	1	0	1	0	0	0	1
Helminthoglypta traskii pacoimensis Pacoima shoulderband	G1G2T1 S1	None None		2,188 2,188	2 S:1	0	0	0	0	0	1	1	0	1	0	0
Horkelia cuneata var. puberula mesa horkelia	G4T1 S1	None None	Rare Plant Rank - 1B.1 USFS_S-Sensitive		103 S:6	0	0	0	0	5	1	6	0	1	3	2
Lasionycteris noctivagans silver-haired bat	G3G4 S3S4	None None	IUCN_LC-Least Concern WBWG_M-Medium Priority		139 S:2	0	0	0	0	0	2	2	0	2	0	0
Lasiurus cinereus hoary bat	G3G4 S4	None None	IUCN_LC-Least Concern WBWG_M-Medium Priority	450 490	238 S:9	0	0	0	0	0	9	9	0	9	0	0
Lasiurus xanthinus western yellow bat	G4G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern WBWG_H-High Priority	525 525	58 S:1	0	0	0	0	0	1	1	0	1	0	0
Lasthenia glabrata ssp. coulteri Coulter's goldfields	G4T2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic Garden		111 S:2	0	0	0	0	0	2	2	0	2	0	0
Lepidium virginicum var. robinsonii Robinson's pepper-grass	G5T3 S3	None None	Rare Plant Rank - 4.3	1,738 1,738	142 S:2	0	0	0	0	0	2	1	1	2	0	0
Lepus californicus bennettii San Diego black-tailed jackrabbit	G5T3T4 S3S4	None None	CDFW_SSC-Species of Special Concern	1,160 1,160	103 S:1	1	0	0	0	0	0	1	0	1	0	0
Lupinus paynei Payne's bush lupine	G1Q S1	None None	Rare Plant Rank - 1B.1	1,300 1,300	7 S:1	0	0	0	0	0	1	0	1	1	0	0

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks A	B	C	D	X	U	Population Status Historic > 20 yr	Recent <= 20 yr	Presence Extant	Poss. Extirp.	Extirp.
Macrotus californicus California leaf-nosed bat	G3G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern WBWG_H-High Priority	1,280 1,280	46 S:1	0	0	0	0	1	0	1	0	0	0	1
Malacothamnus davidsonii Davidson's bush-mallow	G2 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	600 4,500	83 S:49	6	8	11	1	1	22	8	41	48	0	1
Microtus californicus stephensi south coast marsh vole	G5T2T3 S1S2	None None	CDFW_SSC-Species of Special Concern	200 200	7 S:1	0	0	0	0	0	1	1	0	1	0	0
Monardella hypoleuca ssp. hypoleuca white-veined monardella	G4T3 S3	None None	Rare Plant Rank - 1B.3	700 700	29 S:2	0	0	0	0	0	2	1	1	2	0	0
Nama stenocarpa mud nama	G4G5 S1S2	None None	Rare Plant Rank - 2B.2	400 400	22 S:1	0	0	0	0	1	0	1	0	0	1	0
Nasturtium gambelii Gambel's water cress	G1 S1	Endangered Threatened	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic Garden		13 S:1	0	0	0	0	1	0	1	0	0	0	1
Navarretia prostrata prostrate vernal pool navarretia	G2 S2	None None	Rare Plant Rank - 1B.2		61 S:1	0	0	0	0	1	0	1	0	0	1	0
Neotoma lepida intermedia San Diego desert woodrat	G5T3T4 S3S4	None None	CDFW_SSC-Species of Special Concern	800 1,800	132 S:4	0	1	3	0	0	0	2	2	4	0	0
Nyctinomops macrotis big free-tailed bat	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern WBWG_MH-Medium-High Priority	300 600	32 S:2	0	0	0	0	0	2	2	0	2	0	0
Oncorhynchus mykiss irideus pop. 10 steelhead - southern California DPS	G5T1Q S1	Endangered None	AFS_EN-Endangered	500 500	20 S:1	0	0	0	0	0	1	1	0	1	0	0

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks A	B	C	D	X	U	Population Status Historic > 20 yr	Recent <= 20 yr	Presence Extant	Poss. Extirp.	Extirp.
Onychomys torridus ramona southern grasshopper mouse	G5T3 S3	None None	CDFW_SSC-Species of Special Concern	1,300 1,300	28 S:1	0	0	0	0	0	1	1	0	1	0	0
Orcuttia californica California Orcutt grass	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_CRES-San Diego Zoo CRES Native Gene Seed Bank		39 S:1	0	0	0	0	0	1	1	0	1	0	0
Perognathus longimembris brevinasus Los Angeles pocket mouse	G5T2 S1S2	None None	CDFW_SSC-Species of Special Concern	650 650	70 S:1	0	0	0	0	0	1	1	0	1	0	0
Phrynosoma blainvillii coast horned lizard	G3G4 S3S4	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	180 3,400	784 S:17	1	3	1	1	2	9	15	2	15	1	1
Polioptila californica californica coastal California gnatcatcher	G4G5T3Q S2	Threatened None	CDFW_SSC-Species of Special Concern NABCI_YWL-Yellow Watch List	200 1,404	1087 S:13	0	3	2	0	3	5	6	7	10	3	0
Pseudognaphalium leucocephalum white rabbit-tobacco	G4 S2	None None	Rare Plant Rank - 2B.2		62 S:3	0	0	0	0	0	3	3	0	3	0	0
Quercus dumosa Nuttall's scrub oak	G3 S3	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive IUCN_EN-Endangered SB_CRES-San Diego Zoo CRES Native Gene Seed Bank USFS_S-Sensitive	300 300	180 S:2	0	0	1	0	0	1	1	1	2	0	0
Rana muscosa southern mountain yellow-legged frog	G1 S1	Endangered Endangered	CDFW_WL-Watch List IUCN_EN-Endangered USFS_S-Sensitive	1,288 2,300	186 S:3	0	0	0	0	3	0	3	0	0	0	3
Rhinichthys osculus ssp. 8 Santa Ana speckled dace	G5T1 S1	None None	AFS_TH-Threatened CDFW_SSC-Species of Special Concern USFS_S-Sensitive	1,671 1,671	13 S:1	0	0	1	0	0	0	0	1	1	0	0
Riparia riparia bank swallow	G5 S2	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern	14 14	298 S:1	0	0	0	0	1	0	1	0	0	0	1

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks A	B	C	D	X	U	Population Status Historic > 20 yr	Recent <= 20 yr	Presence Extant	Poss. Extirp.	Extirp.
Riversidian Alluvial Fan Sage Scrub Riversidian Alluvial Fan Sage Scrub	G1 S1.1	None None		880 2,000	30 S:5	0	0	1	0	1	3	5	0	4	0	1
Sidalcea neomexicana salt spring checkerbloom	G4 S2	None None	Rare Plant Rank - 2B.2 USFS_S-Sensitive	100 100	30 S:3	0	0	0	0	2	1	3	0	1	2	0
Socalchemmis gertschi Gertsch's socalchemmis spider	G1 S1	None None		100 330	3 S:2	0	0	0	0	0	2	2	0	2	0	0
Southern California Arroyo Chub/Santa Ana Sucker Stream Southern California Arroyo Chub/Santa Ana Sucker Stream	GNR SNR	None None		400 400	4 S:1	0	0	0	1	0	0	1	0	1	0	0
Southern Coast Live Oak Riparian Forest Southern Coast Live Oak Riparian Forest	G4 S4	None None		560 2,800	246 S:32	0	2	0	0	2	28	32	0	30	0	2
Southern Cottonwood Willow Riparian Forest Southern Cottonwood Willow Riparian Forest	G3 S3.2	None None		480 2,080	111 S:4	0	0	0	0	1	3	4	0	3	0	1
Southern Mixed Riparian Forest Southern Mixed Riparian Forest	G2 S2.1	None None		1,380 2,000	14 S:4	0	1	0	0	1	2	4	0	3	0	1
Southern Sycamore Alder Riparian Woodland Southern Sycamore Alder Riparian Woodland	G4 S4	None None		175 4,080	230 S:36	0	2	0	0	2	32	36	0	34	0	2
Southern Willow Scrub Southern Willow Scrub	G3 S2.1	None None		1,600 1,600	45 S:1	0	0	1	0	0	0	1	0	1	0	0
Spea hammondii western spadefoot	G2G3 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	129 2,490	1422 S:7	2	1	0	0	3	1	6	1	4	3	0
Spermolepis lateriflora western bristly scaleseed	G5 SH	None None	Rare Plant Rank - 2A	1,100 1,100	4 S:1	0	0	0	0	0	1	1	0	1	0	0

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks A	B	C	D	X	U	Population Status Historic > 20 yr	Recent <= 20 yr	Presence Extant	Poss. Extirp.	Extirp.
Symphyotrichum defoliatum San Bernardino aster	G2 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_CRES-San Diego Zoo CRES Native Gene Seed Bank USFS_S-Sensitive		102 S:2	0	0	0	0	2	0	2	0	0	0	2
Symphyotrichum greatae Greata's aster	G2 S2	None None	Rare Plant Rank - 1B.3 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	1,700 2,800	56 S:6	0	1	0	0	2	3	5	1	4	2	0
Taricha torosa Coast Range newt	G4 S4	None None	CDFW_SSC-Species of Special Concern	1,573 1,818	88 S:2	0	0	1	0	0	1	0	2	2	0	0
Taxidea taxus American badger	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	280 280	594 S:1	0	0	0	0	0	1	1	0	1	0	0
Thamnophis hammondii two-striped gartersnake	G4 S3S4	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	725 3,156	184 S:6	1	2	2	0	0	1	0	6	6	0	0
Thelypteris puberula var. sonorensis Sonoran maiden fern	G5T3 S2	None None	Rare Plant Rank - 2B.2 USFS_S-Sensitive	375 375	27 S:1	0	0	1	0	0	0	0	1	1	0	0
Valley Oak Woodland Valley Oak Woodland	G3 S2.1	None None		1,275 2,580	91 S:2	0	0	0	0	1	1	2	0	1	0	1
Vireo bellii pusillus least Bell's vireo	G5T2 S2	Endangered Endangered	IUCN_NT-Near Threatened NABCI_YWL-Yellow Watch List	55 1,310	503 S:12	0	2	0	0	6	4	8	4	6	6	0

CNPS Rare Plant Inventory

CALIFORNIA NATIVE PLANT SOCIETY

Search Results

62 matches found. Click on scientific name for details

Search Criteria: 9-Quad include [**3411833:3411834:3411835:3411823:3411813:3411825:3411824:3411815:3411814**]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	PHOTO
Arenaria paludicola	marsh sandwort	Caryophyllaceae	perennial stoloniferous herb	May-Aug	FE	CE	G1	S1	1B.1	No Photo Available
Astragalus brauntonii	Braunton's milk-vetch	Fabaceae	perennial herb	Jan-Aug	FE	None	G2	S2	1B.1	 © 2009 Thomas Stoughton
Astragalus pycnostachyus var. *lanosissimus*	Ventura Marsh milk-vetch	Fabaceae	perennial herb	(Jun)Aug-Oct	FE	CE	G2T1	S1	1B.1	No Photo Available
Astragalus tener var. *titi*	coastal dunes milk-vetch	Fabaceae	annual herb	Mar-May	FE	CE	G2T1	S1	1B.1	No Photo Available
Atriplex coulteri	Coulter's saltbush	Chenopodiaceae	perennial herb	Mar-Oct	None	None	G3	S1S2	1B.2	No Photo Available
Atriplex pacifica	south coast saltscale	Chenopodiaceae	annual herb	Mar-Oct	None	None	G4	S2	1B.2	No Photo Available
Atriplex parishii	Parish's brittlescale	Chenopodiaceae	annual herb	Jun-Oct	None	None	G1G2	S1	1B.1	No Photo Available
Atriplex serenana var. *davidsonii*	Davidson's saltscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G5T1	S1	1B.2	No Photo Available
Berberis nevinii	Nevin's barberry	Berberidaceae	perennial evergreen shrub	(Feb)Mar-Jun	FE	CE	G1	S1	1B.1	No Photo Available
Calandrinia breweri	Brewer's calandrinia	Montiaceae	annual herb	(Jan)Mar-Jun	None	None	G4	S4	4.2	No Photo Available
Calochortus catalinae	Catalina mariposa lily	Liliaceae	perennial bulbiferous herb	(Feb)Mar-Jun	None	None	G3G4	S3S4	4.2	No Photo Available
Calochortus clavatus var. *gracilis*	slender mariposa-lily	Liliaceae	perennial bulbiferous herb	Mar-Jun(Nov)	None	None	G4T2T3	S2S3	1B.2	No Photo Available

Calochortus plummerae	Plummer's mariposa-lily	Liliaceae	perennial bulbiferous herb	May-Jul	None	None	G4	S4	4.2	No Photo Available
Calystegia felix	lucky morning-glory	Convolvulaceae	annual rhizomatous herb	Mar-Sep	None	None	G1Q	S1	1B.1	No Photo Available
Calystegia peirsonii	Peirson's morning-glory	Convolvulaceae	perennial rhizomatous herb	Apr-Jun	None	None	G4	S4	4.2	No Photo Available
Camissoniopsis lewisii	Lewis' evening-primrose	Onagraceae	annual herb	Mar-May(Jun)	None	None	G4	S4	3	No Photo Available
Canbya candida	white pygmy-poppy	Papaveraceae	annual herb	Mar-Jun	None	None	G3G4	S3S4	4.2	No Photo Available
Centromadia parryi ssp. australis	southern tarplant	Asteraceae	annual herb	May-Nov	None	None	G3T2	S2	1B.1	No Photo Available
Cercocarpus betuloides var. blancheae	island mountain-mahogany	Rosaceae	perennial evergreen shrub	Feb-May	None	None	G5T4	S4	4.3	No Photo Available
Chloropyron maritimum ssp. maritimum	salt marsh bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May-Oct(Nov)	FE	CE	G4?T1	S1	1B.2	No Photo Available
Chorizanthe parryi var. fernandina	San Fernando Valley spineflower	Polygonaceae	annual herb	Apr-Jul	None	CE	G2T1	S1	1B.1	No Photo Available
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	None	None	G4	S4	4.2	No Photo Available
Deinandra minthornii	Santa Susana tarplant	Asteraceae	perennial deciduous shrub	Jul-Nov	None	CR	G2	S2	1B.2	No Photo Available
Dichondra occidentalis	western dichondra	Convolvulaceae	perennial rhizomatous herb	(Jan)Mar-Jul	None	None	G3G4	S3S4	4.2	No Photo Available
Diplacus johnstonii	Johnston's monkeyflower	Phrymaceae	annual herb	May-Aug	None	None	G4	S4	4.3	No Photo Available
Dithyrea maritima	beach spectaclepod	Brassicaceae	perennial rhizomatous herb	Mar-May	None	CT	G1	S1	1B.1	No Photo Available
Dodecahema leptoceras	slender-horned spineflower	Polygonaceae	annual herb	Apr-Jun	FE	CE	G1	S1	1B.1	No Photo Available
Dudleya blochmaniae ssp. blochmaniae	Blochman's dudleya	Crassulaceae	perennial herb	Apr-Jun	None	None	G3T2	S2	1B.1	No Photo Available
Dudleya cymosa ssp. ovatifolia	Santa Monica dudleya	Crassulaceae	perennial herb	Mar-Jun	FT	None	G5T1	S1	1B.1	No Photo

ovatifolia	dudleya									No Photo Available
Dudleya densiflora	San Gabriel Mountains dudleya	Crassulaceae	perennial herb	Mar-Jul	None	None	G2	S2	1B.1	No Photo Available
Dudleya multicaulis	many-stemmed dudleya	Crassulaceae	perennial herb	Apr-Jul	None	None	G2	S2	1B.2	No Photo Available
Galium cliftonsmithii	Santa Barbara bedstraw	Rubiaceae	perennial herb	May-Jul	None	None	G4	S4	4.3	 © 2020 Brian Bielfelt
Harpagonella palmeri	Palmer's grapplinghook	Boraginaceae	annual herb	Mar-May	None	None	G4	S3	4.2	 © 2015 Keir Morse
Helianthus nuttallii ssp. parishii	Los Angeles sunflower	Asteraceae	perennial rhizomatous herb	Aug-Oct	None	None	G5TX	SX	1A	No Photo Available
Heuchera caespitosa	urn-flowered alumroot	Saxifragaceae	perennial rhizomatous herb	May-Aug	None	None	G3	S3	4.3	 © 2015 Keir Morse
Horkelia cuneata var. puberula	mesa horkelia	Rosaceae	perennial herb	Feb-Jul(Sep)	None	None	G4T1	S1	1B.1	 © 2008 Tony Morosco
Hulsea vestita ssp. gabrielensis	San Gabriel Mountains sunflower	Asteraceae	perennial herb	May-Jul	None	None	G5T3	S3	4.3	 © 2013 Anuja Parikh and Nathan Gale
Imperata brevifolia	California satintail	Poaceae	perennial rhizomatous herb	Sep-May	None	None	G4	S3	2B.1	 © 2020 Matt C. Berger
Juglans californica	Southern California black walnut	Juglandaceae	perennial deciduous tree	Mar-Aug	None	None	G4	S4	4.2	 © 2020 Zoya Akulova
Juncus acutus ssp. leopoldii	southwestern spiny rush	Juncaceae	perennial rhizomatous herb	(Mar)May-Jun	None	None	G5T5	S4	4.2	

										© 2019 Belinda Lo
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	None	None	G4T2	S2	1B.1	 © 2013 Keir Morse
Lepechinia fragrans	fragrant pitcher sage	Lamiaceae	perennial shrub	Mar-Oct	None	None	G3	S3	4.2	 © 2014 Debra L. Cook
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	Brassicaceae	annual herb	Jan-Jul	None	None	G5T3	S3	4.3	 © 2015 Keir Morse
Lilium humboldtii ssp. ocellatum	ocellated Humboldt lily	Liliaceae	perennial bulbiferous herb	Mar-Jul(Aug)	None	None	G4T4?	S4?	4.2	 © 2008 Thomas Stoughton
Lupinus paynei	Payne's bush lupine	Fabaceae	perennial shrub	Mar-Apr(May-Jul)	None	None	G1Q	S1	1B.1	No Photo Available
Malacothamnus davidsonii	Davidson's bush-mallow	Malvaceae	perennial deciduous shrub	Jun-Jan	None	None	G2	S2	1B.2	 © 2016 Keir Morse
Monardella hypoleuca ssp. hypoleuca	white-veined monardella	Lamiaceae	perennial herb	(Apr)May-Aug(Sep-Dec)	None	None	G4T3	S3	1B.3	No Photo Available
Mucronea californica	California spineflower	Polygonaceae	annual herb	Mar-Jul(Aug)	None	None	G3	S3	4.2	 © 2018 Debra L. Cook
Nama stenocarpa	mud nama	Namaceae	annual/perennial herb	Jan-Jul	None	None	G4G5	S1S2	2B.2	No Photo Available
Nasturtium gambelii	Gambel's water cress	Brassicaceae	perennial rhizomatous herb	Apr-Oct	FE	CT	G1	S1	1B.1	No Photo Available
Navarretia prostrata	prostrate vernal pool navarretia	Polemoniaceae	annual herb	Apr-Jul	None	None	G2	S2	1B.2	No Photo Available
Orcuttia californica	California Orcutt grass	Poaceae	annual herb	Apr-Aug	FE	CE	G1	S1	1B.1	No Photo Available
Phacelia hubbyi	Hubby's phacelia	Hydrophyllaceae	annual herb	Apr-Jul	None	None	G4	S4	4.2	No Photo

										Available
Pseudognaphalium leucocephalum	white rabbit-tobacco	Asteraceae	perennial herb	(Jul)Aug-Nov(Dec)	None	None	G4	S2	2B.2	No Photo Available
Quercus dumosa	Nuttall's scrub oak	Fagaceae	perennial evergreen shrub	Feb-Apr(May-Aug)	None	None	G3	S3	1B.1	No Photo Available
Quercus durata var. gabrielensis	San Gabriel oak	Fagaceae	perennial evergreen shrub	Apr-May	None	None	G4T3	S3	4.2	No Photo Available
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	None	None	G3	S3	1B.2	 ©2013 Debra L. Cook
Sidalcea neomexicana	salt spring checkerbloom	Malvaceae	perennial herb	Mar-Jun	None	None	G4	S2	2B.2	No Photo Available
Spermolepis lateriflora	western bristly scaleseed	Apiaceae	annual herb	Mar-Apr	None	None	G5	SH	2A	No Photo Available
Symphyotrichum defoliatum	San Bernardino aster	Asteraceae	perennial rhizomatous herb	Jul-Nov	None	None	G2	S2	1B.2	No Photo Available
Symphyotrichum greatae	Greata's aster	Asteraceae	perennial rhizomatous herb	Jun-Oct	None	None	G2	S2	1B.3	No Photo Available
Thelypteris puberula var. sonorensis	Sonoran maiden fern	Thelypteridaceae	perennial rhizomatous herb	Jan-Sep	None	None	G5T3	S2	2B.2	No Photo Available

Showing 1 to 62 of 62 entries

Suggested Citation:
California Native Plant Society, Rare Plant Program. 2022. Rare Plant Inventory (online edition, v9-01 1.5). Website https://www.rareplants.cnps.org [accessed 27 May 2022].

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Los Angeles County, California

Local office

Carlsbad Fish And Wildlife Office

(760) 431-9440
(760) 431-5901

2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385

http://www.fws.gov/carlsbad/

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

---

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
California Condor Gymnogyps californianus There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8193	Endangered
Coastal California Gnatcatcher Polioptila californica californica Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8178	Threatened
Least Bell's Vireo Vireo bellii pusillus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/5945	Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Gambel's Watercress Rorippa gambellii Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4201	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES

	THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Allen's Hummingbird Selasphorus sasin This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
California Thrasher Toxostoma redivivum This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Jul 31
Common Yellowthroat Geothlypis trichas sinuosa This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31
Lawrence's Goldfinch Carduelis lawrencei This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9464	Breeds Mar 20 to Sep 20
Nuttall's Woodpecker Picoides nuttallii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20
Oak Titmouse Baeolophus inornatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Wrentit Chamaea fasciata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

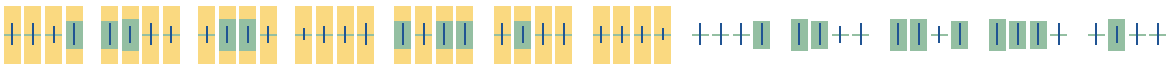
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

■ probability of presence ■ breeding season | survey effort – no data

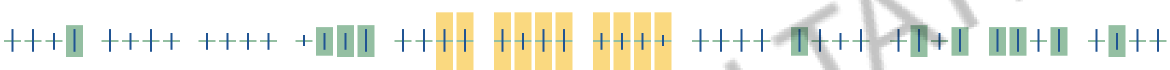
SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

Allen's Hummingbird
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

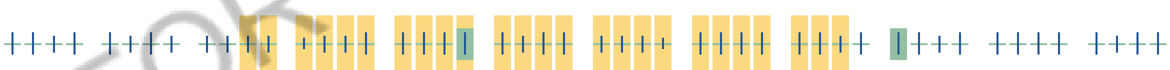
California Thrasher
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



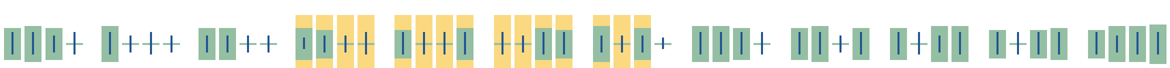
Common Yellowthroat
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



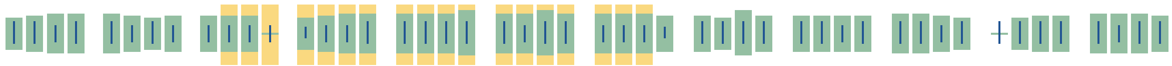
Lawrence's Goldfinch
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



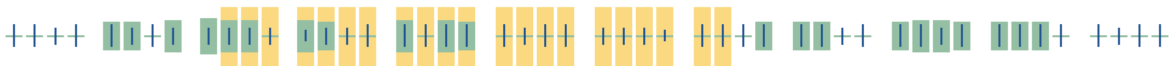
Nuttall's Woodpecker
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Oak Titmouse
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Wrentit
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

APPENDIX C

Cultural and Tribal Cultural Resources Reports

38 NORTH MARENGO AVENUE
PASADENA, CALIFORNIA 91101
T 626.204.9800 F 626.204.9834

June 30, 2022 10649.99

Marshall Styers
Environmental Planning and Assessment
Los Angeles Department of Water and Power
111 North Hope Street, Room 1044
Los Angeles, California 90012

Subject: ***Preliminary Cultural Resources Assessment Report for the North Hollywood Chlorination Stations Project, City of Los Angeles, California***

Dear Mr. Styers:

The Los Angeles Department of Water and Power (LADWP) retained Dudek to provide a preliminary summary of cultural resources findings for the proposed North Hollywood Chlorination Stations Project (Project), located in the North Hollywood community of Los Angeles, California. The purpose of the preliminary cultural resources assessment is to assist LADWP in its evaluation of potential impacts to cultural resources associated with the construction and operation of the Project and in consultations with California Native American groups in accordance with Assembly Bill 52 (AB 52). This letter report includes the following components: 1) an environmental setting including a review of soils; 2) a cultural setting; 3) a California Historical Resources Information System (CHRIS) records search; 4) a review of historical maps and aerial photographs; 5) a search of the California Native American Heritage Commission's (NAHC) Sacred Lands File (SLF), including a brief introduction into AB 52; and 6) an analysis of the sensitivity of the Project site to contain cultural and tribal cultural resources. This preliminary letter report was prepared in conformance with California Environmental Quality Act (CEQA) Guidelines Section 15064.5 for historical resources and 21083.2 for archaeological resources. LADWP is the lead agency responsible for compliance with CEQA.

LADWP proposes to modify its existing Rinaldi-Toluca (RT) and North Hollywood West (NHW) Chlorination Stations to expand their treatment capacity and replace its existing North Hollywood Central Chlorination Station within the same property with the new North Hollywood Central (NHC) Chlorination Station. Although the Project addresses the construction and operation of three chlorination stations, this preliminary cultural resources assessment focuses on the RT Chlorination Station and the NHC Chlorination Station as the proposed upgrade at the NHW Chlorination Station does not include any ground disturbance and would only modify an existing facility constructed in 2014. Therefore, Project components related to the NHW Chlorination Station will not be addressed in this report nor will the proposed construction activities associated with the NHW Chlorination Station be analyzed for the potential impacts to cultural resources.

Project Location

The Project is located in the southeast San Fernando Valley within the highly urbanized North Hollywood community of Los Angeles. The Project site falls on public land survey system Section 6 of Township 1 North, Range 14 West on the *Van Nuys*, CA 7.5-minute United States Geological Survey (USGS) Quadrangle (Attachment A, Figure 1).

RT Chlorination Station

The existing RT Chlorination Station is located within the approximately 1.75-acre LADWP Lankershim Yard property at 11845 Vose Street (Attachment A, Figure 2). Lankershim Yard is immediately surrounded on all sides by light industrial uses. The broader vicinity consists of light industrial uses to the west, north, and east, and medium-density multi-family residential uses to the south.

NHC Chlorination Station

The site for the replacement NHC Chlorination Station is located within the approximately 3.75-acre LADWP North Hollywood Pump Station (NHPS) property, which is located at 11805 Vanowen Street. The NHPS property occupies the entire block encompassed by Vanowen Street on the south, Hinds Avenue on the west, Dehougne Street on the north, and Morella Avenue on the east. A pump station and associated facilities have been located on the property since the 1930s, but the facilities were rebuilt in the early 1990s and the NHC groundwater treatment facilities are currently under construction within the property. The proposed replacement NHC Chlorination Station would occupy approximately 0.35 acres along Dehougne Street at the northern end of the property (Attachment A, Figure 3). The address for the station would be 6859 Morella Avenue, where the main entry would be located. The parcel on the southeast corner of Dehougne Street and Hinds Avenue is currently occupied by temporary trailers for administrative functions supporting the construction of the NHC groundwater treatment facilities. The trailers will vacate the site prior to the start of construction for the replacement NHC Chlorination Station in mid-2023. The parcel on the southwest corner of Dehougne Street and Morella Avenue, although owned by LADWP, is currently occupied by a multi-family residential building. The tenants occupying the units will be relocated with assistance from LADWP, and the building will be demolished as part of the NHC treatment facilities project prior to start of construction of the replacement chlorination station.

Uses immediately adjacent to the NHPS property (along Vanowen Street, Hinds Avenue, Dehougne Street, and Morella Avenue) consist primarily of multi-family residential units. An LADWP-owned parcel on the northeast corner of Vanowen Street and Morella Avenue, across from the NHPS at 11759 Vanowen Street, is vacant of any permanent structures and is currently being used as a laydown and construction support area for the NHC treatment facilities construction. The broader surrounding area also consists primarily of multi-family residences, with light industrial and community commercial and service functions farther to the north and east of NHPS and single-family residential uses farther to the south.

Project Description

The Project involves the construction and operation of the three chlorination stations, including the RT, NHC, and NHW Chlorination Stations and the operation of the North Hollywood Operable Unit Second Interim Remedy (NHOU2IR) facilities, which are currently being constructed within the same property as the RT Chlorination Station. The proposed Project would provide capability to safely and effectively disinfect water pumped from the RT Well Field, the NHW Well Field, and the western portion of the North Hollywood Operable Unit (NHOU), which will all be operated consistent with LADWP's historical use of its well fields to help meet current and projected demand for drinking water in the City of Los Angeles. This disinfection capability would help ensure the reliability and sustainability of the City's drinking water system by reducing dependence on imported water supplies, consistent with goals established in the 2020 LADWP Urban Water Management Plan. The water disinfected at the chlorination stations would feed into the existing sump and forebay located at the LADWP NHPS property. From the NHPS forebay, drinking water enters the LADWP water distribution system directly or after passing through the pump station, providing supplies to large portions of the City.

Chlorine for water treatment is available in several forms but can be produced at the point of use, rather than imported as a pre-manufactured product, by combining salt and water to form a brine solution that chemically reacts when exposed to an electrical charge to create a solution of sodium hypochlorite, a chlorine compound that can then be injected into the water to provide disinfection. Such a point of use system is known as On-Site Hypochlorite Generation (OSHG).

The existing NHW and RT Chlorination Stations are OSHG systems that provide for primary disinfection in compliance with the US Environmental Protection Agency's Groundwater Rule (2006) and achieve the desired chlorine residual prior to the addition of ammonia to the water at the NHPS property to form chloramines. The existing North Hollywood Chlorination Station, which first entered service in the early 1990s, uses gaseous chlorine that is delivered to the station in canisters. However, the existing station has not been operated for several years due to safety concerns related to the transport and handling of gaseous chlorine. These safety concerns have been alleviated by the OSHG systems at the NHW and RT Chlorination Stations, which currently provide the disinfection for water delivered to the NHPS property without the need to operate the existing North Hollywood Chlorination Station.

However, the NHW Well Field, NHC, and NHOU2IR groundwater treatment facilities will restore well pumping capacity that has been curtailed by the past inactivation of contaminated wells. This restored capacity is consistent with historical use and water rights retained by LADWP. Therefore, additional chlorination capacity is required at the existing NHW and RT Chlorination Stations, and the capacity of the existing gaseous chlorine North Hollywood Chlorination Station must be replaced and expanded to provide disinfection to enable the restored operation of the well fields. This would help ensure the operational flexibility, reliability, and resilience of the City's drinking water system and increase the sustainability of the system by reducing dependence on imported water supplies.

RT Chlorination Station

The existing RT Chlorination Station, which has been in service since 2014, is an approximately 2,000 square-foot building located on the west-central side of the Lankershim Yard. The existing station includes the OSHG unit, one brine tank, two sodium hypochlorite tanks, and appurtenant equipment, such as piping, water softener, chemical dosing system, and instrumentation. All of these systems and equipment are housed within the existing 2,000 square-foot chlorination station building within the Lankershim Yard property. Under the Proposed Project, the RT OSHG system would be upgraded to produce 2,000 pounds per day (ppd) of chlorine equivalent, which would require replacing the existing OSHG unit and upgrading the metering pumps and power supply. The existing brine tank housed within the chlorination station building would be converted to a sodium hypochlorite tank, and two new 8,050-gallon brine tanks would be installed. This upgrade would also require new pipe connections and would involve modifications to the existing monitoring and control systems to allow for both on-site and remote operation of the OSHG. In addition, the station building would be retrofitted to comply with current seismic codes. The water from the untreated RT wells would be injected with chlorine from the upgraded chlorination station at the existing chlorine injection point within Lankershim Yard, east of the station. No modifications to this injection point would be required. The water from the NHOU2IR treatment facilities would be injected with chlorine at a new injection point within Lankershim Yard on the 24-inch collector line that is being installed under the NHOU2IR.

The replacement of the existing OSHG unit and the conversion of the existing brine tank to a sodium hypochlorite tank at the RT Chlorination Station would occur within the existing structure. However, because additional brine storage capacity would be required, two new 8,050-gallon brine tanks would be installed within a new approximately 1,000 square-foot metal clad structure adjacent to and south of the existing chlorination station, within the Lankershim Yard property. The larger OSHG unit would need upgraded electrical service, which would require the installation of new underground conduits from the electrical service equipment in the southeast corner of Lankershim Yard. New chlorination injection equipment in an underground vault at the NHOU2IR 24-inch well collector line would also be installed beneath the pavement east of the chlorination station. All construction activity, including staging, storage, laydown, and worker parking, would be confined to the Lankershim Yard property.

Current Project design indicates that the depth of ground disturbance associated with construction activities for the new approximately 1,000-square-foot brine tank structure would be between 5 to 9 feet below the existing ground surface.

NHC Chlorination Station

The replacement NHC Chlorination Station would include two 2,000-ppd OSHG units, two 9,100-gallon brine tanks, and five 11,400-gallon sodium hypochlorite tanks. The facility would also include water softening equipment and all necessary plumbing, electrical, and monitoring and control systems. These components would require an approximately 6,000-square foot single-story building. Site improvements would include truck access, security fencing, and perimeter landscaping.

The replacement NHC Chlorination Station would be a single-story concrete building with poured in place walls, fronting Dehougne Street, at the north end of the NHPS property. The building would be approximately 230 feet long, 26 feet wide, and 30 feet tall. It would include separate rooms for the brine tanks, the sodium hypochlorite tanks and the OSHG unit, water softener system, control equipment, and electrical equipment. An approximately 20-foot wide concrete driveway would be constructed behind the building between Morella Avenue and Hinds Avenue to provide truck access during operations. An emergency generator on a concrete pad would be located adjacent to the building along Morella Avenue. The perimeter around the building along Hinds Avenue, Dehougne Street, and Morella Avenue would be landscaped, and a security fence and new sidewalk would be installed. The construction of the chlorination station would entail several phases, including over-excavation, backfilling, and compaction of the site; installation of under-slab utilities; construction of foundations and structures; installation of equipment, including the sodium hypochlorite and brine tanks, the OSGH unit, and associated plumbing, electrical, communications, and metering systems; and site improvements, including the access driveway, landscaping, fencing, and sidewalk.

Current Project design indicates that the depth of ground disturbance associated with construction activities for the NHC Chlorination Station replacement is between 5 to 9 feet below the existing ground surface.

Regulatory Context

Federal

National Register of Historic Places

The CHRIS records search identified previously recorded cultural resources within the Project site that were evaluated for National Register of Historic Places (NRHP) eligibility. The NRHP is the United States' official list of districts, sites, buildings, structures, and objects worthy of preservation. Overseen by the National Park Service, under the U.S. Department of the Interior, the NRHP was authorized under the National Historic Preservation Act, as amended. Its listings encompass all National Historic Landmarks, as well as historic areas administered by the National Park Service.

NRHP guidelines for the evaluation of historic significance were developed to be flexible and to recognize the accomplishments of all who have made significant contributions to the nation's history and heritage. Its criteria are designed to guide state and local governments, federal agencies, and others in evaluating potential entries in the NRHP. For a property to be listed in or determined eligible for listing, it must be demonstrated to possess integrity and to meet at least one of the following criteria:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
>
> A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
> B. That are associated with the lives of persons significant in our past; or
> C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
> D. That have yielded, or may be likely to yield, information important in prehistory or history.

Integrity is defined in NRHP guidance, How to Apply the National Register Criteria, as "the ability of a property to convey its significance. To be listed in the NRHP, a property must not only be shown to be significant under the NRHP criteria, but it also must have integrity" (NPS 1997). NRHP guidance further asserts that properties be completed at least 50 years ago to be considered for eligibility. Properties completed fewer than 50 years before evaluation must be proven to be "exceptionally important" (criteria consideration to be considered for listing).

State

The cultural and tribal cultural resources assessment for this Project was conducted in compliance with the California Environmental Quality Act (CEQA). The regulatory framework as it pertains to cultural resources under CEQA is detailed below.

Under the provisions of CEQA, including the CEQA Statutes (PRC Sections 21083.2 and 21084.1), the CEQA Guidelines (14 CCR 15064.5), and California Public Resources Code (PRC) Section 5024.1 (14 CCR 4850 et seq.), properties expected to be directly or indirectly affected by a proposed project must be evaluated for California Register of Historical Resources (CRHR) eligibility (PRC Section 5024.1).

The purpose of the CRHR is to maintain listings of the state's historical resources and to indicate which properties are to be protected, to the extent prudent and feasible, from material impairment and substantial adverse change. The term historical resources includes a resource listed in or determined to be eligible for listing in the CRHR; a resource included in a local register of historical resources; and any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (14 CCR 15064.5[a]). The criteria for listing properties in the CRHR were developed in accordance with previously established criteria developed for listing in the National Register of Historic Places. The California Office of Historic Preservation regards "any physical evidence of human activities over 45 years old" as meriting recordation and evaluation (OHP 1995:2).

The California Register of Historical Resources

A cultural resource is considered "historically significant" under CEQA if the resource meets one or more of the criteria for listing on the CRHR. The CRHR was designed to be used by state and local agencies, private groups, and citizens to identify existing cultural resources within the state and to indicate which of those resources should be protected, to the extent prudent and feasible, from substantial adverse change. The following criteria have been established for the CRHR. A resource is considered significant if it:

1. is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. is associated with the lives of persons important in our past;
3. embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. has yielded, or may be likely to yield, information important in prehistory or history.

In addition to meeting one or more of the above criteria, historical resources eligible for listing in the CRHR must retain enough of their historic character or appearance to be able to convey the reasons for their significance. Such integrity is evaluated in regard to the retention of location, design, setting, materials, workmanship, feeling, and association.

Under CEQA, if an archeological site is not a historical resource but meets the definition of a "unique archeological resource" as defined in PRC Section 21083.2, then it should be treated in accordance with the provisions of that section. A unique archaeological resource is defined as follows:

- An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
  - Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information
  - Has a special and particular quality, such as being the oldest of its type or the best available example of its type
  - Is directly associated with a scientifically recognized important prehistoric or historic event or person

Resources that neither meet any of these criteria for listing in the CRHR nor qualify as a "unique archaeological resource" under CEQA (PRC Section 21083.2) are viewed as not significant. Under CEQA, "A non-unique archaeological resource need be given no further consideration, other than the simple recording of its existence by the lead agency if it so elects" (PRC Section 21083.2[h]).

Impacts that adversely alter the significance of a resource listed in or eligible for listing in the CRHR are considered a significant effect on the environment. Impacts to historical resources from a proposed project are thus considered significant if the project (1) physically destroys or damages all or part of a resource; (2) changes the character of the use of the resource or physical feature within the setting of the resource, which contributes to its significance; or (3) introduces visual, atmospheric, or audible elements that diminish the integrity of significant features of the resource.

California Environmental Quality Act

As described further, the following CEQA statutes (PRC Section 21000 et seq.) and CEQA Guidelines (14 CCR 15000 et seq.) are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

- PRC Section 21083.2(g) defines "unique archaeological resource."
- PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a) defines "historical resources." In addition, CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource;" it also defines the circumstances when a project would materially impair the significance of a historical resource.
- PRC Section 21074(a) defines "tribal cultural resources."
- PRC Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
- PRC Sections 21083.2(b) and 21083.2(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures. Preservation in place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

More specifically, under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (PRC Section 21084.1; CEQA Guidelines Section 15064.5(b)). If a site is listed or eligible for listing in the CRHR, or included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1(q)), it is an "historical resource" and is presumed to be historically or culturally significant for purposes of CEQA (PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption (PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)).

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (CEQA Guidelines Section 15064.5(b)(1); PRC Section 5020.1(q)). In turn, the significance of a historical resource is materially impaired when a project does any of the following:

(1) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or
(2) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
(3) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA (CEQA Guidelines Section 15064.5(b)(2)).

Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any "historical resources," then evaluates whether that project will cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance is materially impaired.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (PRC Sections 21083.2(a)–(c)).

Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC Section 21083.2(g)).

Impacts on nonunique archaeological resources are generally not considered a significant environmental impact (PRC Section 21083.2(a); CEQA Guidelines Section 15064.5(c)(4)). However, if a nonunique archaeological resource qualifies as a TCR (PRC Sections 21074(c) and 21083.2(h)), further consideration of significant impacts is required.

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described below, these procedures are detailed in PRC Section 5097.98.

California State Assembly Bill 52

Assembly Bill (AB) 52 of 2014 amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 established that tribal cultural resources (TCRs) must be considered under CEQA and also provided for additional Native American consultation requirements for the lead agency. Section 21074 describes a TCR as a site, feature, place, cultural landscape, sacred place, or object that is considered of cultural value to a California Native American Tribe and that is either:

- On or determined to be eligible for the California Register of Historical Resources or a local historic register; or
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1.

AB 52 formalizes the lead agency–tribal consultation process, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with the project site, including tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report.

Section 1 (a)(9) of AB 52 establishes that "a substantial adverse change to a tribal cultural resource has a significant effect on the environment." Effects on TCRs should be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures "capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource." Further, if a California Native American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects to tribal cultural resources, the consultation shall include those topics (PRC Section 21080.3.2[a]). The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted (PRC Section 21082.3[a]).

California Health and Safety Code Section 7050.5

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. California Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the county coroner has examined the remains (Section 7050.5(b)). PRC Section 5097.98 also outlines the process to be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact NAHC within 24 hours (Section 7050.5(c)). NAHC will notify the "most likely descendant." With the permission of the landowner, the most likely descendant may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the most likely descendant by NAHC. The most likely descendant may recommend means of treating or disposing of, with appropriate dignity, the human remains, and items associated with Native Americans.

Local

Los Angeles County General Plan

Historical, cultural, and paleontological resources are discussed in the County's Conservation and Natural Resources Element of the *Los Angeles County General Plan 2035,* which was adopted in October of 2015. The County recognizes that historical and cultural resources are an important part of the County's identity and contribute to the local economy. The goals and policies that apply to historical, cultural, and paleontological resources are as follows:

- **Policy C/NR 14.1:** Mitigate all impacts from new development on or adjacent to historic, cultural, and paleontological resources to the greatest extent feasible.
- **Policy C/NR 14.2:** Support an inter-jurisdictional collaborative system that protects and enhances the County's historic, cultural, and paleontological resources.
- **Policy C/NR 14.3:** Support the preservation and rehabilitation of historic buildings.
- **Policy C/NR 14.4**: Ensure proper notification procedures to Native American tribes in accordance with Senate Bill 18 (2004).
- **Policy C/NR 14.5:** Promote public awareness of the County's historic, cultural, and paleontological resources.
- **Policy C/NR 14.6:** Ensure proper notification and recovery processes are carried out for development on or near historic, cultural, and paleontological resources.

City of Los Angeles General Plan

Conservation Element

The City of Los Angeles General Plan includes a Conservation Element. Section 3 of the Conservation Element, adopted in September 2001, includes policies for the protection of archaeological resources. As stated therein, it is the City's policy that archaeological resources be protected for research and/or educational purposes. Section 5 of the Conservation Element recognizes the City's responsibility for identifying and protecting its cultural and historical heritage. The Conservation Element establishes the policy to continue to protect historic and cultural sites and/or resources potentially affected by proposed land development, demolition, or property modification activities, with the related objective to protect important cultural and historical sites and resources for historical, cultural, research, and community educational purposes (City of Los Angeles 2001).

In addition to the National Register and the California Register, two additional types of historic designations may apply at a local level:

1. Historic-Cultural Monument (HCM)
2. Classification by the City Council as a Historic Preservation Overlay Zone (HPOZ)

Of these two additional types of historic designations, only one, HCM, is applicable for the purposes of this cultural study and is therefore further explained below.

Los Angeles Historic-Cultural Monuments

Local landmarks in the City of Los Angeles are known as Historic-Cultural Monuments (HCMs) and are under the aegis of the Planning Department, Office of Historic Resources. They are defined in the Cultural Heritage Ordinance as follows (Los Angeles Municipal Code Section 22.171.7, added by Ordinance No. 178,402, effective April 2, 2007):

> An HCM is any site (including significant trees or other plant life located on the site), building or structure of particular historic or cultural significance to the City of Los Angeles, including historic structures or sites in which the broad cultural, economic or social history of the nation, state or

> community is reflected or exemplified; or which is identified with historic personages or with important events in the main currents of national, state or local history; or which embodies the distinguishing characteristics of an architectural type specimen, inherently valuable for a study of a period, style or method of construction; or a notable work of a master builder, designer, or architect whose individual genius influenced his or her age.

This definition has been broken down into the following four HCM designation criteria that closely parallel the existing NRHP and CRHR criteria and are numbered for clarity:

1. Is identified with important events in the main currents of national, State or local history, or exemplifies significant contributions to the broad cultural, political, economic or social history of the nation, state, city, or community; or
2. Is associated with the lives of Historic Personages important to national, state, city, or local history; or
3. Embodies the distinctive characteristics of a style, type, period, or method of construction; or represents a notable work of a master designer, builder or architect whose genius influenced his or her age; or possesses high artistic values; or
4. Has yielded, or has the potential to yield, information important to the pre-history or history of the nation, state, city or community.

Environmental Setting and Review of Soils

The Project site is located in the southeast portion of the San Fernando Valley, which is surrounded by mountains of California's Transverse Ranges geomorphic province. The floor of the San Fernando Valley is composed of alluvial fans and floodplains drained by the Los Angeles River and its tributaries. The Project site is approximately 3.3-miles north of the confluence of the Los Angeles River and Tujunga Wash, a major tributary of the Los Angeles River, and 1.8-miles east of the now channelized Tujunga Wash. Elevation at the RT Chlorination Station averages 740 feet above mean sea level (amsl) sloping gently southeast to the NHC Chlorination Station at an average elevation of 723 feet amsl (Google 2022).

According to the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2022), soils within the Project site are comprised of Urban land (45 percent), Palmview (25 percent), Tujunga (20 percent), and minor components including San emidgio (5 percent) and Typic xerorthents (5 percent). All soils are associated with low-slope alluvial fans and floodplains and consist of sandy loam and/or loamy sand.

A review of the USGS mineral resources (USGS 2022) online spatial data for geology indicates that existing development is underlain by Quaternary alluvium and marine deposits, generally dating between the Pleistocene and the Holocene geologic age. The terminal Pleistocene-era and Holocene-era alluvial formations do have the potential to support the presence of buried archaeological resources. These soils are associated with the period of prehistoric human use, as well as represent ongoing processes of development that have potential to preserve cultural material in context, depending on area-specific topographical setting.

Geotechnical Report Review

RT Chlorination Station

The geotechnical report, *Geotechnical Report Rinaldi Toluca OSHG Station Upgrades, Los Angeles, California* (DYA 2021a), was prepared for proposed LADWP RT Chlorination Station improvements within the LADWP Lankershim Yard portion of the current Project site. The report details the results of subsurface explorations within Lankershim Yard conducted by Diaz Yourman & Associates (DYA), as well as a review of geotechnical data collected during previous subsurface investigations by LADWP (2012) and Wood (2018). Overall, ten (10) borings have been completed within Lankershim Yard since 2012. DYA completed one (1) boring along the western portion of the yard south of the existing RT OSHG Station; LADWP completed six (6) borings within and around the OSHG Station; and Wood completed three (3) borings within the northern portion of the yard. According to DYA (2021a), subsurface exploratory boring investigations within the Project site were completed to a maximum depth of 51.5 feet below ground surface (bgs).

All boring locations were placed within areas paved with asphalt concrete. In general, subsurface investigations identified natural alluvial soils consisting of loose to medium-dense, coarse-grained sands with varying amounts of silts. Sands became dense to very dense at deeper depths. Various amounts of fine to coarse-grained gravel was also encountered within each boring. Groundwater in this area has been recorded at approximately 70 feet bgs, and was therefore not encountered in any of the geotechnical borings (DYA 2021a). The results of each boring are summarized in Table 1 below.

Table 1. Boring Log Summary for RT Chlorination Station

Subsurface Exploration	Boring Number	Asphalt (in bgs)	Native Alluvium (feet bgs)					
			0–10	10-20	20-30	30-40	40-50	50-60
DYA 2021a	DYB21-02	0–4 in	4 in - **51.2 ft**					
LADWP 2012	K10-HA-01	0–3 in	3 in - **51.5 ft**					
	K10-HA-02	0–4 in	4 in - **12.5 ft**					
	K10-HA-03	0–4 in	4 in - **6.5 ft**					
	K10-HA-04	0–4 in	4 in - **6.5 ft**					
	K10-HA-05	0–4 in	4 in - **1.8 ft***					
	K10-HA-06	0–4 in	4 in - **6.5 ft**					
Wood 2018	W18-B-1	0–3 in	3 in - **41.5 ft**					
	W18-B-2	0–3 in	3 in - **21.5 ft**					
	W18-B-3	0–3 in	3 in - **9.5 ft**					

*encountered obstruction

NHC Chlorination Station

The geotechnical report, *Geotechnical Report North Hollywood Central Chlorination Station Replacement, 6838 Hinds Avenue, North Hollywood, California* (DYA 2021b), was prepared for proposed NHC Chlorination Station improvements within the northern portion of LADWP NHPS property that overlaps the current Project site. The report details the results of subsurface explorations conducted by DYA, as well as the review of a previous geotechnical investigation conducted by Geo-Advantec, Inc. (GAI) in 2020 (GAI 2020). Overall, four (4) borings have been completed within the current Project site since 2020. DYA completed two (2) borings within the western portion of the Project site at Dehougne Street and Morella Avenue, and GAI completed two (2) borings along the southern perimeter of the Project site. According to DYA (2021b), subsurface exploratory boring investigations within the Project site were completed to a maximum depth of 50.3 feet bgs. The results of each boring are summarized in Table 2 below.

In general, subsurface investigations identified natural alluvial soils described as very loose to medium-dense, coarse-grained sands with varying amounts of silts. Sands became dense to very dense at deeper depths. Gravel with silt was encountered within DYA bore DYB21-01 at 45.5 feet bgs to termination at 50.3 feet bgs. Trace concrete was noted within DYB21-01 from surface to approximately 18 feet bgs. Likewise, trace brick and a noted organic smell was encountered in DYA bore DYP21-01 from surface to 9 feet bgs. This was underlain by a layer of medium dense silt with trace rootlets from approximately 9 feet to 12 feet bgs. Both of these borings occurred in the northwest corner of the Project site where a multi-family residential property was demolished in the 2000s (see section *Historical Aerial Images* below), suggesting that demolition debris may have infiltrated the borings.

Table 2. Boring Log Summary for NHC Chlorination Station

Subsurface Exploration	Boring Number	Native Alluvium (feet bgs)					
		0–10	10-20	20-30	30-40	40-50	50-60
DYA 2021b	DYB21-01	0 – **50.3 ft**					
	DYP21-01	0 – **12 ft***					
GAI 2020	B-1	0 - **31.5 ft**					
	B-2	0 - **31.5 ft**					

*Boring terminated to convert to percolation test well

Cultural Setting

Prehistoric Overview

Evidence for continuous human occupation in Southern California spans the last 10,000 years. Various attempts to parse out variability in archaeological assemblages over this broad period have led to the development of several cultural chronologies; some of these are based on geologic time, most are based on temporal trends in archaeological assemblages, and others are interpretive reconstructions. To be more inclusive, this research employs a common set of generalized terms used to describe chronological trends in assemblage composition: Paleoindian (pre-5500 BC), Archaic (8000 BC–AD 500), Late Prehistoric (AD 500–1769), and Ethnohistoric (post-AD 1769).

Paleoindian Period (pre-5500 BC)

Evidence for Paleoindian occupation in the region is tenuous. Our knowledge of associated cultural pattern(s) is informed by a relatively sparse body of data that has been collected from within an area extending from coastal San Diego, through the Mojave Desert, and beyond. One of the earliest dated archaeological assemblages in the region is located in coastal Southern California (though contemporaneous sites are present in the Channel Islands) derives from SDI-4669/W-12 in La Jolla. A human burial from SDI-4669 was radiocarbon dated to 9,590–9,920 years before present (95.4% probability) (Hector 2006). The burial is part of a larger site complex that contained more than 29 human burials associated with an assemblage that fits the Archaic profile (i.e., large amounts of ground stone, battered cobbles, and expedient flake tools). In contrast, typical Paleoindian assemblages include large stemmed projectile points, high proportions of formal lithic tools, bifacial lithic reduction strategies, and relatively small proportions of ground stone tools. Prime examples of this pattern are sites that were studied by Emma Lou Davis (1978) on Naval Air Weapons Station China Lake near Ridgecrest, California. These sites contained fluted and unfluted stemmed points and large numbers of formal flake tools (e.g., shaped scrapers, blades). Other typical Paleoindian sites include the Komodo site (MNO-679)—a multi-component fluted point site, and MNO-680—a single component Great Basined Stemmed point site (see Basgall et al. 2002). At MNO-679 and -680, ground stone tools were rare while finely made projectile points were common.

Warren et al. (2004) claimed that a biface manufacturing tradition present at the Harris site complex (SDI-149) is representative of typical Paleoindian occupation in the San Diego region that possibly dates between 10,365 and 8200 BC (Warren et al. 2004). Termed San Dieguito (see also Rogers 1945), assemblages at the Harris site are qualitatively distinct from most others in region because the site has large numbers of finely made bifaces (including projectile points), formal flake tools, a biface reduction trajectory, and relatively small amounts of processing tools (see also Warren 1968). Despite the unique assemblage composition, the definition of San Dieguito as a separate cultural tradition is hotly debated. Gallegos (1987) suggested that the San Dieguito pattern is simply an inland manifestation of a broader economic pattern. Gallegos's interpretation of San Dieguito has been widely accepted in recent years, in part because of the difficulty in distinguishing San Dieguito components from other assemblage constituents. In other words, it is easier to ignore San Dieguito as a distinct socioeconomic pattern than it is to draw it out of mixed assemblages.

The large number of finished bifaces (i.e., projectile points and non-projectile blades), along with large numbers of formal flake tools at the Harris site complex, is very different than nearly all other assemblages throughout the region, regardless of age. Warren et al. (2004) made this point, tabulating basic assemblage constituents for key early Holocene sites. Producing finely made bifaces and formal flake tools implies that relatively large amounts of time were spent for tool manufacture. Such a strategy contrasts with the expedient flake-based tools and cobble-core reduction strategy that typifies non-San Dieguito Archaic sites. It can be inferred from the uniquely high degree of San Dieguito assemblage formality that the Harris site complex represents a distinct economic strategy from non-San Dieguito assemblages.

San Dieguito sites are rare in the inland valleys, with one possible candidate, RIV-2798/H, located on the shore of Lake Elsinore. Excavations at Locus B at RIV-2798/H produced a toolkit consisting predominately of flaked stone tools, including crescents, points, and bifaces, and lesser amounts of groundstone tools, among other items (Grenda 1997). A calibrated and reservoir-corrected radiocarbon date from a shell produced a date of 6630 BC. Grenda (1997) suggested this site represents seasonal exploitation of lacustrine resources and small game and resembles coastal San Dieguito assemblages and spatial patterning.

If San Dieguito truly represents a distinct socioeconomic strategy from the non-San Dieguito Archaic processing regime, its rarity implies that it was not only short-lived, but that it was not as economically successful as the Archaic strategy. Such a conclusion would fit with other trends in Southern California deserts, where hunting-related tools were replaced by processing tools during the early Holocene (see Basgall and Hall 1990).

Archaic Period (8000 BC – AD 500)

The more than 2,500-year overlap between the presumed age of Paleoindian occupations and the Archaic period highlights the difficulty in defining a cultural chronology in Southern California. If San Dieguito is the only recognized Paleoindian component in the coastal Southern California, then the dominance of hunting tools implies that it derives from Great Basin adaptive strategies and is not necessarily a local adaptation. Warren et al. (2004) admitted as much, citing strong desert connections with San Dieguito. Thus, the Archaic pattern is the earliest local socioeconomic adaptation in the region (see Hale 2001, 2009).

The Archaic pattern, which has also been termed the Millingstone Horizon (among others), is relatively easy to define with assemblages that consist primarily of processing tools, such as millingstones, handstones, battered cobbles, heavy crude scrapers, incipient flake-based tools, and cobble-core reduction. These assemblages occur in all environments across the region with little variability in tool composition. Low assemblage variability over time and space among Archaic sites has been equated with cultural conservatism (see Basgall and Hall 1990; Byrd and Reddy 2002; Warren 1968; Warren et al. 2004). Despite enormous amounts of archaeological work at Archaic sites, little change in assemblage composition occurred until the bow and arrow was adopted around AD 500, as well as ceramics at approximately the same time (Griset 1996; Hale 2009). Even then, assemblage formality remained low. After adoption of the bow, small arrow points appear in large quantities and already low amounts of formal flake tools are replaced by increasing amounts of expedient flake tools. Similarly, shaped millingstones and handstones decreased in proportion relative to expedient, unshaped ground stone tools (Hale 2009). Thus, the terminus of the Archaic period is equally as hard to define as its beginning because basic assemblage constituents and patterns of manufacturing investment remain stable, complemented only by the addition of the bow and ceramics.

Late Prehistoric Period (AD 500–1769)

The period of time following the Archaic and before Ethnohistoric times (AD 1769) is commonly referred to as the Late Prehistoric (Rogers 1945; Wallace 1955; Warren et al. 2004); however, several other subdivisions continue to be used to describe various shifts in assemblage composition. In general, this period is defined by the addition of arrow points and ceramics, as well as the widespread use of bedrock mortars. The fundamental Late Prehistoric assemblage is very similar to the Archaic pattern, but includes arrow points and large quantities of fine debitage from producing arrow points, ceramics, and cremations. The appearance of mortars and pestles is difficult to place in time because most mortars are on bedrock surfaces. Some argue that the Ethnohistoric intensive acorn economy extends as far back as AD 500 (Bean and Shipek 1978). However, there is no substantial evidence that reliance on acorns, and the accompanying use of mortars and pestles, occurred before AD 1400. Millingstones and handstones persisted in higher frequencies than mortars and pestles until the last 500 years (Basgall and Hall 1990); even then, weighing the economic significance of millingstone-handstone versus mortar-pestle technology is tenuous due to incomplete information on archaeological assemblages.

Ethnographic Overview

The history of the Native American communities prior to the mid-1700s largely relies on later mission-period and early ethnographic accounts. The first records of the Native American inhabitants of the region come predominantly from European merchants, missionaries, military personnel, and explorers. These brief, and generally peripheral, accounts were prepared with the intent of furthering respective colonial and economic aims, often combined with observations of the landscape. They were not intended to be unbiased accounts regarding the cultural structures and community practices of the newly encountered cultural groups. The establishment of the missions in the region brought more extensive documentation of Native American communities, though these groups did not become the focus of formal and in-depth ethnographic study until the early twentieth century (Bean and Shipek 1978; Boscana 1846; Geiger and Meighan 1976; Harrington 1934; Laylander 2000; Sparkman 1908; White 1963). The principal intent of these researchers was to record the precontact, culturally specific practices, ideologies, and languages that had survived the destabilizing effects of missionization and colonialism. This research, often understood as "salvage ethnography," was driven by the understanding that traditional knowledge was being lost due to the impacts of modernization and cultural assimilation. Alfred Kroeber applied his "memory culture" approach (Lightfoot 2005, p. 32) by recording languages and oral histories within the region. Ethnographic research by Dubois, Kroeber, Harrington, Spier, and others during the early twentieth century seemed to indicate that traditional cultural practices and beliefs survived among local Native American communities.

It is important to note that even though there were many informants for these early ethnographies who were able to provide information from personal experiences about native life before the Europeans, a significantly large proportion of these informants were born after 1850 (Heizer and Nissen 1973); therefore, the documentation of pre-contact, aboriginal culture was being increasingly supplied by individuals born in California after considerable contact with Europeans. As Robert F. Heizer (1978) stated, this is an important issue to note when examining these ethnographies, since considerable culture change had undoubtedly occurred by 1850 among the Native American survivors of California. This is also a particularly important consideration for studies focused on TCRs, where concepts of "cultural resource" and the importance of traditional cultural places are intended to be interpreted based on the values expressed by present-day Native American representatives and may vary from archaeological values (Giacinto 2012).

Based on ethnographic information, it is believed that at least 88 different languages were spoken from Baja California Sur to the southern Oregon state border at the time of Spanish contact (Johnson and Lorenz 2006, p. 34). The distribution of recorded Native American languages has been dispersed as a geographic mosaic across California through six primary language families (Golla 2007).

Victor Golla has contended that one can interpret the amount of variability within specific language groups as being associated with the relative "time depth" of the speaking populations (Golla 2007, p. 80). A large amount of variation within the language of a group represents a greater time depth then a group's language with less internal diversity. One method that he has employed is by drawing comparisons with historically documented changes in Germanic and Romantic language groups. Golla has observed that the "absolute chronology of the internal diversification within a language family" can be correlated with archaeological dates (2007, p. 71). This type of interpretation is modeled on concepts of genetic drift and gene flows that are associated with migration and population isolation in the biological sciences.

The tribes of this area have traditionally spoken Takic languages that may be assigned to the larger Uto–Aztecan family (Golla 2007, p. 74). These groups include the Gabrielino, Cahuilla, and Serrano. Golla has interpreted the amount of internal diversity within these language-speaking communities to reflect a time depth of approximately 2,000 years. Other researchers have contended that Takic may have diverged from Uto–Aztecan ca. 2600 BC–AD 1, which was later followed by the diversification within the Takic speaking tribes, occurring approximately 1500 BC–AD 1000 (Laylander 2010).

Gabrielino (Gabrieleño)/Tongva

The archaeological record indicates that the Gabrielino arrived in the Los Angeles Basin around 500 B.C. Surrounding native groups included the Chumash and Tataviam to the northwest, the Serrano and Cahuilla to the northeast, and the Juaneño and Luiseño to the southeast.

The names by which Native Americans identified themselves have, for the most part, been lost and replaced by those derived by the Spanish people administering the local Missions. These names were not necessarily representative of a specific ethnic or tribal group, and traditional tribal names are unknown in the post-Contact period. The name "Gabrielino" was first established by the Spanish from the San Gabriel Mission and included people from the established Gabrielino area as well as other social groups (Bean and Smith 1978; Kroeber 1925). Many modern Native Americans commonly referred to as Gabrielino identify themselves as descendants of the indigenous people living across the plains of the Los Angeles Basin and refer to themselves as the Tongva (King 1994). This term is used here in reference to the pre-Contact inhabitants of the Los Angeles Basin and their descendants.

The Tongva established large, permanent villages along rivers and streams, and lived in sheltered areas along the coast. Tongva lands included the greater Los Angeles Basin and three Channel Islands, San Clemente, San Nicolas, and Santa Catalina and stretched from the foothills of the San Gabriel Mountains to the Pacific Ocean. Tribal population has been estimated to be at least 5,000 (Bean and Smith 1978), but recent ethnohistoric work suggests a much larger population, approaching 10,000 (O'Neil 2002). Archaeological sites composed of villages with various sized structures have been identified through the Los Angeles Basin. Within the permanent village sites, the Tongva constructed large, circular, domed houses made of willow poles thatched with tule, each of which could hold upwards of 50 people (Bean and Smith 1978). Other structures constructed throughout the villages probably served as sweathouses, menstrual huts, ceremonial enclosures, and communal granaries.

The largest, and best documented, ethnographic Tongva village in the Gabrieleño territory was likely that of Yanga (also known as Yaangna, Janga, and Yabit), which was in the vicinity of the downtown Los Angeles (McCawley 1996: 56-57; NEA and King 2004). This village was reportedly first encountered by the Portola expedition in 1769. In 1771, Mission San Gabriel was established. Yanga provided a large number of the individuals to this mission; however, following the founding of the Pueblo of Los Angeles in 1781, opportunities for local paid work became increasingly common, which had the result of reducing the number of Native American neophytes from the immediately surrounding area (NEA and King 2004). Mission records indicate that 179 Gabrieleno inhabitants of Yanga became members of San Gabriel Mission (NEA and King 2004: 104). Based on this information, Yanga may have been the most populated village in the Western Gabrieleno territory. Second in size, and less thoroughly documented, the village of Cahuenga was located just north of the Cahuenga Pass.

The Tongva subsistence economy was centered on gathering and hunting. The surrounding environment was rich and varied, and the tribe exploited mountains, foothills, valleys, deserts, riparian, estuarine, and open and rocky coastal eco-niches. Like that of most native Californians, acorns were the staple food (an established industry by the time of the early Intermediate Period). Acorns were supplemented by the roots, leaves, seeds, and fruits of a wide variety of flora (e.g., islay, cactus, yucca, sages, and agave). Fresh water and saltwater fish, shellfish, birds, reptiles, and insects, as well as large and small mammals, were also consumed (Bean and Smith 1978:546; Kroeber 1925; McCawley 1996).

Tools and implements used by the Tongva to gather and collect food resources included the bow and arrow, traps, nets, blinds, throwing sticks and slings, spears, harpoons, and hooks. Trade between the mainland and the Channel Islands Groups was conducted using plank canoes as well as tule balsa canoes. These canoes were also used for general fishing and travel (McCawley 1996). The collected food resources were processed into food with hammerstones and anvils, mortars and pestles, manos and metates, strainers, leaching baskets and bowls, knives, bone saws, and wooden drying racks. Catalina Island steatite was used to make ollas and cooking vessels (Blackburn 1963; Kroeber 1925; McCawley 1996).

The Chinigchinich religion, centered on the last of a series of heroic mythological figures, was the basis of religious life at the time of Spanish contact. The Chinigchinich religion not only provided laws and institutions, but it also taught people how to dance, which was the primary religious act for this society. The Chinigchinich religion seems to have been relatively new when the Spanish arrived. It was spreading south into the Southern Takic groups even as Christian missions were being built. This religion may be the result of a mixture of native and Christian belief systems and practices (McCawley 1996).

Inhumation of deceased Tongva was the more common mortuary practice on the Channel Islands while neighboring mainland coast people most commonly performed cremation (Harrington 1942; McCawley 1996). Cremation ashes have been found buried within stone bowls and in shell dishes (Ashby and Winterbourne 1966), as well as scattered among broken ground stone implements (Cleland et al. 2007). Supporting this finding in the archaeological record, ethnographic descriptions have provided an elaborate mourning ceremony. Offerings varied with the sex and status of the deceased (Johnston 1962; McCawley 1996; Reid 1926). At the behest of the Spanish missionaries, cremation essentially ceased during the post-Contact period (McCawley 1996).

Fernandeño

Fernandeño speakers, a dialect of Gabrielino, occupied the northeastern most section of the larger Gabrielino territory. Fernandeño takes its name from the establishment of Mission San Fernando, located in the modern-day northcentral San Fernando Valley, because it was the dominant language of indigenous peoples housed at the Mission. Though the names Fernandeño and Gabrielino represent two groups of Tongva, these names resulted from Spanish colonization and are not necessarily representative of a specific ethnic or tribal group since traditional tribal names are unknown in the post-Contact period.

Tataviam

The Project area falls south of the ethnographic boundary of the Tataviam (Johnson and Earle 1990; King and Blackburn 1978; Kroeber 1925). Tataviam territories included the upper reaches of the Santa Clara River drainage east of Piru Creek, but also encompassed the Sawmill Mountains to the north and the southwestern portion of the Antelope Valley (King and Blackburn 1978). Tataviam territory is bounded by various branches of Chumash to the north and west (including the Ventureño to the west, and Castac and Emigdiano to the northwest), Kitanemuk to the northeast, Serrano to the east, and Gabrielino to the south (King and Blackburn 1978).

Ethnographic data (i.e., data acquired by means of observation and/or direct communication) on the Tataviam and their traditional lifeways are limited. Most of what is known today about the Tataviam comes in the form of ethnohistory (i.e., historical accounts developed through examination of historical records and oral histories) as presented by anthropologists Alfred L. Kroeber (1925, 1915) and John P. Harrington (1935). Their accounts are based largely on interviews conducted in the early 1900s with a Native American consultant named Juan José Fustero, a man who spoke Kitanemuk and claimed that his grandparents were born near the town of Newhall and spoke a language that is no longer extant (Bright 1975). Most of the subsequent works published on the Tatatviam (King and Blackburn 1978; Bright 1975; Hudson 1982), including discussions of their cultural and geographic affiliations, were based on the Kroeber and Harrington interviews with Fustero and several other Kitanemuk consultants. Other studies have analyzed Spanish mission baptismal, marriage, and burial registers in an attempt to better understand the distribution of historic village settlements and kinship ties between settlements (NEA and King 2004; Johnson 1978, 1997).

Early ethnologies referred to the Tataviam as Ataplili'ish (Kroeber 1915), but Kroeber found this name to be too general since it had already been used to describe other indigenous groups (namely the Gabrielino). Kroeber changed the term to Alliklik (1925), which was noted to be a Ventureño Chumash name for the group (although it is believed to be a derogatory term for the sound of the language), but offered almost no information concerning their native lifeways. One account of the Tataviam, provides a narrative that they held the river up from a point between Sespe and Piru, most of Piru Creek, Castac Creek, and probably Pastoria Creek across the mountains in the San Joaquin Valley drainage and adjacent to the Yokuts (Kroeber 1925: 613-614).

The Tataviam language is grouped in the Takic branch of the Uto-Aztecan language family along with neighboring languages and dialects such as Kitanemuk, Serrano (including Vanyume), Tongva, and the Cupan group of Luiseño, Juaneño (Ajachemem), Cahuilla, and Cupeño (Golla 2011; Sutton 1980). William Bright has suggested that Tataviam was actually a separate language with Takic affinities, or perhaps a "remnant, influenced by Takic, of a language family otherwise unknown in southern California" (Bright 1975: 230). However, the current and most widely accepted view is that Tataviam is in fact a Takic language (King and Blackburn 1978; Johnson and Earle 1990; Golla 2011; Sutton et al. 2007).

King and Blackburn (1978:536) noted several Tataviam settlements based on information provided by Harrington and other sources, including mission registers. Among these is the putative village of *tsawayung* (also referred to as *Chaguayabit, Chaguayanga, takuyama'm*), which some believe was located near Castaic Junction at the site of Rancho San Francisco. However, there is a lack of consensus – indeed, significant confusion – as to its exact location. Harrington's own notes reflect this confusion: "Jose Juan Olivas thinks it is over by San Francisquito [Rancho San Francisco] but does not know and never did know just where" (NEA and King 2004:119). Based on diary entries from the Portolá Expedition (Perkins 1957), some have hypothesized that Estancia San Francisco de Xavier (often incorrectly referred to as an asistencia) was placed at the location of the village of *tsawayang*, but this is based on descriptive diary entries and has never been confirmed by archaeological or other historic evidence. In fact, no physical evidence of the village has ever been found. Other Tataviam villages mapped outside of the project area include *tikatsing* located on upper Castaic Creek, and *pi'ing* located where Castaic Creek meets Elizabeth Lake Canyon. The village of *Tochonaga*, was recorded on an 1843 land grant map. This site appears to be located to the southeast of Newhall, but its precise location has also never been confirmed: "Tochononga was located in the mountains northwest of San Fernando…over by Los Alamos somewhere here in the Tejon Ranch" (NEA and King 2004:117). Other villages and seasonal camp sites identified by Harrington include *akure'eng*, which was located at the original Newhall townsite; *apatsitsing*, located on upper Castaic Creek; and *naqava'atang*, located east of Townsend Peak. Piru Creek also contained several village and rancheria sites, located on the northern edge of Tataviam territory (Johnson and Earle 1990).

Pedro Fage's account of the 1769 Portola expedition indicates that the first Chumash settlement encountered upon leaving Tataviam territory was located west of the mouth of Piru Creek. The village of *kamulus* (Camulos), located east of Piru Canyon, bears a Chumash name (Johnson and Earle 1990), leading to speculation that this village consisted of a mixed Chumash-Tataviam population. There has been much discussion regarding Chumash ties to areas generally accepted as Tataviam territory (see Beeler and Klar 1977).

More recent studies have examined additional Tataviam investigations conducted by Harrington with neighboring groups (Johnson and Earle 1990). These studies support the original Kroeber and Harrington findings that the Tataviam were a distinct group:

> The correspondence between (1) ancestral villages traced using genealogical evidence and (2) independently elicited information regarding Tataviam territoriality builds confidence in the reliability of the ethnographic record compiled by Kroeber and Harrington. The distinctiveness of the Tataviam as an ethnic entity, separate from the Kitanemuk and Fernandeño, is supported by our research (Johnson and Earle 1990:209).

In 1996, as the result of a Caltrans District 7 highway widening project for SR-126, archaeologists discovered and excavated 45 burials from CA-LAN-2233, a prehistoric village site dating from approximately 2000 to 1640 years before present (BP) and located within Tataviam territory. Examination of mitochondrial DNA (mtDNA) from five burials at CA-LAN-2233 found that these individuals were genetically linked to modern Uto-Aztecan speaking groups, such as the Tataviam (Miller, Lopez, and Walker 2003).

While mortuary customs are largely unknown, mortuary data from Tataviam territory indicates that inhumation is the most frequently observed pattern, with occasional instances of cremation (Sutton 2009).

Historic-Period Overview

The written history of the State of California is generally divided into three periods: the Spanish Period (1769–1821), Mexican Period (1821–1846), and American Period (1846–present). Although Spanish, Russian, and British explorers visited the area for brief periods between 1529 and 1769, the Spanish Period in California begins with the establishment in 1769 of a settlement at San Diego and the founding of Mission San Diego de Alcalá, the first of 21 missions constructed between 1769 and 1823. Independence from Spain in 1821 marks the beginning of the Mexican Period, and the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican–American War, signals the beginning of the American Period when California became a territory of the United States.

Spanish Period (1769–1821)

Spanish explorers made sailing expeditions along the coast of southern California between the mid-1500s and mid-1700s. In search of the legendary Northwest Passage, Juan Rodríquez Cabrîllo stopped in 1542 at present-day San Diego Bay. With his crew, Cabrîllo explored the shorelines of present Catalina Island as well as San Pedro and Santa Monica Bays. Much of the present California and Oregon coastline was mapped and recorded in the next half-century by Spanish naval officer Sebastián Vizcaíno. Vizcaíno's crew also landed on Santa Catalina Island and at San Pedro and

Santa Monica Bays, giving each location its long-standing name. The Spanish crown laid claim to California based on the surveys conducted by Cabríllo and Vizcaíno (Bancroft 1885; Gumprecht 1999).

More than 200 years passed before Spain began the colonization and inland exploration of Alta California. The 1769 overland expedition by Captain Gaspar de Portolá marks the beginning of California's Historic period, occurring just after the King of Spain installed the Franciscan Order to direct religious and colonization matters in assigned territories of the Americas. With a band of 64 soldiers, missionaries, Baja (lower) California Native Americans, and Mexican civilians, Portolá established the Presidio of San Diego, a fortified military outpost, as the first Spanish settlement in Alta California. In July of 1769, while Portolá was exploring southern California, Franciscan Fr. Junípero Serra founded Mission San Diego de Alcalá at Presidio Hill, the first of the 21 missions that would be established in Alta California by the Spanish and the Franciscan Order between 1769 and 1823.

The Portolá expedition first reached the present-day boundaries of Los Angeles in August 1769, thereby becoming the first Europeans to visit the area. Father Crespi named "the campsite by the river Nuestra Señora la Reina de los Angeles de la Porciúncula" or "Our Lady the Queen of the Angeles of the Porciúncula." Two years later, Friar Junípero Serra returned to the valley to establish a Catholic mission, the Mission San Gabriel Arcángel, on September 8, 1771 (Kyle 2002). In 1795, Father Fermin de Lasuén ordered a report to identify potential new mission sites. As a result, the Francisco Reyes Rancho was proposed as the site for the new Mission San Fernando Rey de España (Perkins 1957). The mission, founded in 1797, was ultimately located elsewhere; however, Mission San Fernando Rey de España acquired the headwaters of the Santa Clara River east from Piru and named the land Rancho San Francisco. Shortly thereafter, many of the local Tataviam people were removed from their homeland and relocated to the mission where many of their traditional lifeways were no longer feasible.

Mexican Period (1821–1846)

A major emphasis during the Spanish Period in California was the construction of missions and associated presidios to integrate the Native American population into Christianity and communal enterprise. Incentives were also provided to bring settlers to pueblos or towns, but just three pueblos were established during the Spanish Period, only two of which were successful and remain as California cities (San José and Los Angeles). Several factors kept growth within Alta California to a minimum, including the threat of foreign invasion, political dissatisfaction, and unrest among the indigenous population. After more than a decade of intermittent rebellion and warfare, New Spain (Mexico and the California territory) won independence from Spain in 1821. In 1822, the Mexican legislative body in California ended isolationist policies designed to protect the Spanish monopoly on trade, and decreed California ports open to foreign merchants (Dallas 1955).

Extensive land grants were established in the interior during the Mexican Period, in part to increase the population inland from the more settled coastal areas where the Spanish had first concentrated their colonization efforts. Among the land grants deeded within the future Los Angeles County was Ex Mission De San Fernando, granted by Governor Pio Pico to Eulogio F. de Celis in 1846. The secularization of the missions (enacted 1833) following Mexico's independence from Spain resulted in the subdivision of former mission lands and establishment of many additional ranchos.

During the supremacy of the ranchos (1834–1848), landowners largely focused on the cattle industry and devoted large tracts to grazing. Cattle hides became a primary southern California export, providing a commodity to trade for goods from the east and other areas in the United States and Mexico. The number of nonnative inhabitants increased during this period because of the influx of explorers, trappers, and ranchers associated with the land grants. The rising California population contributed to the introduction and rise of diseases foreign to the Native American population, who had no associated immunities.

American Period (1846–Present)

War in 1846 between Mexico and the United States precipitated the Battle of Chino, a clash between resident Californios and Americans in the San Bernardino area. The Mexican-American War ended with the Treaty of Guadalupe Hidalgo in 1848, ushering California into its American Period. The tenth article of the Treaty of Guadalupe Hidalgo addressed the status of the titles to private land grants in the territories that were acquired by the United States from the Mexican government. An excerpt of the response from the commissioners of the United States regarding the tenth article, signed on May 26, 1948, is provided here:

> …with full powers from their Government to make to the Mexican Republic suitable explanations in regard to the amendments which the Senate and Government of the said United States have made in the treaty of peace…The American Government by suppressing the Xth article of the treaty of Guadelupe did not in any way intend to annul the grants of lands made by Mexico in the ceded territories. ***Conformably to the law of the United States, legitimate titles to every description of property, personal and real, existing in the ceded territories are those which are legitimate titles under the Mexican law in California *** up to the 13th of May, 1846 *** [Baker 1914: 236]

Following the Treaty of Guadalupe Hidalgo and subsequently, the admission of California as a state in 1850 with the Compromise of 1850, which also designated Utah and New Mexico (with present-day Arizona) as U.S. Territories (Waugh 2003), the Congress of the United States established the Board of Land Commissioners, to determine which private lands granted by the Mexican government prior to the Treaty of Guadalupe Hidalgo, would be honored. The California Land Act of 1851 became law on March 3, 1851. The California Land Act of 1851 was comprised of a three-member Board of Land Commission, an entity responsible for determining the validity of prior Spanish and Mexican land grants (State Lands Commission 1982). Essentially, under this Act, private landowners or grantees of land granted by the Spanish and Mexican government had the burden of proving their claim of ownership by presenting their titles for confirmation before the Board of Land Commissioners (State Lands Commission 1982). Following the initial confirmation of a private land claim by the Board of Land Commissioners, the claims were subjected to appeals to the District Court and Supreme Court until the Board of Land Commissioners confirmation was either upheld or reversed (State Lands Commission 1982). In addition to this process, a survey of the land was to be performed at the expense of the claimant and once this step was completed, the claimant would petition the General Land Office for a final patent; however, given the time and expenses involved with seeing a claim through to the end, some claimants would be forced to sell the land (State Lands Commission 1982).

The California State Surveyor-General, James T. Stratton, documented the list of private land claims within California in his incomplete report for August 1, 1879, to August 1, 1880, titled "Report of Spanish or Mexican Grants in California." The California State Lands Commission took over the role of updating and completing the list following the shutdown of the Surveyor-General's office in August 1929. The format for the listing involves: county names in alphabetical order; the patented private land claim (ranchos); the name of the final patentee (claimant or confirmee); date of patent or date the rancho was confirmed; acreage; and the public land survey system area (Township, Range, and Meridian). Records held by the Bureau of Land Management (BLM), the final authority confirming ownership, were referenced to address conflicts with the list information (State Lands Commission 1982). Ultimately, a total of 71 patents recorded in Los Angeles County between 1858 and 1923 are associated with entries issued by the United States confirming the titles to the private land grants (State Lands Commission 1982: 49-58). The largest patented grant was the Ex-Mission San Fernando, which was granted to Eulogio F. de Celis on January 8, 1873 as number 410 on the Rancho Plat assigned by the BLM, and encompassed most of the present-day San Fernando Valley, comprising 116,858.46 acres (State Lands Commission 1982: 46). The present Project site falls within this land grant.

Horticulture and livestock, based primarily on cattle as the currency and staple of the rancho system, continued to dominate the southern California economy through the 1850s. The Gold Rush began in 1848, and with the influx of people seeking gold, cattle were no longer desired mainly for their hides but also as a source of meat and other goods. During the 1850s cattle boom, rancho vaqueros drove large herds from southern to northern California to feed that region's burgeoning mining and commercial boom. Cattle were at first driven along major trails or roads such as the Gila Trail or Southern Overland Trail, then were transported by trains when available. The cattle boom ended for southern California as neighbor states and territories drove herds to northern California at reduced prices. Operation of the huge ranchos became increasingly difficult, and droughts severely reduced their productivity (Cleland 2005).

Background Research

CHRIS Records Search

On March 8, 2022, Dudek completed an in-person CHRIS records search at the South Central Coastal Information Center (SCCIC), located on the campus of the California State University, Fullerton. The records search included any previously recorded cultural resources and investigations within a 0.5-mile (2,640-foot) radius of the Project site. The CHRIS search also included a review of the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the California Points of Historical Interest list, the California Historical Landmarks list, the Archaeological Determinations of Eligibility list, and the California State Historic Resources Inventory list. Dudek reviewed the SCCIC records to determine whether the implementation of the Project would have the potential to impact known and unknown cultural resources. The confidential records search results are provided in Confidential Attachment B.

Previously Conducted Cultural Resource Studies

Results of the CHRIS records search indicate that ten (10) previous cultural resources studies have been conducted within 0.5-mile of the Project site. These studies were conducted between 1988 and 2014. Of these investigations, one (1) study, LA-10756, overlaps the Project site. Report LA-10756 provides a broad overview of cultural resources within a large portion of the northeast San Fernando Valley. While the report does not specifically address the Project site, it does provide a sensitivity analysis for the presence of cultural resources within the North Hollywood community, and therefore, results of the study will be summarized below. Table 3 provides reference information for all 10 previous cultural resources studies within 0.5-mile of the Project site.

LA-10756

A Cultural Resources Overview and Preliminary Assessment of the Pacoima/Panorama City Redevelopment Plan Amendment/Expansion Project Area, Los Angeles County, California (McKenna 2010), documents the results of a cultural resources study prepared for a proposed redevelopment plan and expansion area within 8,479 acres of northeast San Fernando Valley. The current Project site falls within the study area Subarea 4, which encompasses areas south of Interstate-5 and east of the CA-170 Freeway including portions of the Arleta, Sun Valley, and North Hollywood communities. The cultural resources study provided an in-depth summary of the environmental and cultural settings of the northeast San Fernando Valley, a review of previously recorded cultural resources identified within the proposed study area, and a cultural resources sensitivity analysis within each community.

McKenna (2010) identified North Hollywood as an area sensitive for prehistoric and historic-age archaeological resources. In regard to prehistoric resources within the entirety of the study area, McKenna stated that the San Fernando Valley has a long record of prehistoric occupation. Previously recorded resources within the northeast portion of San Fernando Valley include twenty (20) prehistoric archaeological sites, three (3) of which involve burials, and two (2) isolated prehistoric artifacts. The majority of prehistoric use was noted in the Big Tujunga and Little Tujunga Canyon areas (located approximately 5 to 6 miles northeast of the current Project site, respectively), as well as the areas in and around the historic Mission San Fernando Rey de España (located approximately 6-miles northwest of the current Project site). Specific mention for historic-age archaeological sensitivity based on early development was given to the NoHo Arts District (located approximately 2-miles southeast of the current Project site) and areas surrounding the railroad alignment that is now named the Los Angeles County Metropolitan Transportation Authority/Amtrak/Union Pacific Railroad (located within 0.1-mile of the current Project site).

Table 3. Previously Conducted Cultural Resources Studies within a 0.5-Mile of the Project Site

SCCIC Report Number	Authors	Year	Title	Proximity to Project Site
LA-00160	Dames & Moore	1988	Phase 1 Cultural Resources Survey Fiber Optic Cable Project Burbank to Santa Barbara, California for US Sprint Communications Company	Outside
LA-02645	Peak and Associates, Inc.	1991	Class 3 Cultural Resources Assessment of the Proposed Carpinteria and Southern Reroutes, Santa Barbara, Ventura, and Los Angeles Counties, California	Outside
LA-02950	Peak and Associates, Inc.	1992	Consolidated Report: Cultural Resources Studies for the Proposed Pacific Pipeline Project	Outside
LA-06599	Foster, John M.	2002	Historic Resources Evaluation Report, Mason Avenue at-grade Crossing and Safety Improvements Project, Los Angeles City, California	Outside
LA-08254	McKenna, Jeanette A.	2004	Results of a Phase 1 Cultural Resources Investigation of the Proposed Los Angeles Department of Water and Power River Supply Conduit, Los Angeles County, California	Outside
LA-08255	Arrington, Cindy and Nancy Sikes	2006	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California: Volumes I and II	Outside

Table 3. Previously Conducted Cultural Resources Studies within a 0.5-Mile of the Project Site

SCCIC Report Number	Authors	Year	Title	Proximity to Project Site
LA-10756	McKenna, Jeanette A.	2010	A Cultural Resources Overview and Preliminary Assessment of the Pacoima/Panorama City Redevelopment Plan Amendment/Expansion Project Area, Los Angeles County, California	**Overlaps**
LA-11090	Laroque, Mark	2009	Lankershim #878088, 11620 Sherman Way, North Hollywood, Los Angeles, CA	Outside
LA-11969	Bonner, Wayne	2012	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate SV00319A (VY319 CHOW), 6829 Lankershim Boulevard, North Hollywood, Los Angeles County, California	Outside
LA-13028	Bonner, Diane F. and Carrie D. Wills	2014	Cultural Resources Records Search and Site Visit Results for AT&T Mobility, LLC Candidate CLV5420 (Codlkow Trust), 12100-12136 Sherman Way, North Hollywood, Los Angeles County, California, CASPR No. 3551699442	Outside

Previously Recorded Cultural Resources

The CHRIS records search indicates that one (1) cultural resource has been previously recorded within the Project site. This resource consists of the NRHP eligible San Fernando Valley Generating Plant (P-19-175325), also assigned California Historical Resources Inventory (HRI) number 097843. McAvoy (1994) recorded this built environment resource and evaluated the property for historical significance. The property is located at 11845 Vose Street, within the Lankershim Yard portion of the Project site, and consists of a 36-foot high industrial structure with Classical detailing. The front elevation includes applied letters reading ‘Bureau of Water Work and Supply.’ According to McAvoy, the San Fernando Valley Generating Plant played an important role in supplying water to the San Fernando Valley, allowing the Valley to prosper. McAvoy determined that P-19-175325 appears eligible for the NRHP under Criterion A for its association with the development of the City of Los Angeles’ water system and under Criterion C as an example of Classically inspired industrial architecture.

A desktop survey of aerial images (see below section *Historical Aerial Photographs*) indicates that the San Fernando Valley Generating Plant has been razed since its initial recording in 1994. There are currently no extant buildings within the Lankershim Yard property that retain the characteristics of P-19-175325. The NRHP eligible built environment resource has been demolished. The foundation for P-19-175325 remained after the demolition of the aboveground structure. However, this foundation was recently wholly or partially removed as part of the construction of the NHOU2IR facilities at Lankershim Yard. The extent to which the P-19-175325 belowground structures remain could not be verified through either documentary evidence or site surveys.

One (1) additional built environment resource has been previously recorded within the 0.5-mile records search area. This resource (P-19-190097) consists of a 1960s commercial building found ineligible for the NRHP.

No previously recorded historic-age archaeological resources are within 0.5-mile of the Project site. Additionally, no prehistoric sites or resources documented to be of specific Native American origin have been previously recorded within the records search area of the Project site. Table 4, below, provides a summary of all previously recorded cultural resources within the records search area.

Table 4. Previously Recorded Cultural Resources Within a 0.5-Mile Radius of the Project Site

Primary (P-19-)	Trinomial (CA-SBR-)	Resource Age and Type	Resource Description	Recording Events	NRHP Eligibility	Proximity to Project Site
175325	—	Built Environment: Building	11845 Vose Street: San Fernando Valley Generating Plant constructed 1924.	1994 (McAvoy, C.J.)	3S: Appears eligible for NRHP through survey evaluation; HRI No. 097843 Aboveground structure and at least portions of belowground structures have been demolished since recording event.	**Within**
190097	—	Built Environment: Building	6829 Lankershim Blvd.: Modern style commercial office building constructed circa 1962.	2012 (Crawford, K.A.)	6Z: Found ineligible for NRHP through survey evaluation	Outside

Review of Historical Maps and Aerial Photographs

Dudek consulted Sanborn Map Company fire insurance maps (Sanborns), historical topographic maps, and historical aerial photographs to understand the development of the Project site and surrounding area.

Sanborn Fire Insurance Maps

A review of Sanborn maps covering the City of Los Angeles was conducted as part of the archival research effort for the Project from the following years: 1888, 1894-1900, and 1906-1955. The Project site does not fall within the mapped area of the City in any of the editions (Sanborn Map Company 1950).

Historical Topographic Maps

A review of historical topographic maps was conducted as part of the archival research effort from the following years: 1894, 1896, 1898, 1900, 1902, 1904, 1906, 1908, 1910, 1913, 1915, 1921, 1926, 1932, 1933, 1941, 1948, 1949, 1955, 1960, 1968, 1975, 1980, 1987, 2012, 2015, and 2018 (NETR 2022a). It should be noted that while topographic maps are informative, they do not show the minute changes to a landscape overtime, and at times are inconsistent with what is depicted year to year. Nonetheless, the information gathered contributes to the understanding of the chronological development of a project site.

The first USGS topographic map to depict the Project site dates to 1894 and shows the Project site within the predominantly undeveloped Rancho Ex-Mission San Fernando land grant. The Project site is situated between Pacoima Wash to the west and Tujunga Wash to the east. A smaller unnamed waterway running southeast is mapped approximately 0.2-mile east of the Project site. The Project site is on the western edge of a modest grid established between the more northern Southern Pacific Railroad and its southern Chatsworth Park Branch alignment. There are no structures within or in the vicinity of the Project site. The nearest development is a north/south trending unnamed road that appears to be the present-day Lankershim Boulevard.

The map was next updated in 1921 and depicts an infilling of the San Fernando Valley grid. The Project site is now within a block of unnamed streets within a community labeled 'Hewitt.' A handful of structures are infilling around the Project site, though the Project site remains vacant. A third line of the Southern Pacific Railroad, the present-day Amtrak/Union Pacific Railroad, is adjacent to the Project site.

The 1926 map provides a more accurate representation of the geographical setting and developmental features within and surrounding the Project site. Most notably, the Tujunga Wash previously depicted east of the Project site is now situated to the west. Southern California Edison Power Lines are within a corridor just east of the Project site. The grid surrounding the Project site has continued to expand with most of the prominent streets encompassing the Project site now depicted. Vose Street is visible south of the present-day Lankershim Yard property. Though this portion of the Project site remains vacant, numerous structures flank the property to the south, east, and west. The more southern NHC Chlorination Station portion of the Project site is within a vacant block.

The 1948 map depicts the next updates to the Project site and surrounding area. Two (2) structures are either within or directly adjacent to the RT Chlorination Station portion of the Project site. The scale of the map makes discerning the exact location of the structures difficult. Though no structures are depicted within the NHC Chlorination Station portion of the Project site, a reservoir is depicted in the southern portion of the block.

The remaining maps are general representations of streets and infrastructure and do not depict individual structures. As such, there were no discernable updates to the Project site or surrounding area on the remaining available maps.

Historical Aerial Photographs

A review of historical aerial photographs was conducted as part of the archival research effort from the following years: 1952, 1953, 1954, 1964, 1972, 1978, 1980, 1985, 1989, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2003, 2004, 2005, 2009, 2010, 2012, 2014, 2016, and 2018. The results of this review identified numerous structures within the Project site that are 50 years old or greater. The two structures that remain extant are considered built environment resources. The current condition of each identified structure is as follows:

Within RT Chlorination Station Lankershim Yard

- 11845 Vose Street: San Fernando Valley Generating Plant (P-19-175325) (see section *Previously Recorded Cultural Resources* above for further details) constructed in 1924 and demolished by 2003.
- No address: rectangular building along eastern perimeter of yard constructed prior to 1964. Structure is extant. It is important to note that the structure is being adapted for use by the NHOU2IR project currently under construction. Current Project design does not involve any impact to this extant structure.

Within NHC Chlorination Station

- 6860, 6862, 6864, 6866, and 6868 Hinds Avenue: multi-family property constructed 1948 and demolished by 2016. Land has been cleared and graded.
- 6859, 6861, and 6863 Morella Avenue: multi-family property constructed 1948. Property is extant and slated for demolition as part of a separate project that is currently under construction and is not part of the current Project.

Table 5, below, discusses the development within the Project site (Google 2022; NETR 2022b; ZIMAS 2022). Only the years that aerial photographs depict changes to the Project site and surrounding area are discussed within the table.

Table 5. Historical Aerial Photograph Review of the Project Site

Photograph Year	Observations and Findings
1952	The Project site is within a highly developed portion of the San Fernando Valley where industrial and residential communities converge. The RT Chlorination Station portion of the Project site within Lankershim Yard is surrounded by manufacturing and industrial properties. At least two buildings are within the southern half of the site. The more southernly building along Vose Street is the aforementioned previously recorded and NRHP eligible built environment resource P-19-175325 (see section *Previously Recorded Cultural Resources* above). The northern half of Lankershim Yard is vacant and undeveloped (NETR 2022b). The NHC Chlorination Station portion of the Project site is within a developed block surrounded by a residential neighborhood. Two multi-family properties occupy the Project site. The four and five-unit apartment buildings were built in 1948 and comprise the following addresses: 6860, 6862, 6864, 6866, and 6868 Hinds Avenue (western property) and 6859, 6861, and 6863 Morella Avenue (eastern property) (ZIMAS 2022).

Table 5. Historical Aerial Photograph Review of the Project Site

Photograph Year	Observations and Findings
1964	Changes within the Project site next appeared on the 1964 aerial photograph. The more northern building within the Lankershim Yard has been removed and replaced with what is the present-day rectangular building. There were no discernable changes to resource P-19-175325 nor was there any development within the northern extent of Lankershim Yard (NETR 2022b). There were no changes within the NHC Chlorination Station portion of the Project site (NETR 2022b).
1972	The previously vacant northern portion of Lankershim Yard is utilized as a staging yard for trailers and/or machinery. There are no additional changes to the Project site (NETR 2022b).
1992	The northern portion of Lankershim Yard appears paved and pump infrastructure is visible. There are no additional changes to the Project site (NETR 2022b).
2003	The NRHP eligible San Fernando Valley Generating Plant (P-19-175325) within the Lankershim Yard has been demolished. The concrete slab foundation is all the remains. There are no additional changes to the Project site at this time (NETR 2022b).
2016	The multi-family property at the corner of Hinds Avenue and Dehougne Street (6860, 6862, 6864, 6866, and 6868 Hinds Avenue) has been demolished. The western half of the NHC Chlorination Station Project site is now vacant undeveloped land. There have been no changes to the property at 6859, 6861, and 6863 Morella Avenue, and no changes to the RT Chlorination Station portion of the Project site (NETR 2022b).
2018	There were no significant changes to the Project site through 2018.
2020	Construction activity, including clearing and grading, is visible in the central portion of the NHPS property. Temporary construction trailers have been installed on the western half of the NHC Chlorination Station Project site (Google 2022). Construction activity, including clearing, grading, and the installation of infrastructure, is visible on the northern portion and southeast corner of Lankershim Yard (Google 2022).
2021	Extensive construction of new facilities is visible throughout the central portion of the NHPS property (Google 2022). Extensive construction of new facilities is visible throughout the majority of Lankershim Yard, excluding the RT Chlorination Station site. The remnant concrete foundation slab from the previously demolished San Fernando Generating Plant (P-19-175325) located at 11845 Vose Street, has been demolished and replaced with new facilities. (The extent of removal of belowground structures associated with P-19-175325 cannot be ascertained for aerial imagery.) (Google 2022).

1860-1937 Kirkman-Harriman Historical Map

Dudek cultural resources specialists reviewed pertinent academic and ethnographic literature for information pertaining to past Native American use of the Project site and immediate vicinity. This review included consideration of sources commonly identified through consultation, notably the 1860-1937 Kirkman-Harriman Historical Map (Attachment A, Figure 4). It should be noted, however, that the Kirkman-Harriman map is highly generalized due to scale and age, and may be somewhat inaccurate with regard to distance and location of mapped features. Additionally, this map was prepared based on review of historic documents and notes more than 100 years following secularization of the missions (in 1833). Although the map contains no specific primary references, it matches with the details documented by the Portola expedition (circa 1769-1770). While the map is a valuable representation of post-mission history, substantiation of the specific location and uses of the represented individual features would require review of archaeological or other primary documentation on a case-by-case basis.

Based on the Kirkman-Harriman map, the Project site is situated adjacent to a stretch of the Little Tujunga wash and approximately 3-miles north of the meandering Los Angeles River. In general, hydrography and waterways of this type could provide for seasonal or permanent hamlets, trade depots, and ceremonial religious sites, though there is no specific landscape-focused documentation correlating the historical washes with specific patterns of prehistoric use. The historical route of the Los Angeles River overlaps and parallels the Spanish road of El Camino Real, nearly 3 miles south of the Project site. According to the map, the Portolá Route, symbolized as a red dashed line, is depicted as traveling just south of and parallel to El Camino Real. This is consistent with the account of Father Juan Crespi, a member of the Portolá expedition, who documents having passed southeast through the Cahuenga Pass on January 16, 1770. The Project site is within 0.1-mile of a Mission Road, of which the northwest terminus ends at the San Fernando Mission[1], mapped approximately 7-miles northwest of the Project site and numbered as site "7" on the map. At the southern terminus of the Mission Road, approximately 3-miles southeast of the Project site, is a church dated 1805. Also depicted is a battlefield site dated 'Dec. 5 1831[2]' mapped approximately 2-miles southwest of the Project site and numbered as site "15" on the map. Native American village sites, symbolized as a red structure, are surrounding San Fernando Valley within the foothills of the Transverse Ranges, though no Native American villages are depicted on the map in the immediate vicinity of the Project site. The map depicts an unnamed village site located approximately 5-miles to the southeast near Griffith Park as the closest village site to the Project. However, the village of *Cabuepet* (or more commonly spelled *Cahuenga*), which is not included on the Kirkman-Harriman map, is nearer to the Project site.

The village of Cahuenga is thought to be located near the northern opening of the Cahuenga Pass. There is evidence that the village of Cahuenga was one of the most populated prehistoric habitation areas in the area. It was likely located approximately 4-miles southeast of the Project site near present-day Universal Studios. San Gabriel Mission and San Fernando Mission records indicate that 123 Native American neophytes came from this village, second only to the number of individuals from the village of Yanga in the Western Gabrieleño territory (NEA and King 2004). Campo de Cahuenga was also in this vicinity, which is the site where the 1847 treaty between General Andres Pico and Lieutenant-Colonel John C. Fremont marked the surrender of Mexican California to the United States (Westec 1983). In general, the mapped position of Cahuenga has been substantiated through archaeological evidence, although the archaeological record has been substantially compromised by rapid and early urbanization throughout much of the region.

[1] Founded in 1797

[2] Battle of Cahuenga, Dec[ember] 15, 1831, between Mexican Governor Victoria and California rebels.

Native American Correspondence

NAHC SLF Coordination

As part of the process of identifying cultural resources within or near the Project, LADWP requested a search of the SLF maintained by the NAHC. Andrew Green, NAHC Cultural Resources Analyst, provided the results to LADWP on February 11, 2022. The NAHC SLF search result was positive. The NAHC identified ten (10) Native American individuals who could potentially have specific and unreported knowledge of Native American cultural resources within the Project site. Documents related to the NAHC SLF search are included in Attachment C.

It should be noted that Sacred Land Files maintained by the NAHC represent a curation of “ancient places of special religious or social significance to Native Americans and known ancient graves and cemeteries of Native Americans on private and public lands in California” (NAHC 2021) provided by Tribal entities and Native American representatives. For various reasons, Tribal entities and Native American representatives do no not always report sacred lands or tribal cultural resources (TCRs) to the NAHC; as such, the NAHC’s SLF is not necessarily a comprehensive list of known TCRs, and searches of the SLF must be considered in concert with other research and not used as a sole source of information regarding the presence of TCRs. Additionally, results of the SLF provided relate to the general regional area within and surrounding the Project site and do not necessarily equate to the existence of resources within the specific area occupied by the Project site.

Assembly Bill 52

The proposed Project is subject to compliance with AB 52 (PRC 21074), which requires consideration of impacts to TCRs as part of the CEQA process, and that the lead agency notify California Native American Tribal representatives that have requested notification who are traditionally or culturally affiliated with the geographic area of the proposed Project site. In compliance with AB 52, LADWP has contacted all NAHC-listed traditionally geographically affiliated tribal representatives that have requested project notification. All records of correspondence related to AB 52 notification and any subsequent consultation are on file with LADWP.

Summary of Findings

The North Hollywood Chlorination Stations Project proposes to expand the treatment capacity of the NHW and RT Chlorination Stations and replace and expand the capacity of the NHC Chlorination Station within the North Hollywood community of Los Angeles, California. (This report does not address NHW Chlorination Station because Project work at NHW does not include any ground disturbance and would only modify an existing facility constructed in 2014.) Excavation would be conducted at each site in the area of the new facilities. The anticipated depth of ground disturbance associated with construction activities within both the RT Chlorination Station and NHC Chlorination Station portions of the Project site is between 5 to 9 feet below the existing ground surface.

The geotechnical reports prepared for the RT Chlorination Station portion of the Project site identified a 3-4 inch cap of asphalt concrete underlain by natural alluvial soils within all 10 borings, the deepest of which extended to 51.5 feet bgs (DYA 2021a). The geotechnical reports prepared for the NHC Chlorination Station portion of the Project site identified natural alluvial soils from the surface within all four (4) borings. Borings were completed to a maximum depth of 50.3 feet bgs. Concrete, brick, and organics were identified in two (2) of the borings (DYB21-01 and DYP21-01) from surface to a maximum depth of 18 feet bgs. Both of these borings occurred in the northwest corner of the Project site where a multi-family residential property was demolished in the 2000s, suggesting that demolition debris may have infiltrated the borings. According to the USGS mineral resources data, the entire Project site is underlain by alluvium dating from the Pleistocene to the Holocene epochs (USGS 2022). Alluvium from these epochs does have the potential to preserve cultural material in context.

The CHRIS records search identified one (1) previously conducted cultural resources study (LA-10756) that overlaps the Project site. In this study, McKenna (2010) provided an overview of known cultural resources within the northeast portion of the San Fernando Valley as well as the potential for specific communities within the Valley to contain cultural resources. McKenna identified North Hollywood as an area sensitive for prehistoric and historic-age archaeological resources based upon the San Fernando Valley's long record of prehistoric occupation and, more specific to the Project site, the presence of historic-age sites surrounding railroad alignments.

The CHRIS records search identified one (1) previously recorded cultural resource within the Project site. This built environment resource (P-19-175235) consists of the San Fernando Valley Generating Plant located at 11845 Vose Street within the RT Chlorination Station portion of the Project site. McAvoy (1994) determined that this building, constructed in 1924, appeared eligible for the NRHP, and was therefore considered a historic property. A desktop survey of aerial images confirmed that the aboveground structure for this resource was demolished sometime before 2003, though the concrete slab foundation still remained. Ongoing excavation and construction activity, including underground infrastructure, associated with the NHOU2IR facilities has recently removed some or all of the remaining foundation structure, but the extent of the removal cannot be verified. However, the construction of the RT Chlorination Station does not include this area of Lankershim Yard.

The CHRIS records search did not identify any previously recorded historic-age archaeological resources or resources of Native American origin within 0.5-mile of the Project site. Only one (1) additional resource, a 1960s commercial building, was identified within the 0.5-mile records search radius.

The review of historical topographic maps and aerial photographs suggest that development within the San Fernando Valley, specifically in the vicinity of the Project site, began in earnest in the early twentieth century, at which time the present-day Amtrak/Union Pacific Railroad alignment that is adjacent to the RT Chlorination Station was constructed. The aerial photograph review identified one extant structure in Lankershim Yard that was 50 years old or greater. The currently extant rectangular building (constructed in the early 1960s) is being adapted for use by the NHOU2IR project currently under construction. However, the construction of the RT Chlorination Station does not include this area of Lankershim Yard.

The western part of the NHC Chlorination Station portion of the Project site was formerly occupied by two multi-family residences constructed in 1948. The property at 6860, 6862, 6864, 6866, and 6868 Hinds Avenue was razed sometime between 2003 and 2016, and is therefore not considered a built environment resource. The eastern property at 6859, 6861, and 6863 Morella Avenue is currently extant though slated for demolition as part of a separate project currently under construction at the NHPS property and is not part of the current Project.

The review of the Kirkman-Harriman map places the Project site near the Mission Road that connected the San Fernando Mission in the northeast with the Spanish road of El Camino Real near the confluence of Tujunga Wash and the Los Angeles River. However, the map is highly generalized and distances between mapped features may vary significantly. Though not depicted on the map, the Native American village of Cahuenga was likely located approximately 4-miles southeast of the Project site near the southern terminus of this Mission Road.

The NAHC search of the SLF was returned with positive results. The NAHC provided a list of ten (10) Native American individuals who may have information regarding Native American heritage resources within the Project site. Dudek has not initiated contact with these individuals. However, in compliance with AB 52, LADWP has contacted all NAHC-listed traditionally geographically affiliated tribal representatives that have requested project notification.

Sensitivity Analysis

Historic Built Environment Resources

Although there exist two (2) extant structures within the Project site that are 50 years old or greater, including the multi-family property at 6859, 6861, and 6863 Morella Avenue constructed in 1948 and the rectangular structure within the RT Chlorination Station constructed in 1964, current Project design does not involve any impacts to extant structures. Therefore, the Project would not cause a substantial adverse change to the significance of a historical resource, specifically historic built environment resources.

Archaeological Resources

Although no previously recorded archaeological resources were identified within or surrounding the Project site as a result of the CHRIS records search, the preliminary cultural resources assessment revealed that there is a potential for unknown historic-age buried archaeological resources to exist within the Project site based on the following factors: 1) the geotechnical reports provided by DYA (2021a; 2021b) noted concrete and brick in two borings (DYB21-01 and DYP21-01) to depths of 18 feet bgs, which suggests the potential for historic-era resources related to earlier development within the NHC Chlorination Station site; however, both of these borings occurred in the northwest corner of the Project site where a multi-family residential property (constructed in 1948) was demolished in the 2000s, suggesting that demolition debris may have infiltrated the borings; and 2) the Amtrak/Union Pacific Railroad (constructed in the early 1900s) abuts the Project site, and according to McKenna (2010), within the San Fernando Valley, areas surrounding railroad alignments are sensitive for the presence of historic-age archaeological deposits; however, Lankershim Yard has been extensively disturbed by past use, and the area of ground disturbance associated with the RT Chlorination Station site is relatively small (1,000 square feet) and approximately 500 feet from the railroad.

In addition, the preliminary cultural resources assessment revealed that there is a potential for unrecorded prehistoric buried archaeological resources to exist within the Project site based on the following factors: 1) the previous cultural resources study conducted by McKenna (2010) classified North Hollywood as sensitive for prehistoric resources; however, while the Project is within a geographic area that has experienced past Native American activity, it is also located within a highly urbanized area that has been extensively disturbed and developed over time; 2) although the NAHC SLF search was positive, the CHRIS records search did not identify prehistoric archaeological sites, sites of Native American origin, nor isolated burials or cremations either directly within or within 0.5-miles of the Project site; moreover, as previously mentioned, the SLF provided relate to the general regional area within and surrounding the Project site and do not necessarily equate to the existence of resources within the specific area occupied by the Project site; 3) the review of the Kirkman-Harriman map shows that waterways existed around the Project site, which have the potential to support prehistoric occupation; however, the map appears to be highly generalized, and therefore, the distance of the waterways in relation to the Project site may vary significantly; and 4) through Project-level analysis, no Native American villages are known to have existed in the immediate vicinity of the Project site.

Recommendations

Archaeological Resources and Human Remains

The following recommendations have been developed to ensure that any buried archaeological resources inadvertently discovered during excavation and other ground disturbing activity related to project construction will be treated appropriately and in accordance with CEQA regulations: preconstruction training, retention of an on-call archaeologist to address inadvertent discoveries, and inadvertent discovery clause implemented and included on all construction plans. With the proper implementation of the prescribed recommendations, the potential impact to archaeological resources and human remains is considered to be less then significant.

Inadvertent Discovery of Archaeological Resources

All field supervisors and all construction workers shall participate in training on cultural resources awareness prior to the initiation of construction on project sites that involve ground- disturbing activities. The training shall include a description of the types of cultural resources (including tribal cultural resources and human remains) that could inadvertently be encountered during ground-disturbing activities, the sensitivity of the resources, the legal basis for protection of the resources, and the penalties for unauthorized collection of or knowingly damaging the resources. The training shall address the proper procedures in the event of an inadvertent discovery of a cultural resource, including the immediate halting of work in the area of the discovery, notification of appropriate individuals of the discovery, the establishment of appropriate protective buffer zones around the discovery, and the continued avoidance of the protected area until the resource has been evaluated by qualified individuals and an appropriate treatment plan has been developed and implemented. These procedures shall be documented in a cultural resources monitoring and mitigation plan (CRMMP) that shall establish, in the event of inadvertent discovery of cultural resources, monitoring procedures (including potential Native American monitors), notification procedures, key staff, and preliminary treatment measures for potential discoveries. The CRMMP shall be written to ensure compliance with appropriate state and federal laws. The training presentation and CRMMP shall be available to additional supervisory or construction personnel who may join after project construction has begun.

In the event of an inadvertent discovery of archaeological resources during construction activities, the proposed Project would be subject to California Public Resources Code (PRC) Section 21083.2(i) regarding provisions related to the accidental discovery of archaeological resources. These provisions include immediately halting construction work in the vicinity of the find (within a 50-foot buffer), and LADWP retaining a qualified archaeologist meeting Secretary of Interior standards to evaluate the significance of and determine appropriate treatment for the resource in accordance with the provisions of CEQA Guidelines Section 15064.5 and the National Historic Preservation Act. If the resource is determined to be potentially of Native American in origin, Mitigation Measure (MM) TCR-1 would be required to mitigate potential impacts to a less than significant level (see below). If the archaeological resource is determined to be non-Native American in origin and is determined to be potentially significant, a treatment or avoidance plan shall be developed within 48-hours of the discovery. Work in the area may not resume until evaluation and treatment of the resource is completed or the resource is recovered and removed from the site. Construction activities may continue on other parts of the construction site while the evaluation and treatment of archaeological resources take place. For non-Native American archaeological resources, compliance with PRC Section 21083.2(i) as well as the implementation of the Cultural Resources Awareness Training described above, would ensure that the impact would be less than significant.

Inadvertent Discovery of Human Remains

Although not expected to occur, in the event that human remains are discovered, the remains would be treated in accordance with all applicable regulations. In accordance with the provisions of the California Health and Safety Code Section 7050.5, in the event that human remains are discovered during project construction, no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains would occur, and the Los Angeles County Coroner would be notified. The coroner would provide recommendations concerning the human remains, as well as confirming if the remains are Native American in origin, within two working days. If the remains and/or related resources, such as funerary objects, are determined to be of Native American origin, the coroner would contact the Native American Heritage Commission within 24 hours. In accordance with California Public Resources Code Section 5097.98, the Native American Heritage Commission would immediately notify the person it believes to be most likely descended from the deceased Native American. The most likely descendent would be given access to the site where the remains were discovered and may make recommendations for the treatment and disposition of the remains and related resources, as well as provide input regarding the potential for other remains to be present. Work at the discovery site may commence only after consultation with the most likely descendent and treatment of the remains and any associated resources have been concluded. Work may continue on other parts of the project site that do not have potential to contain additional human remains and/or related funerary items, while consultation and treatment are conducted. Compliance with these existing regulations as well as the implementation of the Cultural Resources Awareness Training described above, would ensure that the impact to human remains, including Native American remains, would be less than significant.

Tribal Cultural Resources

Inadvertent Discovery of Tribal Cultural Resources

MM-TCR-1: In the event that an archaeological resource inadvertently discovered during Project construction is determined to be potentially of Native American origin based on the initial assessment of the find by a qualified archaeologist pursuant to California Public Resources Code (PRC) Section 21083.2(i), the Native American tribes that consulted on the proposed Project pursuant to California Assembly Bill 52 shall be notified and be provided information about the find to allow for early input from the tribal representatives with regards to the potential significance and treatment of the resource.

If, as a result of the resource evaluation and tribal consultation process, the resource is considered to be a tribal cultural resource determined, in accordance with California PRC Section 21074, to be eligible for inclusion in the California Register of Historic Resources or a local register of historical resources or determined to be significant by LADWP (the CEQA lead agency), the qualified archaeologist shall monitor all remaining ground-disturbing activities in the area of the resource, and a tribal monitor from a consulting Native American tribe shall be invited to monitor the ground-disturbing activities. All monitoring performed shall be compensated. The tribal monitor shall be ancestrally affiliated with the project area and qualified by their tribe to monitor tribal cultural resources.

The input of all consulting tribes shall be taken into account in the preparation of any required treatment plan for the resources prepared by the qualified archaeologist. Work in the area of the discovery may not resume until evaluation and treatment of the resource is completed and/or the resource is recovered and removed from the site. Construction activities may continue on other parts of the construction site while evaluation and treatment of the resource takes place.

If you have any questions about this report, please contact me at lkry@dudek.com or Adam Giacinto at agiacinto@dudek.com.

Sincerely,

Linda Kry, BA, RA
Archaeologist
DUDEK

Adam Giacinto, MA, RPA
Archaeologist
DUDEK

Adriane Gusick, BA
Archaeologist
DUDEK

cc: Micah Hale, Dudek
Rachel Struglia, Dudek

Att: Attachment A: Figures
Attachment B: (Confidential) CHRIS Records Search Results
Attachment C: NAHC SLF Search Results

References

Ashby, G. E., and J. W. Winterbourne. 1966. A Study of Primitive Man in Orange County and Some of its Coastal Areas. *Pacific Coast Archaeological Society Quarterly* 2(1):3-52.

Baker, Charles C. 1914. *Annual Publication of the Historical Society of Southern California*, 1914, Vol. 9, No. 3 (1914), pp. 236-243. Published by: University of California Press on behalf of the Historical Society of Southern California.

Bancroft, Hubert H. 1885. *History of California, Volume III: 1825-1840*. San Francisco, CA: A.L. Bancroft & Co.

Basgall, M. E., and M. Hall. 1990. Adaptive Variation in the North-Central Mojave Desert. Paper Presented at the 55th Annual Meeting of the Society for American Archaeology, Las Vegas.

Basgall, M. E., L. Johnson, and M. Hale. 2002. "An Evaluation of Four Archaeological Sites in the Lead Mountain Training Area, Marine Corps Air Ground Combat Center, Twentynine Palms, California." Submitted to U.S. Army Corps of Engineers, Fort Worth, Texas.

Bean, Lowell, J., and Florence C. Shipek, 1978. "Luiseño," in California, Robert F. Hazier (ed.), pp. 550-563, Handbook of North American Indians, Vol. 8, W.C. Sturtevant (general editor), Smithsonian Institution, Washington, D.C.

Bean, Lowell J., and Charles R. Smith. 1978. Gabrielino. In *California,* edited by Robert F. Heizer, pp. 538–549. Handbook of North American Indians, Vol. 8, William G. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Beeler, Madison S. and Katherine A. Klar. 1977. "Interior Chumash." *The Journal of California Anthropology.* 4(2):287-305.

Blackburn, Thomas. 1963. *Ethnohistoric Descriptions of Gabrielino Material Culture*. Annual Report, Archaeological Survey. University of California, Los Angeles.

Boscana, G. 1846. "Chinigchinich; A Historical Account of the Origin, Customs, and Traditions of the Indians at the Missionary Establishment of St. Juan Capistrano, Alta California." In Life in California, by Alfred Robinson, 227–341. New York, New York: Wiley & Putnam.

Bright, William. 1975. "The Alliklik mystery." *Journal of California Anthropology* 2: 228-236.

Byrd, Brian F., and Seetha N. Reddy, 2002. Late Holocene Adaptations along the Northern San Diego Coastline: New Perspectives on Old Paradigms. In *Catalysts to Complexity: Late Holocene Societies of the California Coast*, edited by Jon M. Erlandson and Terry L. Jones, pp. 41-62. Cotsen Institute of Archaeology, University of California, Los Angeles.

City of Los Angeles. 2001. City of Los Angeles General Plan Conservation Element. Section 3. Accessed May 2022.

Cleland, Robert G. 2005. *The cattle on a thousand hills: Southern California, 1850-80*. San Marino, CA: The Huntington Library.

Cleland, James H., Andrew L. York, and Lorraine M. Willey. 2007. *Piecing Together the Prehistory of Landing Hill: A Place Remembered.* EDAW Cultural Publications No. 3. EDAW, Inc., San Diego.

Dallas, Sherman F. 1955. "The hide and tallow trade in Alta California, 1822-1846." PhD dissertation, History, University of Indiana.

Davis, Emma Lou. 1978. *The ancient Californians: Rancholabrean hunters of the Mojave Lakes country.* Natural History Museum of Los Angeles County Science Series No. 29.

Diaz Yourman & Associates (DYA). 2021a. Geotechnical Report, Rinaldi Toluca OSHG Station Upgrades, Los Angeles, California. Prepared for Hazen and Sawyer. On file at LADWP.

DYA. 2021b. Geotechnical Report, North Hollywood Central Chlorination Station Replacement, 6838 Hinds Avenue, North Hollywood, California. Prepared for Hazen and Sawyer. On file at LADWP.

Gallegos, D.R. 1987. “San Dieguito-La Jolla: Chronology and Controversy.” San Diego County Archaeological Society, Research Paper No. 1.

Geiger, M., and C. W. Meighan. 1976. As the Padres Saw Them: California Indian Life and Customs as Reported by the Franciscan Missionaries, 1813-1815. Santa Barbara, California: Santa Barbara Mission Archive Library.

Geo-Advantec, Inc. (GAI). 2020. Geotechnical and Geohazard Investigation Report, Project: San Fernando Groundwater Basin Remediation, North Hollywood Central Treatment Facility, 6824 Hinds Avenue, Los Angeles, California 91605. Prepared for Kiewit Infrastructure West Co. On file at LADWP.

Giacinto, Adam 2012. *Emergent Trends of Cultural Resource Management: Alternative Conceptions of Past, Present and Place.* M.A. Thesis in Anthropology, San Diego State University.

Golla, V. 2007. “Linguistic Prehistory.” In California Prehistory: Colonization, Culture, and Complexity, edited by T.L. Jones and K.A. Klar, 71–82. New York, New York: Altamira Press.

Golla, Victor. 2011. *California Indian languages*. Berkeley: University of California Press.

Google. 2022. Google Earth; desktop application; centered on the Project site. Accessed April 2022. https://www.google.com/earth/.

Grenda, D. R. 1997. *Continuity and Change: 8,500 Years of Lacustrine Adaptation on the Shores of Lake Elsinore: Archaeological Investigations at a Stratified Site in Southern California.* Statistical Research, Inc. Technical Series 59. Tucson, Arizona.

Griset, S. 1996. “Southern California Brown Ware.” Unpublished PhD dissertation; University of California, Riverside.

Gumprecht, Blake. 1999. *The Los Angeles River: its life, death, and possible rebirth*. Maltimore, MD: The Johns Hopkins University Press.

Hale, Micah J. 2001. "Technological organization of the Millingstone Pattern in southern California." MA thesis, Anthropology, California State University, Sacramento.

Hale, Micah J. 2009. "Santa Barbara and San Diego: contrasting adaptive strategies on the southern California coast." PhD dissertation, Anthropology, University of California, Davis.

Harrington, J.P. 1934. “A New Original Version of Boscana’s Historical Account of the San Juan Capistrano Indians of Southern California.” Smithsonian Miscellaneous Collections 92(4).

Harrington, John P. 1935. "Fieldwork among the Indians of California." In *Explorations and fieldwork of the Smithsonian Institution in 1934*, 81-84. Washington D.C.: Smithsonian Institution.

Harrington, John P. 1942. Culture Element Distributions: XIX, Central California Coast. *Anthropological Records* 7:1. University of California Press: Berkeley.

Hector, S.M. 2006. Cultural Resources Study for the Maintenance of Old Mission Dam, Mission Trails Regional Park, San Diego, California. Prepared for the City of San Diego.

Heizer, Robert F. 1978. "Introduction." In *Handbook of North American Indians*, edited by Robert F. Heizer, 1-6. Washington: Smithsonian Institution.

Heizer, R. and K.M. Nissen. 1973. The Human Sources of California Ethnography. Berkeley, California: University of California Archaeological Research Facility, Berkeley.

Hudson, Travis. 1982. "The Alliklik-Tataviam problem." *Journal of California and Great Basin Anthropology* 4: 222-232.

Johnson, John R. 1978. "The trail to Kashtiq." *The Journal of California Anthropology* 5 (2): 188-198.

Johnson, John R. 1997. "The Indians of Mission San Fernando." *Southern California Quarterly* 75 (3): 249-290.

Johnson, John R., and David D. Earle. 1990. "Tataviam geography and ethnohistory." *Journal of California and Great Basin Anthropology* 12 (2): 191-214.

Johnston, Bernice E. 1962. *California's Gabrielino Indians.* Frederick Webb Hodge Anniversary Publication Fund 8, Southwest Museum, Los Angeles.

King, Chester D. 1994*. Native American Placenames in the Santa Monica Mountains National Recreation Area, Agoura Hills.* Topanga Anthropological Consultants, California.

King, Chester D., and Thomas C Blackburn. 1978. "Tataviam." In *Handbook of North American Indians*, edited by Robert F. Heizer, 535-5337. Washington: Smithsonian Institution.

Kroeber, Alfred L. 1915. "A new Shoshonean tribe in California." *American Anthropologist* 17: 773-775.

Kroeber, Alfred L. 1925. *Handbook of the Indians of California*. *Smithsonian Institution, Bureau of American Ethnology Bulleting 78*. Washington DC: Government Printing Office.

Kyle, Douglas E. 2002. *Historic spots in California*. Stanford, CA: Stanford University Press.

Laylander, D. 2010. "Linguistic Prehistory." Research Issues in San Diego Prehistory. Accessed August 31, 2012. http://www.sandiegoarchaeology.org/Laylander/Issues /index.htm.

Laylander, D. 2000. Early Ethnography of the Californias, 1533-1825. Salinas, California: Coyote Press Archives of California Prehistory.

Lightfoot, K.G. 2005. *Indians, missionaries, and merchants: the legacy of colonial encounters on the California frontiers.* Berkeley, California: University of California Press.

Los Angeles Department of Water and Power (LADWP). 2012. Geotechnical Investigation Report, North Hollywood Chlorination Station – Rinaldi Toluca Site. On file at LADWP.

McAvoy, Christy J. 1994. Department of Parks and Recreation Series 523 Site Record for P-19-175325. On file at the CHRIS South Central Coastal Information Center, California State University, Fullerton.

McCawley, William 1996. The First Angelinos, the Gabrielino Indians of Los Angeles. Malki Museum Press, Banning.

McKenna, Jeanette. 2010. A Cultural Resources Overview and Preliminary Assessment of the Pacoima/Panorama City Redevelopment Plan Amendment/Expansion Project Area, Los Angeles County, California. On file at the CHRIS South Central Coastal Information Center, California State University, Fullerton.

Miller, Kevin W.P., I. Lopez, and Phillip L. Walker. 2003. "Human skeletal remains from CA-LAN-2233: a bioarchaeological analysis." In *Prehistory in the Transverse Ranges of California: an archaeological investigation in the Santa Clara River Valley*, edited by Georgie Waugh, 63-80. Sacramento: Archaeological Research Center, California State University Press, Monographis in California and Great Basin Anthropology, No. 4.

Native American Heritage Commission (NAHC). 2021. *About the Native American Heritage Commission*. State of California Native American Heritage Commission, 2021, http://nahc.ca.gov/about/. Accessed April 2022.

NETR (Nationwide Environmental Title Research LLC). 2022a. Historic Topographic Maps of Project Site, City of Los Angeles, California dating from 1894, 1896, 1898, 1900, 1902, 1904, 1906, 1908, 1910, 1913, 1915, 1921, 1926, 1932, 1933, 1941, 1948, 1949, 1955, 1960, 1968, 1975, 1980, 1987, 2012, 2015, and 2018. Accessed April 2022. https://www.historicaerials.com/viewer

NETR. 2022b. Historic Aerial Photographs of Project Site, City of Los Angeles, California dating from 1952, 1953, 1954, 1964, 1972, 1978, 1980, 1985, 1989, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2003, 2004, 2005, 2009, 2010, 2012, 2014, 2016, and 2018. Accessed April 2022. https://www.historicaerials.com/viewer

Northwest Economic Associates (NEA) and Chester King 2004. Ethnographic Overview of the Angeles National Forest: Tataviam and San Gabriel Mountain Serrano Ethnohistory. Prepared for the U.S. Department of Agriculture.

NPS (National Park Service) 1997. "How to Apply the National Register Criteria for Evaluation." National Register Bulletin No. 15. Washington, D.C.: National Park Service. Accessed May 2022.

O'Neil, Stephen. 2002. The Acjachemen in the Franciscan Mission System: Demographic Collapse and Social Change. Master's thesis, Department of Anthropology, California State University, Fullerton.

OHP (Office of Historic Preservation). 1995. Instructions for Recording Historical Resources. Accessed online May 2022. Website: http://ohp.parks.ca.gov/?page_id=1069.

Perkins, Arthur B. 1957. "Rancho San Francisco: a study of a California land grant." *The Historical Society of Southern California Quarterly* 39 (2): 99-126.

Reid, Hugo. 1926. *The Indians of Los Angeles County.* Privately printed, Los Angeles.

Rogers, M.J. 1945. "An Outline of Yuman Prehistory." *Southwestern Journal of Anthropology* 1:167–198.

Sanborn Map Company. 1950. Los Angeles City, 1888-1955. Available through the Los Angeles Public Library.

Sparkman, Philip. 1908. The Cultural of the Luiseño Indians. *University of California Publications in American Archaeology and Ethnology* 8:187–234. Berkeley.

State Lands Commission. 1982. *Grants of Land in California Made by Spanish or Mexican Authorities.* https://www.slc.ca.gov/wp-content/uploads/2018/11/1982-GrantsSpanishMexican.pdf. Accessed June 2022.

Sutton, Mark Q. 1980. "Some aspects of Kitenemuk prehistory." *Journal of California and Great Basin Anthropology* 2 (2): 214-225.

Sutton, Mark Q. 2009. *People and Language: Defining the Takic Expansion into Southern California.* Pacific Coast Archaeological Society Quarterly 41(2 & 3) pp. 33-93.

USDA (U.S. Department of Agriculture). 2022. Web Soil Survey. USDA, Natural Resources Conservation Service, Soil Survey Staff. Accessed April 2022. http://websoilsurvey.nrcs.usda.gov.

USGS (United States Geological Society). 2022. Mineral Resources Online Spatial Data. Interactive maps and downloadable data for regional and global analysis. Accessed April 2022. https://mrdata.usgs.gov/

Wallace, William J. 1955. "A suggested chronology for Southern California coastal archaeology." *Southwestern Journal of Anthropology* 11 (3): 214-230.

Warren, Claude N. 1968. "Cultural tradition and ecological adaptation on the southern California coast." *Eastern New Mexico University Contributions in Anthropology* 1 (3): 1-15.

Warren, C.N., G. Siegler, and F. Dittmer. 2004. "Paleoindian and Early Archaic Periods." In *Prehistoric and Historic Archaeology of Metropolitan San Diego: A Historic Properties Background Study*. Prepared for the Metropolitan Wastewater Department, City of San Diego. Encinitas, California: ASM Affiliates.

Waugh, John C. 2003. On the brink of civil war: the compromise of 1850 and how it changed the course of American history. Wilmington, DE: Scholarly Resources Inc.

Westec. 1983. Technical Report: Archaeological Resources, Los Angeles Rapid Rail Transit Project, Draft Environmental Impact Statement and Environmental Impact Report. On file at the CHRIS South Central Coastal Information Center, California State University, Fullerton.

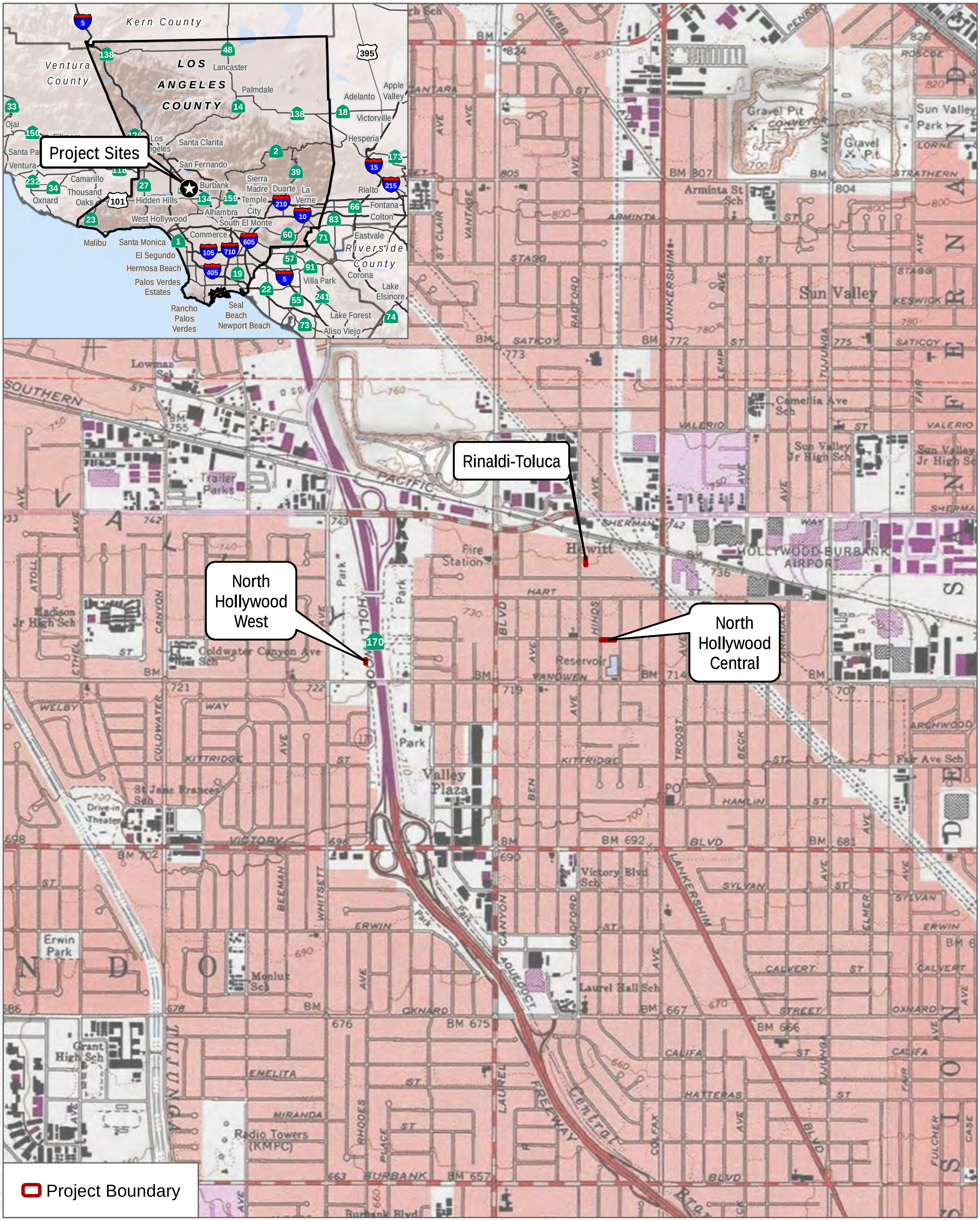
White, Raymond. 1963. Luiseño Social Organization. *University of California Publications in American Archaeology and Ethnology* 48:91-194. Berkeley.

Wood. 2018. Geotechnical and Survey Investigation Report, North Hollywood Operable Unit, Phase 1B – Lankershim Yard. Prepared for Honeywell. On file at LADWP.

ZIMAS (Zone Information and Map Access System). 2022. City of Los Angeles, Department of City Planning. Assessor Parcel Numbers of Project Site. Accessed April 2022. zimas.lacity.org

Attachment A

Figures



SOURCE: USA Topo Maps 7.5 Minute Quadrangle Van Nuys Series
Township 1S; Range 14W, 15W; Section 01, 06

DUDEK

0 1,000 2,000 Feet
0 300 600 Meters

FIGURE 1
Project Location
North Hollywood Chlorination Stations Project

SOURCE: Bing Imagery 2021

DUDEK

0 30 60 Feet

FIGURE 2

Rinaldi-Toluca Chlorination Station

North Hollywood Chlorination Stations Project

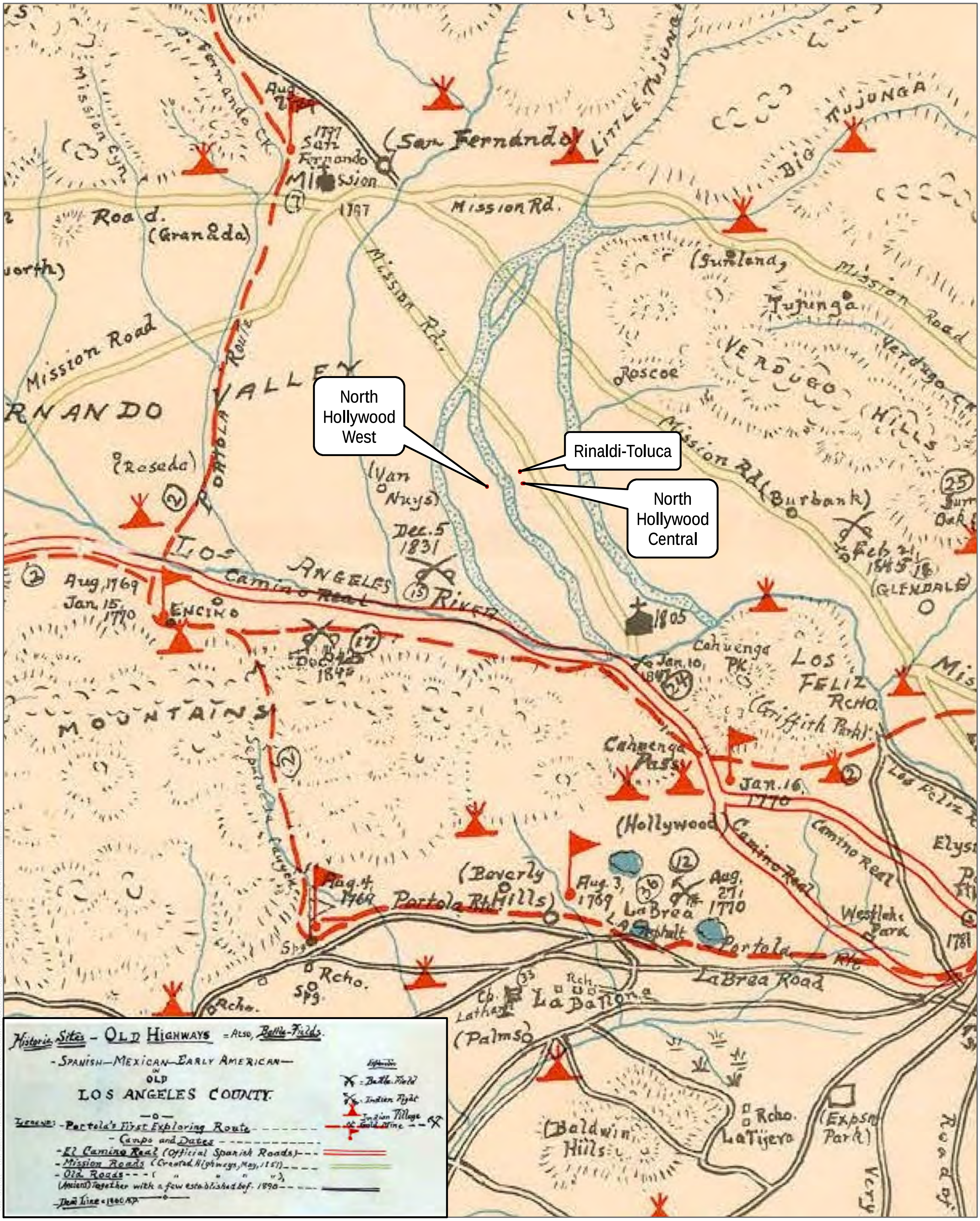
SOURCE: Bing Imagery 2021

DUDEK

FIGURE 3

North Hollywood Central Chlorination Station

North Hollywood Chlorination Stations Project



SOURCE: Kirkman - Harriman 1937 Pictorial and Historical Map of Los Angeles County: 1860-1937 AD

DUDEK

0 1.5 3 Miles
0 2.5 5 Kilometers

FIGURE 4

1860-1937 Kirkman-Harriman Historical Map

North Hollywood Chlorination Stations Project

Attachment B (Confidential)

CHRIS Records Search Results

Attachment C

NAHC SLF Search Results

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

STATE OF CALIFORNIA — Gavin Newsom, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION

February 11, 2022

Marshall Styers
Los Angeles Department of Water and Power

Via Email to: Marshall.Styers@ladwp.com

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, North Hollywood Chlorination Stations Upgrades Project, Los Angeles County

Dear Mr. Styers:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

   - Any report that may contain site forms, site significance, and suggested mitigation measures.

     All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was positive. Please contact the Fernandeno Tataviam Band of Mission Indians on the attached list for more information.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

APPENDIX D

Noise

38 NORTH MARENGO AVENUE
PASADENA, CALIFORNIA 91101
T 626.204.9800 F 626.204.9834

NORTH HOLLYWOOD CENTRAL CHLORINATION STATION REPLACEMENT

MITIGATED NEGATIVE DECLARATION – SECTION 3.13 – APPENDIX D

Prepared by:	Mark Storm, INCE Bd. Cert. (Dudek--Acoustic Services Manager)
Date:	April 23, 2022

The information herein is intended to provide supporting detail for the North Hollywood Central Chlorination Station Replacement (Project) noise and vibration impact assessment, and is organized by the following topics: construction noise prediction methodology and mitigation option details; and chlorination station operation noise prediction methodology and results. Following these narratives and exhibits are the following content:

- Investigator field notes and photographs from the baseline outdoor sound level survey conducted on March 15, 2022;
- Construction noise modeling worksheets; and
- Figures D-1 through D-7 presenting facility operation noise modeling scenarios.

CONSTRUCTION NOISE METHODOLOGY

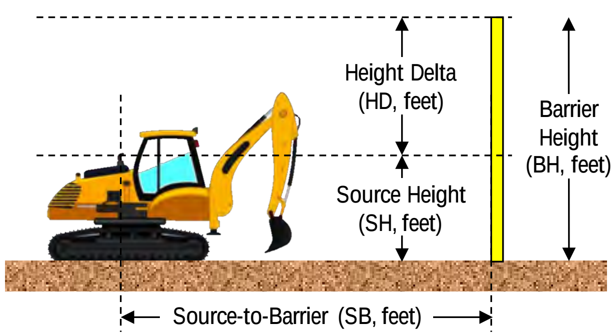
Noise associated with multi-month construction activities at each of the three proposed project sites (NHC, NHW, and RT) was predicted with a technique that emulates the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) and accounts for equipment type, distance between equipment and the receptor of interest, hours of operation, and what the RCNM refers to as "acoustical usage factor" (AUF) that describes the time period portion (as a percentage) at which the equipment is actually operating at full power and under such conditions exhibiting maximum noise generation.

This RCNM emulator was applied to each successive month of anticipated construction activity, within which there would be an expected quantity of certain types of onsite heavy equipment and vehicles. These quantities appear in the attached worksheets following this narrative. In a manner similar to the "general assessment" approach for evaluating project construction noise per the Federal Transit Administration (FTA), the average distance between operating construction equipment at a project site and the nearest noise-sensitive receiver was defined by the geographic center of the construction site. In other words, the expected equipment noise emission sources for a studied month were located at a common central onsite point representing their likely time-averaged locations since actual positions of equipment over the course of the month—or even an individual day within that studied month--would vary. The aforementioned worksheets also exhibit the construction noise prediction results for each month and demonstrate that show that no nearest offsite noise-sensitive receiver would be exposed to greater than 75 dBA over the course of Project construction. However, the RCNM emulator worksheet also shows that on an individual basis, and using RCNM reference noise level data from Table 1 of its "User's Guide" (FHWA 2006), some pieces of heavy construction equipment emit noise that would exceed the City of Los Angeles Municipal Code (LAMC) 112.05(a) threshold of 75 dBA at 50 feet.

While most equipment are expected to be compliant with this standard, assuming their actual noise emission levels and AUF values onsite are comparable to RCNM-based reference quantities used as inputs in the prediction model, excavators and skid-steers may demonstrate noise level higher than 75 dBA at a distance of 50 feet by up to 2 dB.

CONSTRUCTION NOISE MITIGATION

One potential method of construction noise mitigation listed in MM-NOI-1 under Section 3.13 of the MND is implementation of temporary noise barriers (e.g., field-erected walls or suspended acoustical blankets or curtains) having noise reduction performance that can be estimated with the matrix appearing in Exhibit D-1. The displayed values presume the following conditions: the barrier is solid, has adequate mass and/or rigidity, and has no air gaps or cracks that would degrade sound insulation performance; and the horizontal extent of the barrier is long enough to minimize "flanking" or diffraction of sound around the vertical edges.



Horizontal Source-to-Barrier (SB, feet)	Height Delta to Achieve Indicated Insertion Loss (HD, feet)	
	5 dB Insertion Loss*	10 dB Insertion Loss*
60	2.0	6.0
30	1.0	5.0
15	0.75	3.0
6	0.5	2.5
3	0.25	1.5

Exhibit D-1. Noise-reducing Barrier Height Guidance

Two examples of solid barriers appear in Exhibits D-2 and D-3, with the latter offering an equipment-facing side to help absorb incoming sound energy and thus help minimize reflection in direction opposite of the sound path to be occluded. Providers of outdoor acoustical blanket-type barriers and curtains commonly rented or purchased for construction site noise reduction include Behrens & Associates, Pacific Sound Control, United Rentals, and other comparable suppliers.

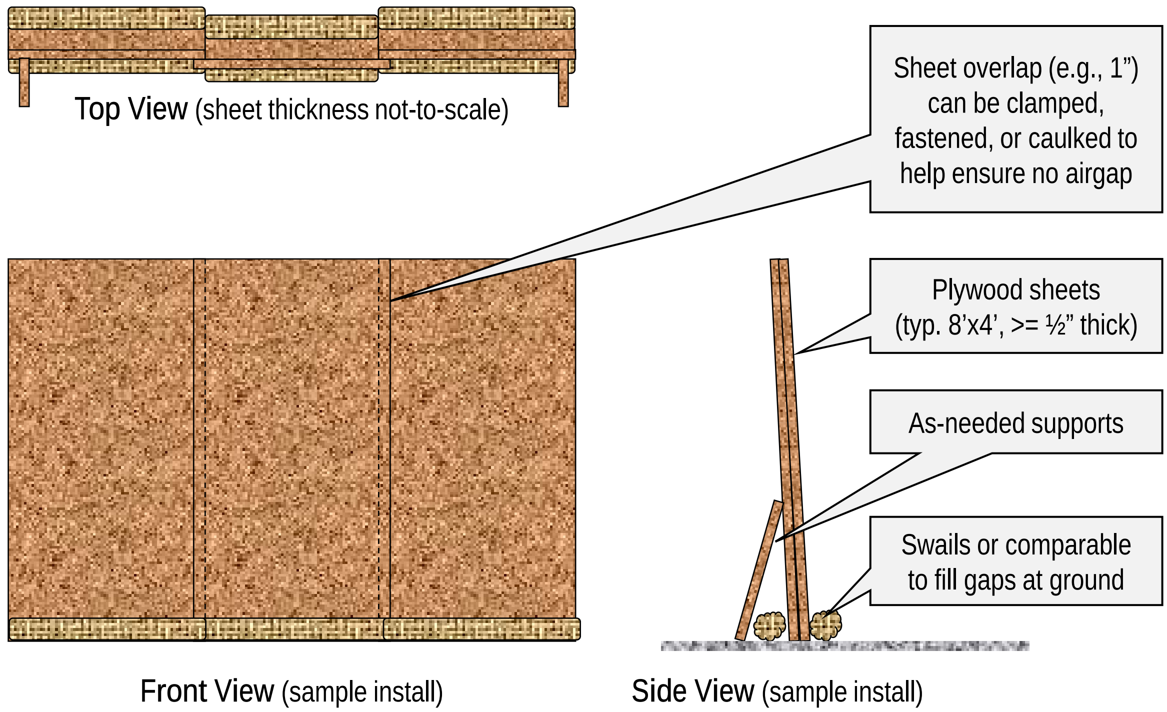


Exhibit D-2. Sample minimal plywood noise barrier

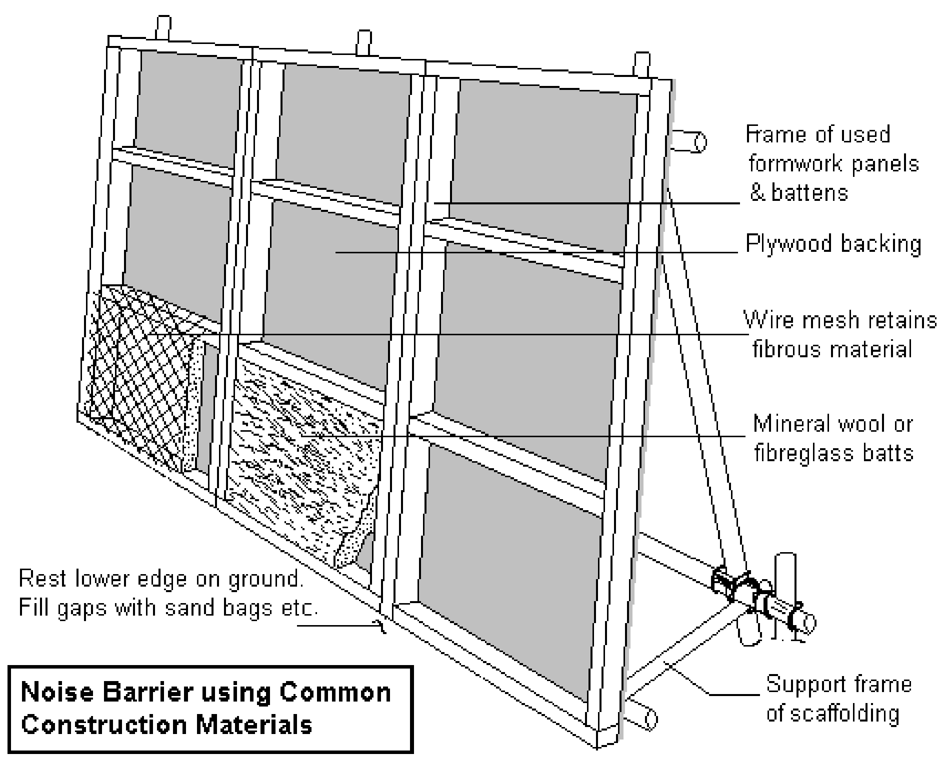


Exhibit D-3. Sample absorptive temporary solid noise barrier (Source: Eaton 2000)

OPERATION NOISE PREDICTION METHODOLOGY

Prediction of post-construction operation noise attributed to new or upgraded facilities associated with the Project involved creation of a sound propagation model using the Datakustik CadnaA software program. CadnaA (Computer Aided Noise Abatement) is a commercially available computer-modeling program for calculation, presentation, assessment, and prediction of environmental noise. Estimated sound emission from pumps, blowers, and other major noise-producing equipment was input into the computer model, along with site plan information. The outdoor noise propagation formulas follow the International Organization of Standardization (ISO) Standard 9613-2, "Attenuation of Sound During Propagation Outdoors, Part 2: General Method of Calculation". For purposes of this analysis, Exhibit D-4 displays understood locations of the proposed new noise-producing outdoor-exposed features associated with the proposed North Hollywood Central (NHC) Chlorination Station Replacement.

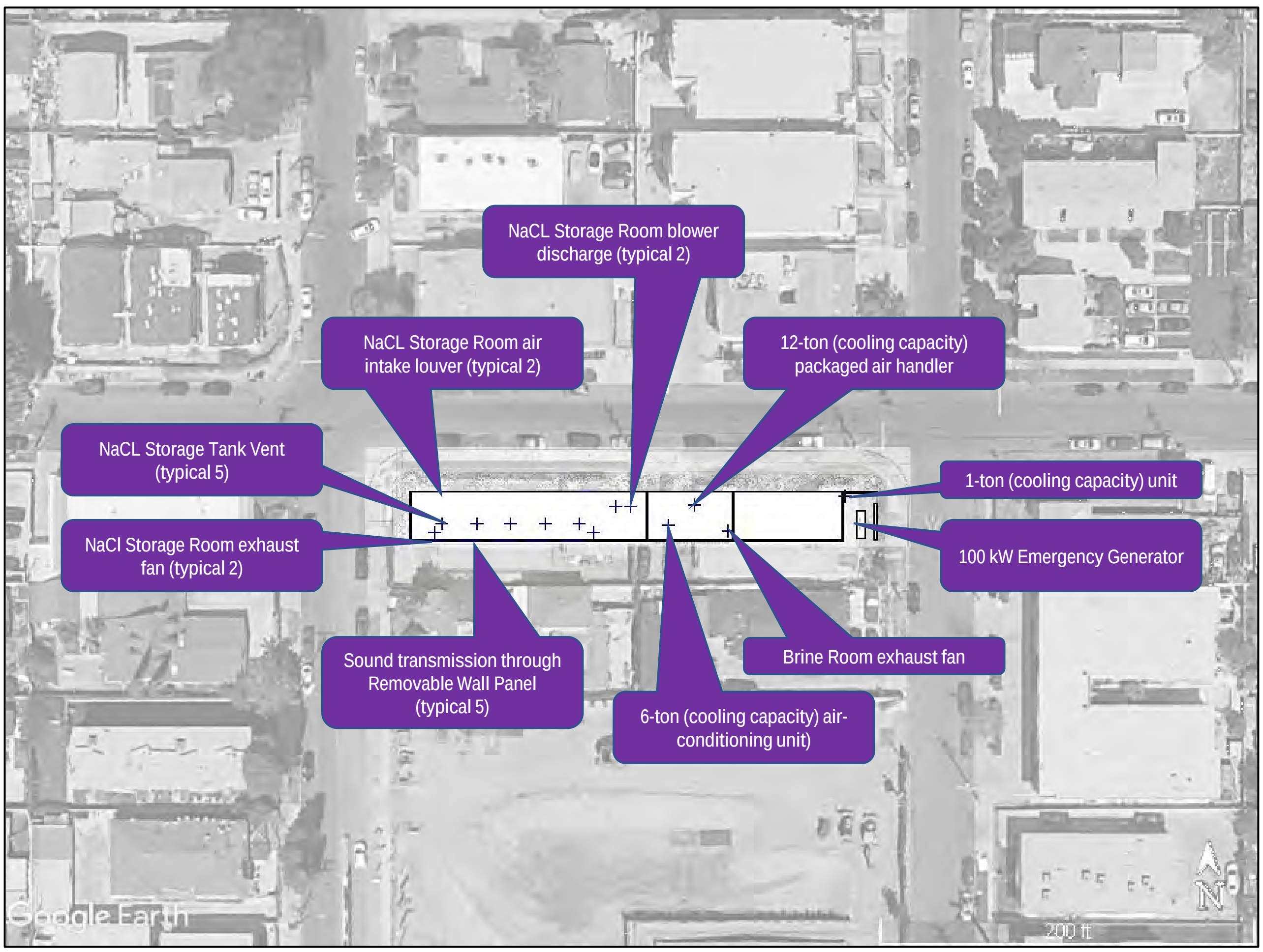


Exhibit D-4. Modeled NHC Chlorination Station Replacement facility features

These displayed Project features are input sound sources in the CadnaA three-dimensional (3-D) model space and defined with the following assumptions, available Project design information, and publicly-accessible (online) engineering data:

- A Caterpillar C4.4 ("DE110E2") diesel-fueled generator, enclosed by a "Level 2" sound-insulated enclosure (and associated intake and exhaust noise reduction) yielding an overall sound power level (PWL) of 101 dBA.
- Brine room and hypochlorite room rooftop exhaust fans each having PWL = 63.2 dBA.
- A one-ton (cooling capacity) rooftop air-conditioning condenser unit having PWL = 63.7 dBA.
- A six-ton (cooling capacity) rooftop air-conditioning condenser unit having PWL = 69.7 dBA.
- A twelve-ton (cooling capacity) packaged rooftop air handling unit (RTU) having PWL = 83.2 dBA.
- Rooftop ventilation discharge from hypochlorite storage tanks that are pressurized by five centrifugal blowers, which after accounting for acoustical energy losses via ducting yield an estimated PWL = 83.3 dBA each.
- Rooftop ventilation discharge from two operating high-pressure (i.e., 16 inches water gauge static pressure) centrifugal blowers, which after accounting for acoustical energy losses via ducting yield an estimated PWL = 97 dBA each.
- Two intake air louvers for the NaCl storage room, each of which features an acoustical louver that yields a PWL depending on the aggregate noise within the room volume. At assumed full operating capacity, each louver (54" x 42" in cross-sectional area) would emit noise at PWL = 71.4 dBA.
- Although the facility walls are mostly 12"-thick concrete and thus demonstrate high sound insulation performance, there are five large "removable wall panels" (each measuring 18.5 feet tall by approximately 14 feet wide) to facilitate installation (and potential later removal or replacement) of each 12-foot diameter storage tank within the NaCl storage room. Because each of these removable wall panels comprises interior and exterior ribbed metal skins sandwiching a 2"-thick layer of polyurethane foam (or similar rigid insulation material), the sound insulation performance is substantially less than that of the concrete walls and would thus be considered potentially substantial noise emitters. Hence, each panel radiates sound to the outdoors depending on the interior noise within. For the NHC chlorination station replacement facility at full capacity, each of the five panels would radiate noise having a PWL = 80.7 dBA.

The planned NHC chlorination station obviously features additional equipment, but they are unpowered or are otherwise considered noise sources that would have negligible acoustic contribution to the total combined noise emission. To help explain why this is true, combination of sounds is logarithmic and not arithmetic: for instance, the sum of one source measuring 60 dBA at a receptor and another source measuring 50 dBA at the same receptor position would essentially be 60 dBA.

Important calculation parameters that establish how the CadnaA model predicts combined noise level from these above-listed Project sources include as follows:

- Sound propagation per International Organization of Standardization (ISO) 9613-2 (ISO 1996);
- Default ground absorption coefficient = 0.25 (on a scale of 0 = reflective, 1 = absorptive) to represent the urban landscape of paved and concrete areas;
- Reflection order = 2 (to account for up to two sound emission path "bounces" off of encountered solid surfaces); and,
- 50 degrees Fahrenheit, 50% relative humidity.

INFORMATION SOURCES

The following is a list of information sources, in addition to Project drawings and data available as of this writing and furnished to Dudek, discovered and used to support the development of facility operation noise model input parameters.

Caterpillar "Level 2" generator enclosure:

https://s7d2.scene7.com/is/content/Caterpillar/CM20181108-12939-53890?_ga=2.3581040.1988210444.1650225075-1441906877.1649048684

Caterpillar generator guidance:

https://s7d2.scene7.com/is/content/Caterpillar/CM20180319-16263-55470?_ga=2.267889742.1988210444.1650225075-1441906877.1649048684

NaCl storage room blowers:

https://www.mkplastics.com/documents/literature/PRVS_Catalog-25-01_MARCH_2008.pdf

Facility "removable wall panels":

https://www.kingspan.com/us/en-us/product-groups/insulated-metal-panels/downloads/technical-data/ks-micro-rib-data-sheet

Exhaust fan sound level data:

https://content.greenheck.com/public/DAMProd/Original/10002/SeriesC_catalog.pdf

Air-conditioning unit sound level data:

https://www.carriercca.com/pdf/products_pdf/50HC-4-14-06PD.pdf

https://assets.unilogcorp.com/267/ITEM/DOC/Fujitsu_AOU18RLXFZ_Specification_Sheet.pdf

https://www.fujitsu-general.com/shared/us/pdf-fgus-vrf-2022-01.pdf

Facility air intake acoustical louver sound transmission loss data:

https://www.ruskin.com/doc/Id/17

DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT ~~[illegible]~~ NORTH HOLLYWOOD CHLORINATION STATION PROJECT # 10649.86
SITE ID
(2) SITE ADDRESS 11805 VAN OWEN ST OBSERVER(S) PEYE VISION
START DATE 3/15/22 END DATE 3/15/22
START TIME END TIME

METEOROLOGICAL CONDITIONS
TEMP 74 F HUMIDITY 27 % R.H. WIND CALM LIGHT MODERATE
WINDSPD 3 MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY
SKY SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS
MEAS. INSTRUMENT PICCOLO II TYPE 1 2 SERIAL # P0218091404
CALIBRATOR REED R8090 SERIAL #
CALIBRATION CHECK PRE-TEST ____ dBA SPL POST-TEST ____ dBA SPL WINDSCRN YES

SETTINGS A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER:

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
27-42									

COMMENTS
READING TAKEN MID-BLOCK, ALONG HINDS AVE, AT WESTERN ~~[illegible]~~ END OF ~~[illegible]~~ SITE; NOISE SOURCES INCLUDE USE OF HAND TOOLS (HAMMERING; CIRCULAR SAWS); LIGHT TRAFFIC ON HINDS AVE AND ON DEHOUGNE ST; OCCASIONAL DISTANT HELICOPTERS; CEMENT MIXER PASS BY AT 11:52; STREET SWEEPER PASS AT 11:55; ~~[illegible]~~ DISTANT CONVERSATION THROUGHOUT READING; OCCASIONAL DISTANT VEHICLE BACKUP ALARMS;

SOURCE INFO AND TRAFFIC COUNTS
PRIMARY NOISE SOURCE TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: ASPHALT DIST. TO RDWY C/L OR EOP:
TRAFFIC COUNT DURATION: ____ MIN SPEED ____ MIN SPEED

COUNT 1 (OR RDWY 1) DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB	IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE	COUNT 2 (OR RDWY 2) NB/EB	SB/WB	NB/EB	SB/WB
AUTOS									
MED TRKS									
HVY TRKS									
BUSES									
MOTRCLS									

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVERSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER:

LOW ALTITUDE JET AIRCRAFT FLYOVER AT 11:47; 11:50; 11:57

DESCRIPTION / SKETCH
TERRAIN HARD SOFT MIXED FLAT OTHER: ASPHALT ON HINDS AVE / DIRT & GRAVEL AT EDGE OF SITE
PHOTOS
OTHER COMMENTS / SKETCH

N

DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT: North Hollywood West Chlorination Station — PROJECT #: 10649.87
SITE ID:
(3) SITE ADDRESS: 12403 Van Owen St — OBSERVER(S): Pete Vitar
START DATE: 3/15/22 — END DATE: 3/15/22
START TIME: — END TIME:

METEOROLOGICAL CONDITIONS

TEMP: 79 F — HUMIDITY: 25 % R.H. — WIND: CALM LIGHT MODERATE
WINDSPD: 4 MPH — DIR.: N NE S SE S SW W NW — VARIABLE STEADY GUSTY
SKY: SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS

MEAS. INSTRUMENT: Piccolo II — TYPE 1 2 — SERIAL #: P0218091404
CALIBRATOR: Reed R8090 — SERIAL #:
CALIBRATION CHECK: PRE-TEST ____ dBA SPL — POST-TEST ____ dBA SPL — WINDSCRN: YES

SETTINGS: A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER:

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC)
43-58									

COMMENTS
Reading taken in DWP yard, north of Vanowen St; primary noise sources are traffic on Vanowen St to the south of meter & traffic on 170 Fwy to the east; occasional vehicles passing through DWP yard at low speed;

SOURCE INFO AND TRAFFIC COUNTS

PRIMARY NOISE SOURCE: TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: Asphalt — DIST. TO RDWY C/L OR EOP:

TRAFFIC COUNT DURATION: __ MIN

COUNT 1 (OR RDWY 1)	NB/EB	SB/WB	SPEED NB/EB	SPEED SB/WB
AUTOS				
MED TRKS				
HVY TRKS				
BUSES				
MOTRCLS				

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE

__ MIN

COUNT 2 (OR RDWY 2)	NB/EB	SB/WB	SPEED NB/EB	SPEED SB/WB
AUTOS				
MED TRKS				
HVY TRKS				
BUSES				
MOTRCLS				

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER:
Low altitude jet aircraft flyover 12:21;

DESCRIPTION / SKETCH

TERRAIN: HARD SOFT MIXED FLAT OTHER:
PHOTOS: 3726; 3727; 3728; 3729
OTHER COMMENTS / SKETCH

N

DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT: RINALDI-TOLUCA CHLORINATION STATION PROJECT #: 10649.88
SITE ID:
(1) SITE ADDRESS: 11845 VOSE ST OBSERVER(S): PETE VITAR
START DATE: 3/15/22 END DATE: 3/15/22
START TIME: END TIME:

METEOROLOGICAL CONDITIONS
TEMP: 70 F HUMIDITY: ~~[illegible]~~ 33 % R.H. WIND: ~~CALM~~ LIGHT MODERATE
WINDSPD: 3 MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY
SKY: SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS
MEAS. INSTRUMENT: PICCOLO II TYPE 1 2 SERIAL #: P0218091404
CALIBRATOR: REED R8090 SERIAL #:
CALIBRATION CHECK: PRE-TEST ____ dBA SPL POST-TEST ____ dBA SPL WINDSCRN: YES

SETTINGS: A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER:

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC)
7-23									

COMMENTS
READING TAKEN ~~[illegible]~~ AT FRONT AREA OF LANKERSHIM LAND (AKA RINALDI-TOLUCA) ALONG VOSE ST; NOISE SOURCES INCLUDE PORTABLE GENERATOR BEING USED AT NORTH END OF LAND; ~~[illegible]~~ SMALL POWER TOOLS (GRINDER) HEARD OCCASIONALLY; OCCASIONAL SOUND OF HEAVY EQUIP. BACKUP ALARMS; LIGHT TRAFFIC ON VOSE ST;

SOURCE INFO AND TRAFFIC COUNTS
PRIMARY NOISE SOURCE: TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: ASPHALT ~~[illegible]~~ DIST. TO RDWY C/L OR EOP:
TRAFFIC COUNT DURATION: — MIN SPEED ____ MIN SPEED

COUNT 1 (OR RDWY 1)

DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS				
MED TRKS				
HVY TRKS				
BUSES				
MOTRCLS				

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE —

COUNT 2 (OR RDWY 2)

DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS				
MED TRKS				
HVY TRKS				
BUSES				
MOTRCLS				

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER: ~~[illegible]~~
SOME OCCASIONAL NOISE FROM MATERIALS MOVEMENT AT NEARBY BUSINESSES; SOME DISTANT DOG BARKING FROM NEARBY KENNEL ~~[illegible]~~ FACILITY

DESCRIPTION / SKETCH
TERRAIN: HARD SOFT MIXED FLAT OTHER:
PHOTOS: 3715; 3716; 3717; 3718
OTHER COMMENTS / SKETCH

3720 - Looking east

3721 - Looking south

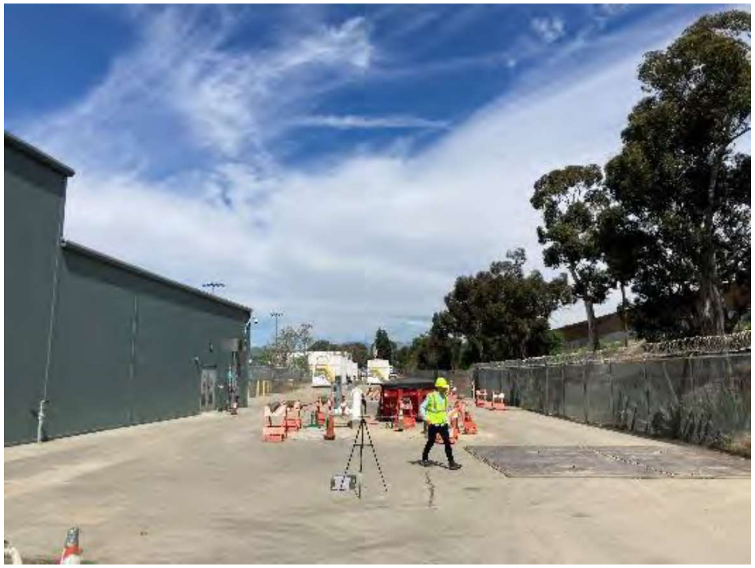
3722 - Looking west

3723 - Looking north

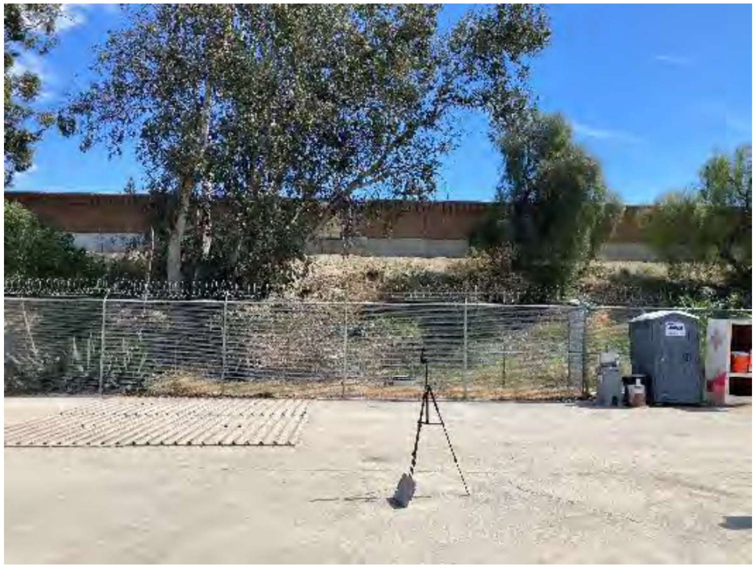
03/15/22 – Sound Level Meter (SLM) at Position **NHC**
(photo file ID# and view direction noted above)

3726 - Looking south

3727 - Looking west



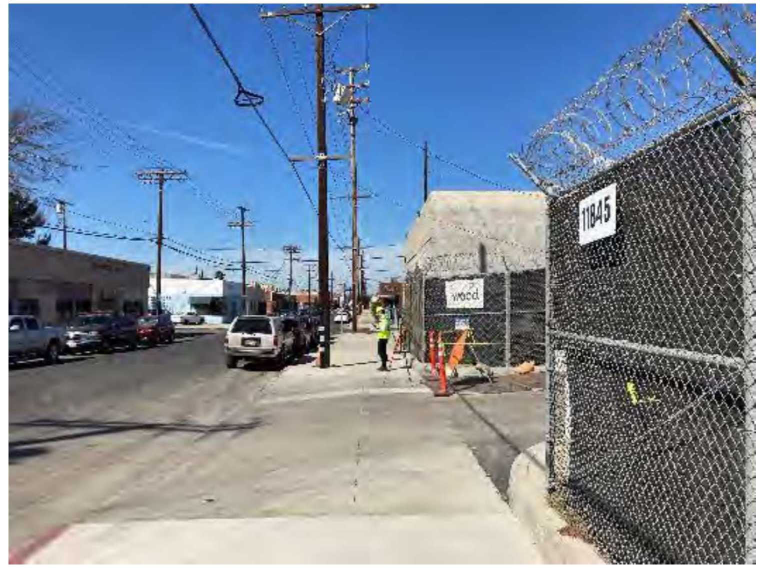
3728 - Looking north



3729 - Looking east

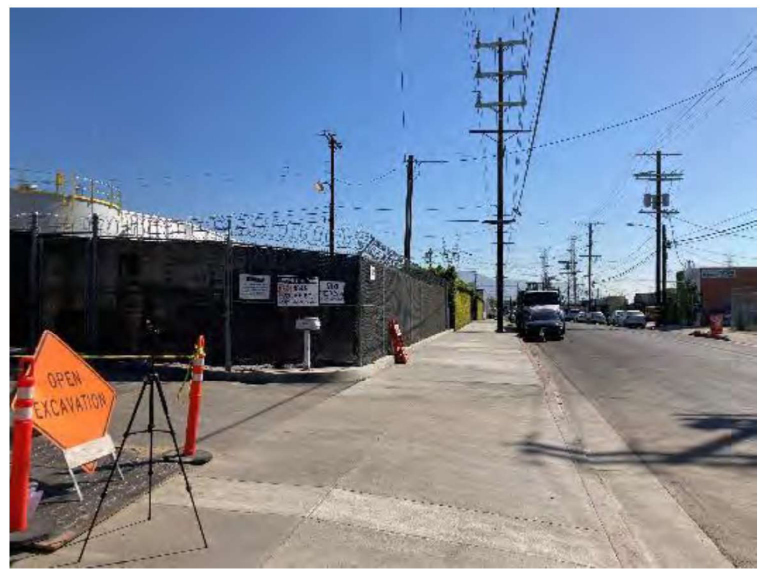
03/15/22 – Sound Level Meter (SLM) at Position **NHW**
(photo file ID# and view direction noted above)

3715 - Looking south



3716 - Looking west

3717 - Looking north



3718 - Looking east

03/15/22 – Sound Level Meter (SLM) at Position **RT**
(photo file ID# and view direction noted above)

To User: bordered cells are inputs, unbordered cells have formulae

noise level limit for construction at 50 feet, per City of Los Angeles = 75
allowable hours over which Leq is to be averaged = 1

Searchable Construction Tag	Construction Equipment Type Abbreviation	Comparable FHWA RCNM Construction Equipment Type	Quantity	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	*Temporary Barrier Insertion Loss (dB)*	*Additional Noise Reduction*	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 1-hour Leq
EXCAV50	EXCAV	excavator	1	40	81	Excavator - 5 yard bucket	50	0		80.9	1	60	77
FRONT50	FRONT	front end loader	1	40	79	Front end Loader - 5 yard	50	0		78.9	1	60	75
WATER50	WATER	flat bed truck	1	40	74	Water Truck	50	0		73.9	1	60	70
CMPCT50	CMPCT	roller	1	20	80	Compaction Roller	50	0		79.9	1	60	73
SKIDS50	SKIDS	*skid steer**	1	40	80	Skid Steer	50	0		79.9	1	60	76
CRN2050	CRN20	flat bed truck	1	40	74	Crane - 20 ton	50	0		73.9	1	60	70
CRN5050	CRN50	*crane***	1	100	63.3	Crane - 50 ton (Grove RT700E)	50	0		63.2	1	60	63
CNCRT50	CNCRT	concrete pump truck	1	20	81	Concrete Pump Truck	50	0		80.9	1	60	74
BCKHO50	BCKHO	backhoe	1	40	78	Backhoe	50	0		77.9	1	60	74
BOBCT50	BOBCT	*skid steer**	1	40	80	Bobcat S510	50	0		79.9	1	60	76
FORKL50	FORKL	man lift	1	20	75	Forklift	50	0		74.9	1	60	68
PCKUP50	PCKUP	pickup truck	1	40	55	pickup truck	50	0		54.9	1	60	51

Equipment Notes:
* https://ia.cpuc.ca.gov/Environment/info/ene/mesa/attachment/A1503003%20ED-SCE-01%20Q.PD-01%20Attachment%20(Revised%20Noise%20Levels%20Construction%20Equipment).pdf
** Table 4, line 46, 50-ton mobile telescopic crane (DEFRA 2005)

To User: bordered cells are inputs, unbordered cells have formulae

noise level limit for construction at 50 feet, per City of Los Angeles = 75
allowable hours over which Leq is to be averaged = 1

Searchable Construction Tag	Construction Equipment Type Abbreviation	Comparable FHWA RCNM Construction Equipment Type	Quantity	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	*Temporary Barrier Insertion Loss (dB)*	*Additional Noise Reduction*	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 1-hour Leq
NHC													
EXCAV120	EXCAV	excavator	1	40	81	Excavator - 5 yard bucket	120	0		70.5	1	60	67
FRONT120	FRONT	front end loader	1	40	79	Front end Loader - 5 yard	120	0		68.5	1	60	65
WATER120	WATER	flat bed truck	1	40	74	Water Truck	120	0		63.5	1	60	60
CMPCT120	CMPCT	roller	1	20	80	Compaction Roller	120	0		69.5	1	60	63
SKIDS120	SKIDS	*skid steer**	1	40	80	Skid Steer	120	0		69.5	1	60	66
CRN20120	CRN20	flat bed truck	1	40	74	Crane - 20 ton	120	0		63.5	1	60	60
CRN50120	CRN50	*crane***	1	100	63.3	Crane - 50 ton (Grove RT700E)	120	0		52.8	1	60	53
CNCRT120	CNCRT	concrete pump truck	1	20	81	Concrete Pump Truck	120	0		70.5	1	60	64
BCKHO120	BCKHO	backhoe	1	40	78	Backhoe	120	0		67.5	1	60	64
BOBCT120	BOBCT	*skid steer**	1	40	80	Bobcat S510	120	0		69.5	1	60	66
FORKL120	FORKL	man lift	1	20	75	Forklift	120	0		64.5	1	60	58
NHW													
WATER300	WATER	flat bed truck	1	40	74	Water Truck	300	0		53.9	1	60	50
CRN20300	CRN20	flat bed truck	1	40	74	Crane - 20 ton	300	0		53.9	2	120	53
BCKHO300	BCKHO	backhoe	1	40	78	Backhoe	300	0		57.9	1	60	54
FORKL300	FORKL	man lift	1	20	75	Forklift	300	0		54.9	1	60	48
RT													
WATER350	WATER	flat bed truck	1	40	74	Water Truck	350	0		52.4	1	60	48
CRN20350	CRN20	flat bed truck	1	40	74	Crane - 20 ton	350	0		52.4	1	60	48
CNCRT350	CNCRT	concrete pump truck	1	20	81	Concrete Pump Truck	350	0		59.4	1	60	52
BCKHO350	BCKHO	backhoe	1	40	78	Backhoe	350	0		56.4	1	60	52
FORKL350	FORKL	man lift	1	20	75	Forklift	350	0		53.4	1	60	46

Equipment Notes:
* https://ia.cpuc.ca.gov/Environment/info/ene/mesa/attachment/A1503003%20ED-SCE-01%20Q.PD-01%20Attachment%20(Revised%20Noise%20Levels%20Construction%20Equipment).pdf
** Table 4, line 46, 50-ton mobile telescopic crane (DEFRA 2005)

Construction Schedule

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Time Period	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26

Construction Equipment Quantities by Type

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Excavator - 5 yard bucket			1	1	1	1	1					1																					
Front end Loader - 5 yard			1	1	1																												
Water Truck			1	1	1							1																					
Compaction Roller				1	1																												
Skid Steer			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1											
Crane - 20 ton							1	1	1	1	1																						
Crane - 50 ton (Grove RT700E)				1	1	1	1																										
Concrete Pump Truck						1	1	1	1	1	1	1																					
Backhoe			1	1	1	1	1	1	1	1	1	1																					
Bobcat S510			1	1	1	1	1	1	1	1	1	1																					
Forklift			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1							

Combined Construction Noise at Nearest Offsite Receptor: **NHC** (multi-family residences on the north side of Dehougne St.)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Excavator - 5 yard bucket	0.0	0.0	66.5	66.5	66.5	66.5	66.5	0.0	0.0	0.0	0.0	66.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Front end Loader - 5 yard	0.0	0.0	64.5	64.5	64.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Water Truck	0.0	0.0	59.5	59.5	59.5	0.0	0.0	0.0	0.0	0.0	0.0	59.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Compaction Roller	0.0	0.0	0.0	62.5	62.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Skid Steer	0.0	0.0	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Crane - 20 ton	0.0	0.0	0.0	0.0	0.0	0.0	59.5	59.5	59.5	59.5	59.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Crane - 50 ton (Grove RT700E)	0.0	0.0	0.0	52.8	52.8	52.8	52.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Concrete Pump Truck	0.0	0.0	0.0	0.0	0.0	63.5	63.5	63.5	63.5	63.5	63.5	63.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Backhoe	0.0	0.0	63.5	63.5	63.5	63.5	63.5	63.5	63.5	63.5	63.5	63.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bobcat S510	0.0	0.0	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Forklift	0.0	0.0	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	57.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Concurrent Total (dBA)	**0**	**0**	**73**	**73**	**73**	**72**	**73**	**71**	**71**	**71**	**71**	**72**	**66**	**66**	**66**	**66**	**66**	**66**	**66**	**66**	**66**	**66**	**58**	**58**	**58**	**58**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Construction Schedule

Construction Equipment Quantities by Type

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Time Period	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24
Water Truck																	
Crane - 20 ton				1	1	1											
Backhoe																	
Forklift				1	1	1	1	1	1	1	1	1	1	1	1	1	1

Month	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Time Period	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26
Water Truck			1	1	1											
Crane - 20 ton																
Backhoe			1	1			1									
Forklift	1	1	1	1	1	1	1	1	1	1	1	1	1			

Combined Construction Noise at Nearest Offsite Receptor: **NHW** (Park Plaza Apts. at Vanowen Street and Rhodes Avenue)

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Time Period	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24
Water Truck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Crane - 20 ton	0.0	0.0	0.0	53.0	53.0	53.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Backhoe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Forklift	0.0	0.0	0.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0
Concurrent Total (dBA)	**0**	**0**	**0**	**54**	**54**	**54**	**48**	**48**	**48**	**48**	**48**	**48**	**48**	**48**	**48**	**48**	**48**

Month	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Time Period	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26
Water Truck	0.0	0.0	50.0	50.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Crane - 20 ton	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Backhoe	0.0	0.0	54.0	54.0	0.0	0.0	54.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Forklift	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0	0.0	0.0	0.0
Concurrent Total (dBA)	**48**	**48**	**56**	**56**	**52**	**48**	**55**	**48**	**48**	**48**	**48**	**48**	**48**	**0**	**0**	**0**

Construction Schedule

Construction Equipment Quantities by Type

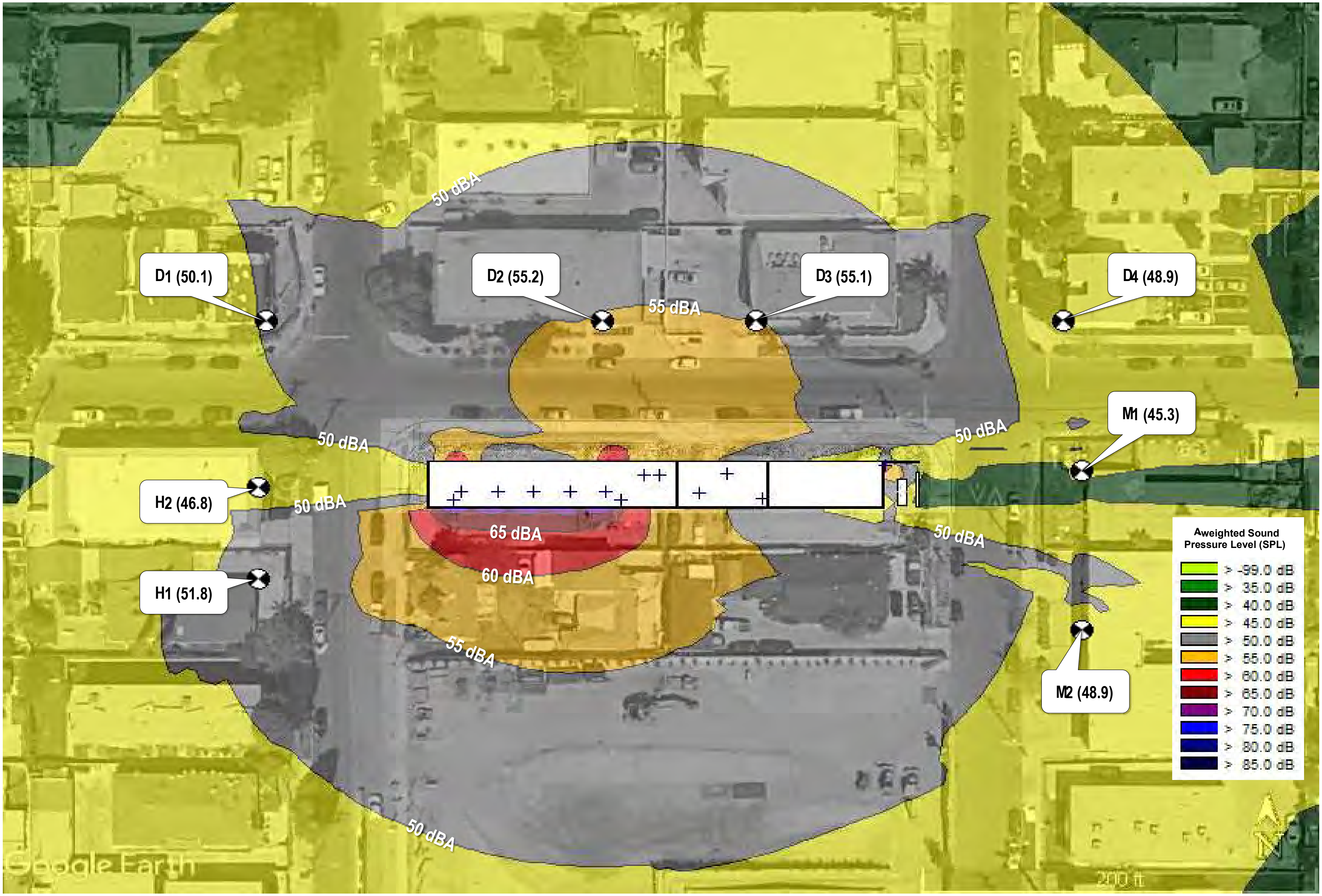
Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time Period	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24
Water Truck																
Crane - 20 ton									1	1	1					
Concrete Pump Truck																
Backhoe																
Forklift									1	1	1	1	1	1	1	1

Month	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Time Period	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26
Water Truck	1	1	1	1	1	1	1										
Crane - 20 ton	1																
Concrete Pump Truck	1	1	1	1	1	1	1										
Backhoe	1	1	1	1													
Forklift	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Combined Construction Noise at Nearest Offsite Receptor: **RT** (single-family residence = 7103 Radford Ave.)

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Water Truck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Crane - 20 ton	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.5	48.5	48.5	0.0	0.0	0.0	0.0	0.0
Concrete Pump Truck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Backhoe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Forklift	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5
Concurrent Total (dBA)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**51**	**51**	**51**	**46**	**46**	**46**	**46**	**46**

Month	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Water Truck	48.5	48.5	48.5	48.5	48.5	48.5	48.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Crane - 20 ton	48.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Concrete Pump Truck	52.5	52.5	52.5	52.5	52.5	52.5	52.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Backhoe	52.5	52.5	52.5	52.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Forklift	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5
Concurrent Total (dBA)	**57**	**57**	**57**	**57**	**55**	**55**	**55**	**46**	**46**	**46**	**46**	**46**	**46**	**46**	**46**	**46**	**46**



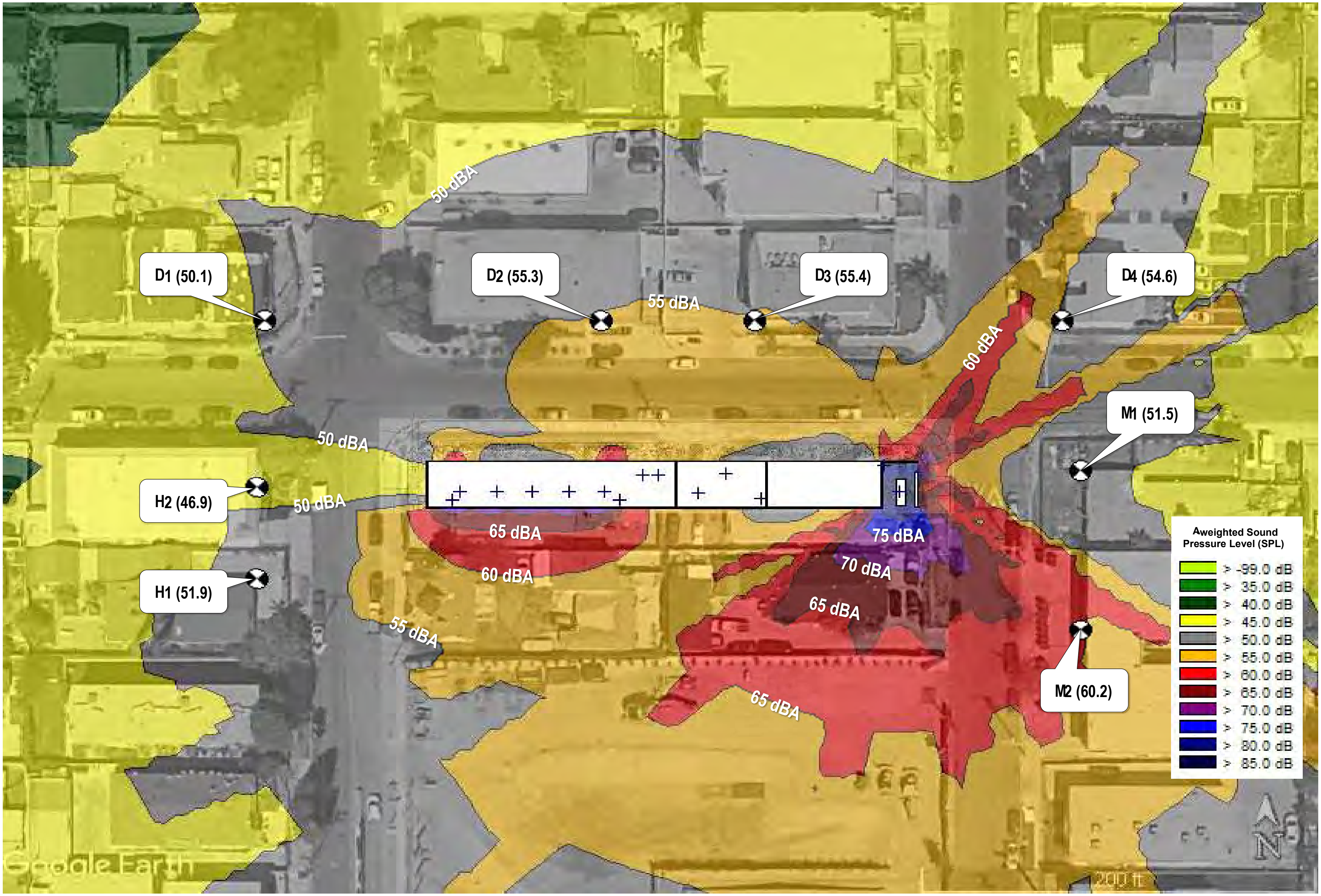
SOURCE: Dudek 2022

DUDEK

0 28.5 57 Feet

FIGURE D-1

Predicted Operation Noise from North Hollywood Central (NHC) Chlorination Station Replacement Facility (full capacity)



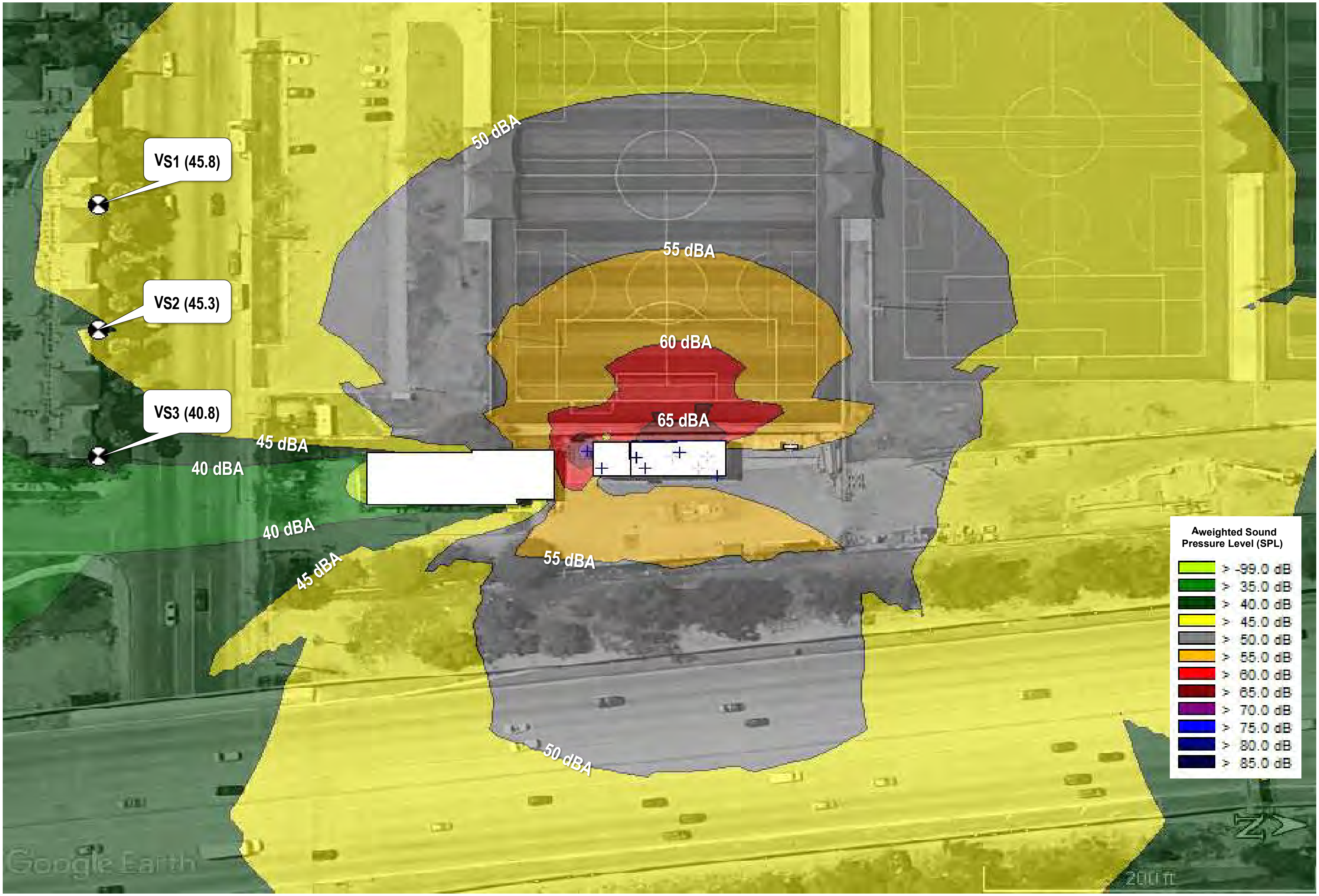
SOURCE: Dudek 2022

DUDEK

0 28.5 57 Feet

FIGURE D-2

Predicted Operation Noise from North Hollywood Central (NHC) Chlorination Station Replacement Facility (full capacity plus generator test)



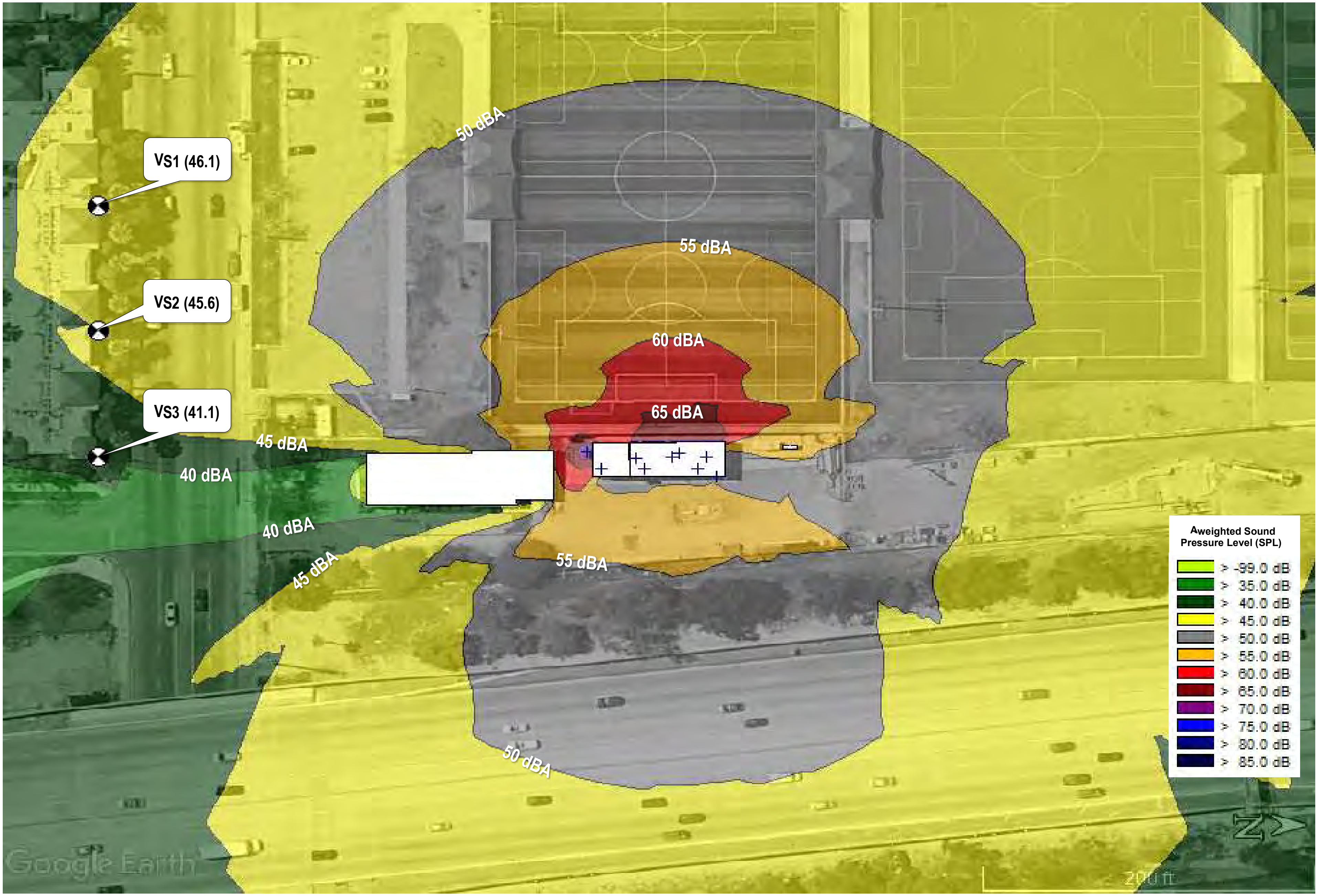
SOURCE: Dudek 2022

DUDEK

0 33.5 67 Feet

FIGURE D-3

Predicted Operation Noise from North Hollywood West Chlorination Station (approx. 300 PPD)



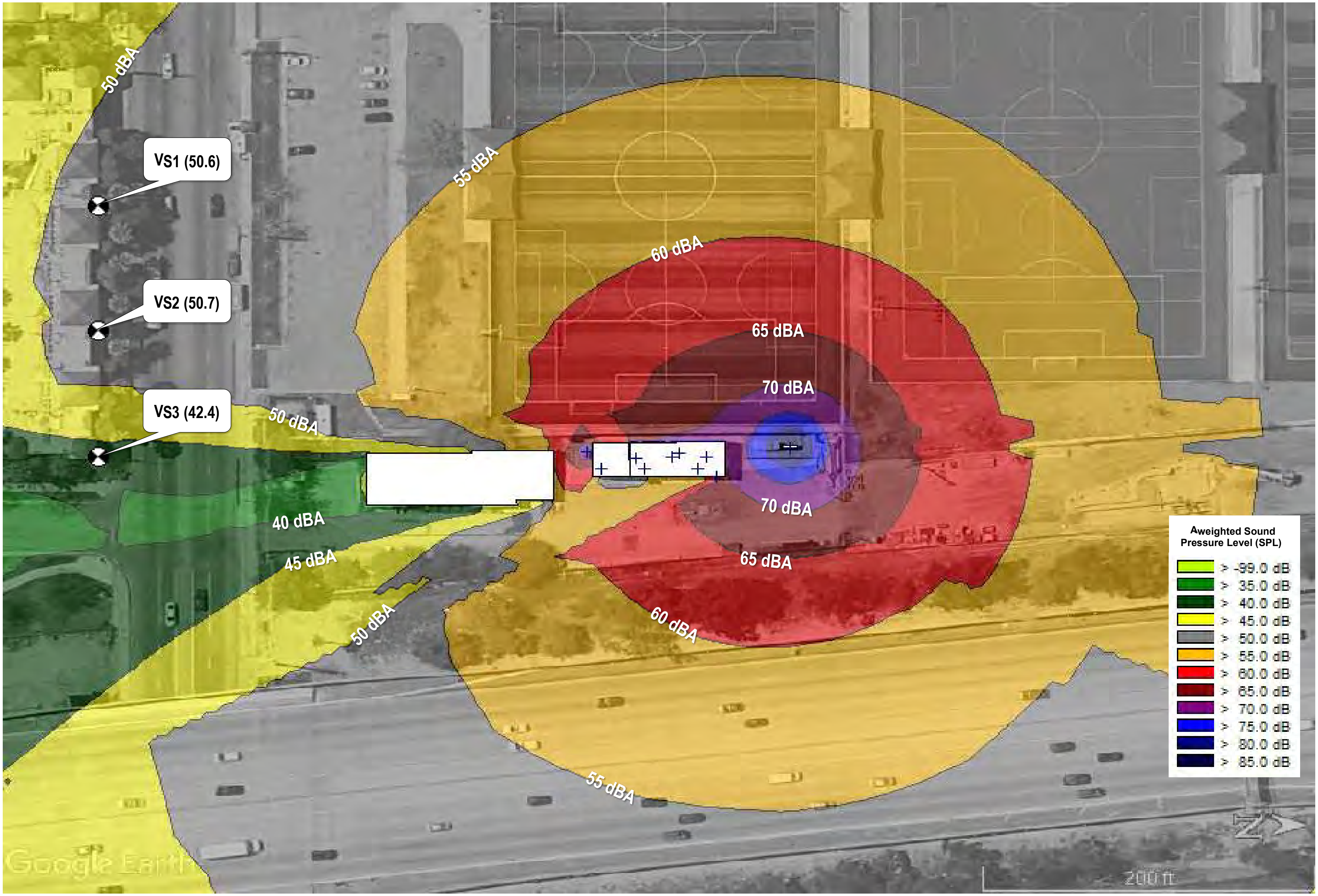
SOURCE: Dudek 2022

DUDEK

0 33.5 67 Feet

FIGURE D-4

Predicted Operation Noise from North Hollywood West Chlorination Station (1200 PPD)



SOURCE: Dudek 2022

DUDEK

0 33.5 67 Feet

FIGURE D-5

Predicted Operation Noise from North Hollywood West Chlorination Station (1200 PPD plus generator test)

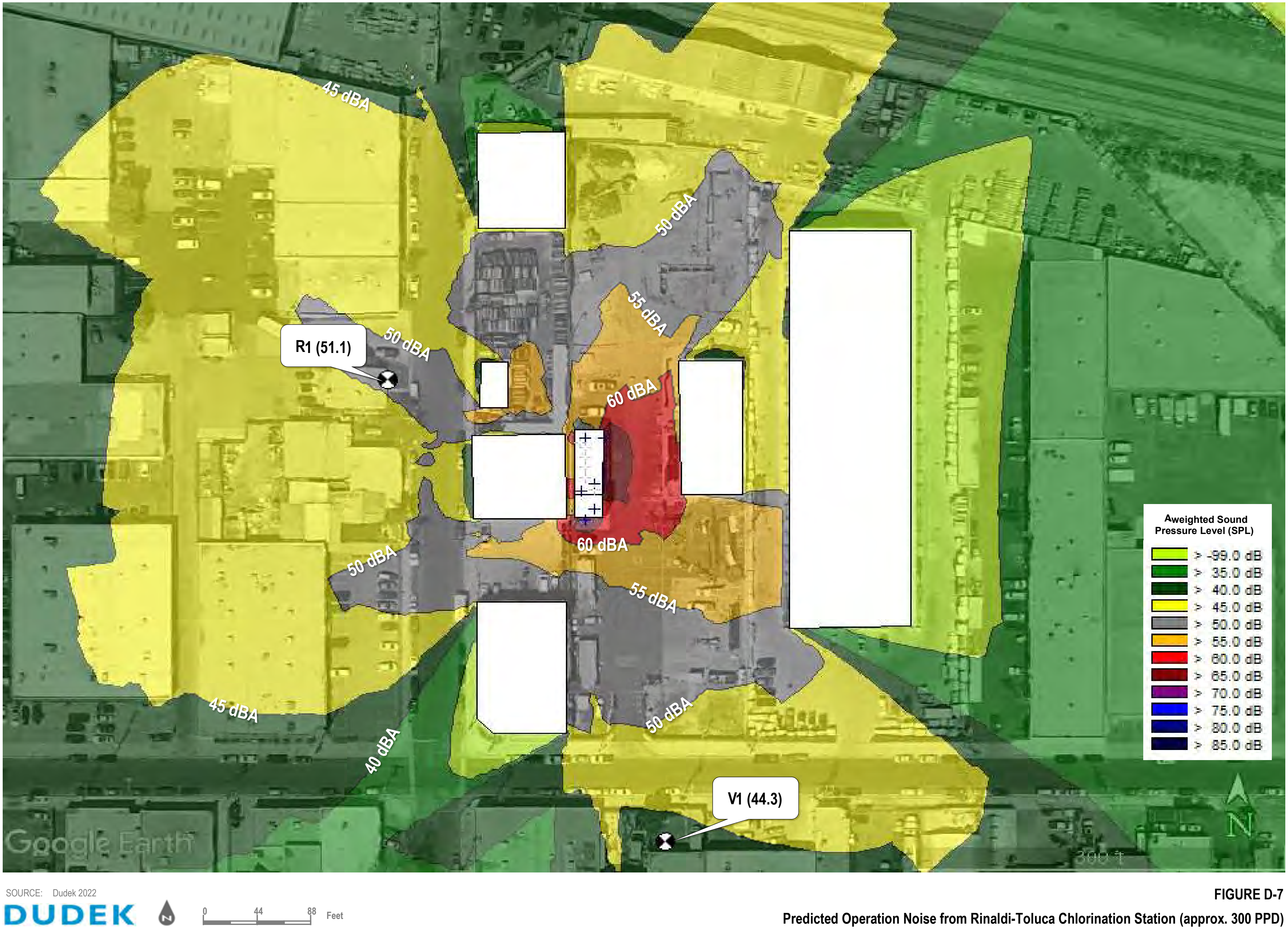
SOURCE: Dudek 2022

DUDEK

0 44 88 Feet

FIGURE D-6

Predicted Operation Noise from Rinaldi-Toluca Chlorination Station (2000 PPD)



SOURCE: Dudek 2022

DUDEK

FIGURE D-7

Predicted Operation Noise from Rinaldi-Toluca Chlorination Station (approx. 300 PPD)

APPENDIX E

Transportation

LADWP North Hollywood Chlorination Stations Project
Estimated Truck Trips

Peak Daily Roundtrips

		Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26
22 WD/Mo	**Passenger Car Equivalent (PCE)**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**
Haul Truck	3	0	0	7	8	1	0	0	0	0	0	0	1	0	0	0	0	2	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
Materials Delivery	2	1	1	2	2	2	2	2	2	3	3	3	3	2	1	1	2	3	3	2	2	2	2	2	2	2	1	0	0	0	0	0	0	0
Concrete Trucks	2	0	0	0	1	1	2	1	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
Total Truck Roundtrips Per Month		22	22	198	242	88	88	66	66	88	88	88	110	44	22	22	44	132	132	66	66	88	88	66	44	44	22	0	0	0	0	0	0	0
Total Truck One-Way Trips Per Month		44	44	396	484	176	176	132	132	176	176	176	220	88	44	44	88	264	264	132	132	176	176	132	88	88	44	0	0	0	0	0	0	0
Peak Daily Truck One-Way Trips		2	2	18	22	8	8	6	6	8	8	8	10	4	2	2	4	12	12	6	6	8	8	6	4	4	2	0	0	0	0	0	0	0
	Haul Truck Trips	0	0	42	48	6	0	0	0	0	0	0	6	0	0	0	0	12	12	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0
	Materials Delivery Truck Trips	4	4	8	8	8	8	8	8	12	12	12	12	8	4	4	8	12	12	8	8	8	8	8	8	8	4	0	0	0	0	0	0	0
	Concrete Truck Trips	0	0	0	4	4	8	4	4	4	4	4	4	0	0	0	0	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0
	Total Truck Trips (PCE)	**4**	**4**	**50**	**60**	**18**	**16**	**12**	**12**	**16**	**16**	**16**	**22**	**8**	**4**	**4**	**8**	**28**	**28**	**12**	**12**	**18**	**18**	**12**	**8**	**8**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

LADWP North Hollywood Chlorination Stations Project
Estimated Worker Vehicle Trips

Peak Daily Worker Roundtrips

		Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26
22 WD/Mo		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**
Workers		1	3	9	19	19	24	25	26	31	26	26	31	26	26	34	33	27	27	20	21	21	24	25	20	16	13	4	4	4	4	2	2	2
	Total Worker Roundtrips Per Month	22	66	198	418	418	528	550	572	682	572	572	682	572	572	748	726	594	594	440	462	462	528	550	440	352	286	88	88	88	88	44	44	44
	Peak Daily Worker One-Way Trips	2	6	18	38	38	48	50	52	62	52	52	62	52	52	68	66	54	54	40	42	42	48	50	40	32	26	8	8	8	8	4	4	4

Estimated Peak Daily Total PCE Trips (Worker and Trucks)

	Peak Daily Trips (Month of Oct-23)	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26
Peak Daily Worker Trips	**38**	2	6	18	38	38	48	50	52	62	52	52	62	52	52	68	66	54	54	40	42	42	48	50	40	32	26	8	8	8	8	4	4	4
Peak Daily Truck Trips (PCE)	**60**	4	4	50	60	18	16	12	12	16	16	16	22	8	4	4	8	28	28	12	12	18	18	12	8	8	4	0	0	0	0	0	0	0
Total PCE Trips (Worker & Trucks)	**98**	**6**	**10**	**68**	**98**	**56**	**64**	**62**	**64**	**78**	**68**	**68**	**84**	**60**	**56**	**72**	**74**	**82**	**82**	**52**	**54**	**60**	**66**	**62**	**48**	**40**	**30**	**8**	**8**	**8**	**8**	**4**	**4**	**4**