FINAL INITIAL STUDY/MITIGATED NEGATIVE DECLARATION FOR THE BALDWIN LAKE AND TULE POND RESTORATION PROJECT

STATE CLEARINGHOUSE NO. 2024110093

PREPARED FOR:

Los Angeles County Flood Control District
900 S. Fremont Avenue
Alhambra, CA 91803

PREPARED BY:

AECOM
300 S. Grand Avenue, 9th Floor
Los Angeles, CA 90071

March 2026

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Acronyms

µg/m3	micrograms per cubic meter
µg/L	micrograms per liter
AB	Assembly Bill
ADA	Americans with Disabilities Act
AQMP	air quality management plan
Basin	South Coast Air Basin
Bgs	below ground surface
BERD	Built Environment Resource Directory
BMPs	best management practices
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
Cal OSHA	California Division of Occupational Safety and Health
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CGC	California Government Code
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO2 equivalents
County	County of Los Angeles
CRHR	California Register of Historical Resources
CWA	Clean Water Act
CY	Cubic yards
dBA	A-weighted sound level
DBH	diameter at breast height
District	Los Angeles County Flood Control District
DPR	County of Los Angeles Department of Parks and Recreation
DHS	Department of Health Services
DTSC	Department of Toxic Substances Control
EDR	Environmental Data Resources
EIR	environmental impact report
EPA	U.S. Environmental Protection Agency
ESA	Federal Endangered Species Act
EWMP	Enhanced Watershed Management Program
FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazards Severity Zone
FRA	Federal Responsibility Area
FTA	Federal Transit Administration
GHG	greenhouse gas
GWP	global warming potential
HRI	Historic Resources Inventory
I	Interstate

IS	Initial Study
IS/MND	initial study/mitigated negative declaration
LACABGHD	Los Angeles County Arboretum and Botanic Garden Historic District
LACO Register	Los Angeles County Historic Register
L_{eq}	equivalent sound level
LID	low-impact development
L_{max}	maximum sound level
L_{min}	minimum sound level
LST	localized significance threshold
L_{xx}	percentile-exceeded sound level
MBTA	Migratory Bird Treaty Act
MLD	Most Likely Descendent
MM	Mitigation Measure
MMRP	Mitigation Monitoring and Reporting Program
MND	mitigated negative declaration
MRZ	Mineral Resource Zone
MS4	Municipal Separate Storm Sewer System
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
ND	negative declaration
NO_2	nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	ozone
Pb	lead
PCR	Public Code of Regulations
PEIR	program environmental impact report
PM	Particulate Matter
PM_{10}	Respirable Particulate Matter
$PM_{2.5}$	fine particulate matter
Ppb	parts per billion by volume
Ppm	parts per million by volume
PW	County of Los Angeles, Department of Public Works
RCP	reinforced concrete pipe
RCRA	Recovery Act of 1976
RWQCB	Regional Water Quality Control Board
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SEAs	Significant Ecological Areas
SOI	United States Secretary of the Interior
SO_2	Sulfur Dioxide
SR	State Route
SRA	Source Receptor Area
SRA	State Wildfire Responsibility Area
SWPPP	storm water pollution prevention plan
SWRCB	State Water Resources Control Board
TMDL	total maximum daily load
U.S.C.	U.S. Government Code

USFWS	U.S. Fish and Wildlife Service
VHFHSZ	Very High Fire Hazard Severity Zones
VOC	volatile organic compounds
WRD	Water Replenishment District of Southern California

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Chapter 1
Introduction

Purpose and Organization of this Document

This Final Initial Study/Mitigated Negative Declaration (IS/MND) (State Clearinghouse No. 2024110093) has been prepared according to the California Environmental Quality Act (CEQA) (California Public Resources Code Section 2100, et. seq.) and the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3) to evaluate and disclose the potential environmental impacts associated with implementation of the proposed *Baldwin Lake and Tule Pond Restoration Project* (Project) in Los Angeles County, California. The Los Angeles County Flood Control District (District), as the Lead Agency under the California Environmental Quality Act (CEQA), has prepared this Final Initial Study/Mitigated Negative Declaration. The Final Mitigated Negative Declaration presents the environmental information and analyses that have been prepared for the proposed Project, including comments received addressing the Draft Initial Study/Mitigated Negative Declaration, and responses to those comments. The Final Initial Study/Mitigated Negative Declaration will be used by the Board of Supervisors in the decision-making process for the proposed Project. This Final Initial Study/Mitigated Negative Declaration is organized as follows:

- Chapter 1, Introduction
- Chapter 2, Response to Comments on the Draft Initial Study/Mitigated Negative Declaration
- Chapter 3, Clarifications and Modification to the Draft Initial Study/Mitigated Negative Declaration
- Appendix A, Draft Initial Study/Mitigated Negative Declaration with Appendices
- Appendix B, Mitigation Monitoring and Reporting Program

Project Background and Location

The Baldwin Lake and Tule Pond Restoration Project (proposed Project, or Project) is located at the Los Angeles County Arboretum and Botanic Garden and proposes several improvements to Baldwin Lake and Tule Pond to restore the aquatic ecosystem, improve water quality, increase stormwater detention, and provide additional aesthetic, education, and operational benefits to Arboretum visitors. The Arboretum provides enjoyment and learning opportunities to the public regarding nature, horticulture, and historic resources. Throughout the year, classes, tours, and concerts attract visitors from the community and the greater Los Angeles area, attracting nearly 800,000 visitors during the 2021-2022 fiscal year with similar visitor attendance expected in coming years. In addition, the Arboretum has been used continuously as a location site for many films, television series, commercials and videos. The Project improvements include the following components:

- Removal of 26,000 cubic yards (CY) of sediment to deepen the Lake and Pond;
- Installing a liner, and aeration units to improve the aquatic ecosystem at the Lake;
- Installation of an ultrasonic algae remediation system to reduce algae growth at the Lake;
- Realignment of one storm drain outlet and reconstruct three (3) storm drain outlets with energy dissipators to minimize erosion;

- Restoration of the Lake's historic retaining wall perimeter, and other Lake and Pond shoreline stabilization such as concrete riprap;
- Landscaping improvements, including installation of a viewing deck at the Lake.

The Project site is located at 301 North Baldwin Avenue, in the City of Arcadia, California. The Arboretum is in the northwestern portion of the San Gabriel Valley. The Arboretum is bounded by the Interstate-210 (I-210) freeway to the north, Baldwin Avenue on the east, Hugo Reid Drive to the south, and Golden West Avenue on the west.

Environmental Review Process

The District, in accordance with CEQA, prepared a Notice of Intent (NOI) to adopt an Initial Study/Mitigated Negative Declaration, which was released to the public and filed with the State Clearinghouse in the Office of Planning and Research on November 1, 2024. The NOI provided notice to the public and public agencies that the District would be adopting an IS/MND, provided the location and description of the proposed Project, and the dates of the public review period.

Notification of the availability of the Draft IS/MND was distributed to interested parties and involved public agencies starting the 30-day public review period (November 1, 2024, through December 2, 2024. During that timeframe, members of the public and public agencies had the opportunity to review the Draft IS/MND and provide comments on the document, including adequacy of the impact analyses. A total of 4 written comment letters were received during public review.

While Section 15074(b) of the State CEQA Guidelines requires that the Lead Agency consider any comments received on the Draft IS/MND during the public review period, it does not mandate a formal, written response to the comments. However, the District elected to prepare written responses to comments to ensure public transparency, address concerns about potential impacts, and demonstrate that the Lead Agency is acting in good faith. Comment letters, and lettered responses to each comment are provided in Chapter 2, *Response to Comments*, of this Final IS/MND.

Chapter 2
Responses to Comments on the Draft Initial Study/Mitigated Negative Declaration

Introduction

The Baldwin Lake and Tule Pond Restoration Project Initial Study/Mitigated Negative Declaration (IS/MND) was distributed on November 1, 2024, for a 30-day public review period pursuant to the California Environmental Quality Act (CEQA) and its implementing guidelines. The purpose of the public review period was to provide interested public agencies, organization, and individuals the opportunity to comment on the contents and accuracy of the document. The IS/MND and Notice of Completion were distributed to the California Office of Planning and Research, State Clearinghouse. A Notice of Intent (NOI) to Adopt a Mitigated Negative Declaration was distributed to approximately 50 agencies, Native American tribal contacts, and community stakeholders, as well as 3,570 property owners and residents. The NOI informed them of where the IS/MND could be reviewed and how to comment. Copies of the IS/MND were made available to the public to review at the County of Los Angeles Department of Public Works, Stormwater Planning Division, 900 South Fremont Avenue, 11th floor, Alhambra, CA 91803. A copy of the document was also posted online at: https://pw.lacounty.gov/projects/baldwin-lake-tule-pond-restoration.

Responses to Written Comments to the IS/MND

During the public review period, a total of 4 written comment letters were received during public review, as shown in Table 2-1 below. Each written comment letter is included herein and is assigned a number code, and individual comments in each letter have also been coded to facilitate the responses.

The comments and associated responses are arranged by the date on which the comment letter was received starting with agencies and organizations, followed by the commenter submitted by an individual. Each comment in the letters has been numbered and is referenced in the responses that directly follow the comment letter. No comments were received from public agencies.

None of the comments received necessitated changes to the environmental analysis or other text within the IS/MND. The conclusions included in the draft MND continue to be supported and remain the same.

Table 2-1. List of Written Comment Letters Received in Response to the IS/MND

Letter #	Agency/Organization/Individual	Date	Page # of Response
Organization			
1	Gabrieleno Band of Mission Indians – Kizh Nation *Signed: Brandy Sala*	November 1, 2024	5-4
Individual			
2	Medeiros, Greg	November 3, 2024	5-6
3	Medeiros, Greg	November 8, 2024	5-8
4	Downhower, A	December 1, 2024	5-10

Subject: Re: Baldwin Lake and Tule Pond Restoration Project IS/MND Public Review
Sent: 11/1/2024, 12:07:15 PM
From: Gabrieleno Administration<admin@gabrielenoindians.org>
To: Keller, Lori

Comment Letter 1

This Message Is From an Untrusted Sender
You have not previously corresponded with this sender.
Report Suspicious

Hello Lori

Thank you for your email. We would like to set up a time to discuss the language.

Thank you

Brandy Salas
Admin Specialist
Gabrieleno Band of Mission Indians - Kizh Nation
PO Box 393
Covina, CA 91723
Office: 844-390-0787
website: www.gabrielenoindians.org

The region where Gabrieleño culture thrived for more than eight centuries encompassed most of Los Angeles County, more than half of Orange County and portions of Riverside and San Bernardino counties. It was the labor of the Gabrieleño who built the missions, ranchos and the pueblos of Los Angeles. They were trained in the trades, and they did the construction and maintenance, as well as the farming and managing of herds of livestock. "The Gabrieleño are the ones who did all this work, and they really are the foundation of the early economy of the Los Angeles area". "That's a contribution that Los Angeles has not recognized--the fact that in its early decades, without the Gabrieleño, the community simply would not have survived."

1-1

On Fri, Nov 1, 2024 at 11:16 AM Keller, Lori <Lori.Keller@aecom.com> wrote:

> Good morning,
>
> This email is to inform you that the Baldwin Lake and Tule Pond Restoration Project Initial Study/Mitigated Negative Declaration (IS/MND) prepared under the California Environmental Quality Act (CEQA) has been released for public review. The Baldwin Lake and Tule Pond Restoration Project is a collaborative effort by the Los Angeles County Flood Control District, the Los Angeles County Department of Parks and Recreation, and the Arboretum Foundation to restore and enhance two prominent features at the Los Angeles County Arboretum and Botanic Garden: Baldwin Lake (Lake) and Tule Pond (Pond).
>
> Please see the attached Notice of Intent (NOI) for more information on the project, where to review CEQA documentation, how to provide comments, and more.
>
> Also, please see further detailed information on the project at: Baldwin Lake Tule Pond Restoration - LA County Public Works
>
> Thank you.

Comment Letter 1: Gabrieleno Band of Mission Indians – Kizh Nation

Response 1-1

The commenter requests to set up a time to discuss the language.

The comment is noted. As described in the IS/MND, Chapter 3, Section XVIII Tribal Cultural Resources, in compliance with AB 52, on September 7, 2023, notification letters with invitations to consult on the Project were sent via email with delivery confirmation to various tribal representatives, including the Gabrieleno Band of Mission Indians – Kizh Nation. In accordance with PRC Section 21080.3.1(b)(2), the tribes were provided 30 days to request consultation. The request to consult response window closed on October 8, 2023.

The Gabrieleno Band of Mission Indians—Kizh Nation (Kizh Nation), Mr. Andrew Salas and Ms. Christina Swindall Martinez, received the formal notification and AB 52 consultation request letter on September 13, 2023. On September 15, 2023, the Kizh Nation requested formal consultation in an email. The District began consultation coordination with the Kizh Nation via e-mail starting on September 28, 2023, through October 10, 2023, and received confidential information regarding tribal cultural resources at the proposed Project site over e-mail on October 12, 2023. On November 16, 2023, the District continued the email consultation with additional District representatives and DPR representatives and scheduled a follow-up teleconference for November 28, 2023. Due to a schedule conflict for the Kizh Nation, the meeting was rescheduled and the teleconference was held on November 29, 2023, with the Kizh Nation, the District, and DPR. On June 18, 2024, the District shared draft mitigation measures for the Project with the Kizh Nation via email; subsequently, the Kizh Nation responded on June 19, 2024, with a number of requested edits to the draft mitigation measures to safeguard their tribal cultural resources. The District responded with edits on June 25, 2024, and the Tribe called and left a voicemail to state their emails were down, but they received the email and would get back to the District soon. The Kizh Nation and the District exchanged additional emails on June 26, 2024, through August 6, 2024, with minor edits to the draft mitigation measure language to clarify the tribal monitors would be retained prior to commencement of any ground-disturbing activities on soils and describing the distinction between the archaeological element and the tribal cultural resources element. In the District's email on August 6, 2024, the District also clarified that mitigation measures are not Tribe specific, and we refer to the Native American Heritage Commission to determine the Most Likely Descendent per PRC Section 5097.98, if Native American human remains and/or associated grave goods are discovered at the Project site. On August 6, 2024, the Kizh Nation responded via email restating the draft mitigation measures do not adequately protect their tribal cultural resources and attached the same mitigation measure language that was shared on November 28, 2023. The District has considered all information provided by the Kizh Nation during the consultation for the Project, but after acting in good faith and in consideration of the Tribe's requests and multiple rounds of emails and edits to the draft mitigation measures, the District concludes that a reasonable effort has been put forth and the District and the Tribe have been unable to reach a mutual agreement regarding the mitigation measure language (PRC Section 21080.3.2(b)). A letter was sent via certified mail to Mr. Andrew Salas of the Gabrieleno Band of Mission Indians—Kizh Nation on October 28, 2024, concluding consultation pursuant to PRC Section 21080.3.2(b). The AB 52 consultation with the Gabrieleno Band of Mission Indians – Kizh Nation was closed on October 28, 2024.

Comment Letter 2

From: Greg Medeiros <gregmedeiros@att.net>
Sent: Sunday, November 3, 2024 1:58 PM
To: PW-SWQD_CEQA <SWQD_CEQA@dpw.lacounty.gov>
Subject: Baldwin Lake and Tule Pond Restoration

CAUTION: External Email. Proceed Responsibly.

Grace Komjakraphan-Tek,

65,00 cubic yards is a lot of sediment. Can you tell me the number of truck loads, the haul route, the days and hours of operation and the length of time for the removal. What mitigation, if any, is being proposed to mitigate the additional traffic on the adjacent neighborhood. Thank you for your assistance. 2-1

Greg

Comment Letter 2: Greg Medeiros

Response 2-1

The commenter states that the 65,000 cubic yards proposed to be removed is a lot of sediment. The commenter requested the number of truck loads, the haul route, the days and hours of operation and length of time for the removal, and what mitigation, if any, is being proposed to mitigate the additional traffic on the adjacent neighborhood.

A response to the individual was sent November 6, 2024, acknowledging receipt of the comment and noting that all comments received during the public review period will be compiled and addressed pursuant to State CEQA Guidelines.

Please refer to Response 3-1 below for the detailed response.

Comment Letter 3

From: Greg Medeiros <gregmedeiros@att.net>
Sent: Friday, November 8, 2024 10:24 AM
To: PW-SWQD_CEQA <SWQD_CEQA@dpw.lacounty.gov>
Subject: RE: Baldwin Lake and Tule Pond Restoration

CAUTION: External Email. Proceed Responsibly.

Grace,

Thank you for the reply. However, my earlier email was a question not a comment. Could you or the project designer provide me with an answer regarding my truck traffic question? 3-1

Greg

Comment Letter 3: Greg Medieros

Response 3-1

The commenter responded to the November 6, 2024, response, again requesting an answer regarding their previous truck traffic question.

Comment is noted.

PW staff sent the following response via email on November 7, 2024:

Please refer to the following chapters in the Draft IS/MND (available here) for information pertaining to your questions which were used to conduct the CEQA analysis:

Summary of mitigation measures are provided on pgs. viii to xvi.

Chapter 2, Project Description

- Please see the sections pertaining to Project Construction (pgs. 2-11 to 2-15) which will provide information on estimated truck trips per day, hours of operation, and anticipated construction phasing schedules.
- Map, Figure 2-6 Construction Staging and Haul Route, pg. 2-13

Chapter 3, Section IX. Hazards and Hazardous Materials (starting pg. 3-72) and Section XVII. Transportation and Traffic

- These two chapters describe construction truck traffic and haul routes.
- The trucks going to and from the site would exit from the joint Public Works Field Office/Arboretum Overflow parking lot along Baldwin Avenue to access the I-210.
- The project will coordinate with the City of Arcadia on required permits and a Traffic and Signal Control Plan will be prepared.

In addition to the information provided above on November 7, 2024, it should also be noted that the Project would implement BMPs during the construction phase such as a Traffic Management Plan (see Section XVII. Transportation and Traffic), as well as reasonable advance notification (e.g., flyers) would be provided to fire, police, and emergency medical services, local residences, homeowners and businesses adjacent to, and within areas potentially affected by the proposed Project of any road and parking restrictions in their vicinity. The notices would include contact information for comments or questions related to construction activities (see Construction Best Management Practices in Chapter 2, Project Description).

Comment Letter 4

From: AD <annickjd@gmail.com>
Sent: Sunday, December 1, 2024 12:28 PM
To: PW-SWQD_CEQA <SWQD_CEQA@dpw.lacounty.gov>
Subject: Comment re: proposed work on Baldwin Lake and Tule Pond

CAUTION: External Email. Proceed Responsibly.

Dear Ms. Komjakraphan-Tek-

I am a resident of Arcadia and received the notice re: the proposed work on Baldwin Lake and the Tule Pond. I am submitting this email as a comment/ question. 4-1

I am in favor of strengthening/ restoring the two bodies of water on the Arboretum premises. However, my one concern is what steps will be taken to mitigate any harm to the existing wildlife which currently lives in the lake and pond? In particular, I am wondering about the numerous turtles that have inhabited those areas for decades. The reptiles are popular with the families, and particularly children, who visit the Arboretum. 4-2

Is a plan in place to move and maintain the wildlife that inhabits these connected areas? The impact on them is a direct impact on our local environment. 4-3

Thank you,
A. Downhower
634 Huntington Dr.
Arcadia, CA

Comment Letter 4: A. Downhower

Response 4-1

Commenter is in favor of restoring the water bodies at the Arboretum. Comment is noted.

Response 4-2

Commenter is concerned with what steps will be taken to mitigate any harm to existing wildlife which currently lives in the Lake and Pond, specifically the turtles, which are popular with the families who visit the Arboretum. Comment is noted.

As described in the IS/MND, Section IV. Biological Resources, and in Appendix B, Biological Resources Memorandum, during the biological field survey conducted for the Project, high quality habitat for aquatic species such as turtles was observed, including permanent water sources, readily available basking options and upland habitat throughout the shoreline. Further, during the biological field survey, several unidentifiable turtles resembling southwestern pond turtles (*Emys pallida*) were observed basking at the Lake. However, due to the distance of the observation, an identification could not be made with 100 percent certainty. While the southwestern pond turtle prefers slow moving or standing water sources, similar to conditions at both the Lake and Pond, and historical records of the Arboretum's wildlife inventory indicate this species was once present at the Arboretum, this species is generally less common in urban settings. In addition, field surveys observed numerous red-eared sliders (*Trachemys scripta elegans*) within each water body. This species commonly outcompetes the Southwester pond turtle for resources.

As southwestern pond turtles are considered a special-status wildlife species, and suitable habitat occurs within the BSA, Mitigation Measure BIO-2 will develop a southwestern pond turtle management and relocation plan to detail the methods and procedures to properly relocate turtles prior to construction.

In addition to Mitigation Measure BIO-2, Mitigation Measure BIO-3 minimizes impacts to wetland vegetation that could serve as habitat for special-status species such as the southwestern pond turtle, and Mitigation Measure BIO-6 minimizes impacts to aquatic resources.

Response 4-3

Commenter would like to know if a plan is in place to move and maintain the wildlife that inhabits these connected areas.

As described in the IS/MND, Section IV. Biological Resources, and in Appendix B, Biological Resources Memorandum, Mitigation Measure BIO-2 will develop a southwestern pond turtle management and relocation plan to detail the methods and procedures to properly relocate turtles prior to construction.

Further, potential impacts to other wildlife will be minimized through implementation of Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, which address potential impacts to nesting birds, southwestern pond turtles, special-status species habitat removal, bats, protected trees, and aquatic resources. Each of these mitigation measures are detailed in the IS/MND, Section IV. Biological Resources.

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Chapter 3
Clarifications and Modifications to the Draft IS/MND

The Los Angeles County Flood Control District (District), the Lead Agency under CEQA, prepared an IS/MND for the Project. The IS/MND was prepared in accordance with CEQA (Public Resources Code §21000 et seq.) and the State CEQA Guidelines (Title 14, California Code of Regulations, §15000 et seq.). A 30-day public review period was held from November 1, 2024, to December 2, 2024.

State CEQA Guidelines §15073.5(a) requires that a lead agency re-circulate an IS/MND when "significant new information" is added to a draft IS/MND and "when the document must be substantially revised" after public review of the availability of the Draft IS/MND has occurred, but before the Final IS/MND is certified. A "substantial revision" includes: (1) identification of a new, avoidable significant effect requiring mitigation measures or project revisions and/or (2) determination that proposed mitigation measures or project revisions will not reduce potential effects to less than significance and new measures or revisions must be required. However, according to §15073.5(a) recirculation of the IS/MND is not required when new information is added which merely clarifies, amplifies, or makes insignificant modifications to the IS/MND.

The following clarifications and modifications are intended to update the Draft IS/MND in response to modifications to the Project by the Lead Agency, and include minor editorial changes and minor changes or clarifications to the Project. These changes constitute the Final IS/MND, to be presented to the Los Angeles County Board of Supervisors for adoption. None of the changes to the IS/MND would necessitate recirculation of the document. Revisions made to the IS/MND have not resulted in new significant impacts or mitigation measures, nor has the severity of an impact increased. None of the CEQA criteria for recirculation have been met, and recirculation of the IS/MND is not warranted, as described in State CEQA Guidelines §15073.5(a).

The changes to the IS/MND are listed by section, page number, and paragraph number if applicable. Text which has been removed is shown with a ~~strikethrough~~ line, while text that has been added is shown as underlined. All the changes described in this section have also been made in the corresponding Final IS/MND sections.

Final IS/MND Page	Clarification/Revision
v - vii	*An editorial change has been made to the Acronyms list on these pages, as follows. These changes represent minor clarifications to the Draft IS/MND as it adds acronyms from the Draft IS/MND that were not defined earlier. These changes are not substantive, do not result in a new or worsened impact, and the significance conclusion would remain the same.*

FHSZ	Fire Hazards Severity Zone
FRA	Federal Responsibility Area
SRA	State Wildfire Responsibility Area
VHFHSZ	Very High Fire Hazard Severity Zones

viii *A clarification has been made to the fifth bullet point on this page, removing the text about the hydrodynamic separators and media filtration system, as follows. These changes represent minor clarifications to a reduced scope for the project. These changes are not substantive, does not result in a new or worsened impact, and the significance conclusion would remain the same.*

The Project proposes to remove sediment and deepen Baldwin Lake (Lake) and Tule Pond, (Pond), install a liner and aeration units at the Lake to improve the aquatic ecosystem at the Lake, realign one storm drain outlet and reconstruct three storm drain outlets with energy dissipators to minimize erosion~~, install hydrodynamic separators and media filtration to treat residential runoff~~.

xiv *A clarification has been made to the first sentence of the first paragraph and the first sentence of the second paragraph of Mitigation Measure TCR-1 as follows. These changes represent minor clarifications to the Draft IS/MND to better define the language of Mitigation Measure TCR-1. These changes are not substantive, does not result in a new or worsened impact, and the significance conclusion would remain the same.*

Los Angeles County Public Works shall ~~invite~~ retain a Native American monitor from Tribe(s) that have engaged in consultation and requested monitoring prior to the commencement of any ground-disturbing activity in native soils and will provide compensation for the Native American monitor for their time spent.

The Native American monitor(s) will work with the Project's ~~SOI-qualified~~ qualified Archaeologist during ground-disturbing activities, identify potential Native American Tribal Cultural Resources (TCRs), and communicated concerns regarding TCRs Directly to PW and DPR.

xv *A clarification has been made to the first sentence of the second paragraph of MM TCR-2, as follows. This change represents a minor clarification to the Draft IS/MND to better define the language of Mitigation Measure TCR-2. This change is not substantive, does not result in a new or worsened impact, and the significance conclusion would remain the same.*

Upon discovery of any TCR or potential TCR, all construction activities in the immediate vicinity of the discovery shall cease within a radius deemed appropriate by the ~~SOI qualified~~ qualified archaeologist and Native American monitor(s).

1-1 *An editorial change has been made to the fourth paragraph on this page, as follows. This change is not substantive, does not result in a new or worsened impact, and the significance conclusion would remain the same.*

The District, as lead agency under CEQA, prepared an IS/MND in accordance with CEQA (Public Resources Code §21000 et seq.) and the State CEQA Guidelines (Title 14, California Code of Regulations, §15000 et seq.). A 30-day public review period was held from November 1, 2024, to December 2, 2024.

2-1 *A clarification has been made to the first bullet point in this section reducing the amount of sediment being removed from the Lake and Pond, as follows. This change represents a minor clarification to the Draft IS/MND as it reduces the amount of sediment that would be removed from the Lake and Pond. This change is not substantive, does not result in a new or worsened impact, and the significance conclusion would remain the same.*

Removal of ~~65,000~~ 26,000 cubic yards (CY) of sediment to deepen the Lake and Pond.

2-1 *A clarification has been made to the fifth bullet point on this page, removing the text regarding the hydrodynamic separators and filtration system, as follows. This change represents a minor clarification to the Draft IS/MND as this element of the proposed Project has been eliminated from the project design. This change is not substantive, does not result in a new or worsened impact, and the significance conclusion would remain the same.*

~~Treatment of residential street runoff at Pond by installation of hydrodynamic separators and media filtration~~

2-8 *A clarification has been made to the third bullet point on this page, revising the amount of sediment removed from the Lake, as follows. This change represents a minor clarification to the Draft IS/MND. This change is not substantive, and does not result in a new or worsened impact because the CEQA analysis is based on a depth of up to 14 feet. The significance conclusion would remain the same.*

Removal of excess sediment and organic material for a proposed lake depth up to 5 feet (excavation depth has been analyzed up to 14 feet).

2-9 *A clarification has been made to the seventh bullet point on this page, removing the text regarding the hydrodynamic separators and filtration system, as follows. This change represents a minor clarification to the Draft IS/MND as this element of the proposed Project has been eliminated from the project design. This change is not substantive, does not result in a new or worsened impact, and the significance conclusion would remain the same.*

~~Install four in-line treatment systems, which will include diversion structures, hydrodynamic separator units (HDS) and media filtration systems along the three existing storm drains and proposed Old Ranch Road Storm Drain realignment for further stormwater treatment before runoff outlets into the Pond. The HDS units will treat runoff for trash, sediment, and oils and the media filtration systems will treat any additional sediment, debris, free-floating oil, heavy metals and phosphorus not captured by the HDS units.~~

2-9 *A clarification has been made to the eighth bullet point on this page, removing the text regarding the proposed new access road, as follows. This change represents a minor clarification to the Draft IS/MND as this element of the proposed Project has been eliminated from the project design. This change is not substantive, does not result in a new or worsened impact, and the significance conclusion would remain the same.*

~~Construct three new ¾" crushed rock maintenance access road along the west side of the Arboretum for future maintenance access to the four proposed HDS units and media filtration units. The access roads to be constructed along the west side within the Arboretum property are near the intersection of Vaquero and Old Ranch Road (Old Ranch Road), near Vaquero Road and Golden West Avenue (D1), and near Monte Verde Drive and Golden West Avenue (D2 & D3). The length and width of the access roads vary at different segments; the widest access road is at D1 and ranges from approximately 12 to 45 feet and the length varies from 165 feet (Old Ranch) to 281 feet D2 & D3).~~

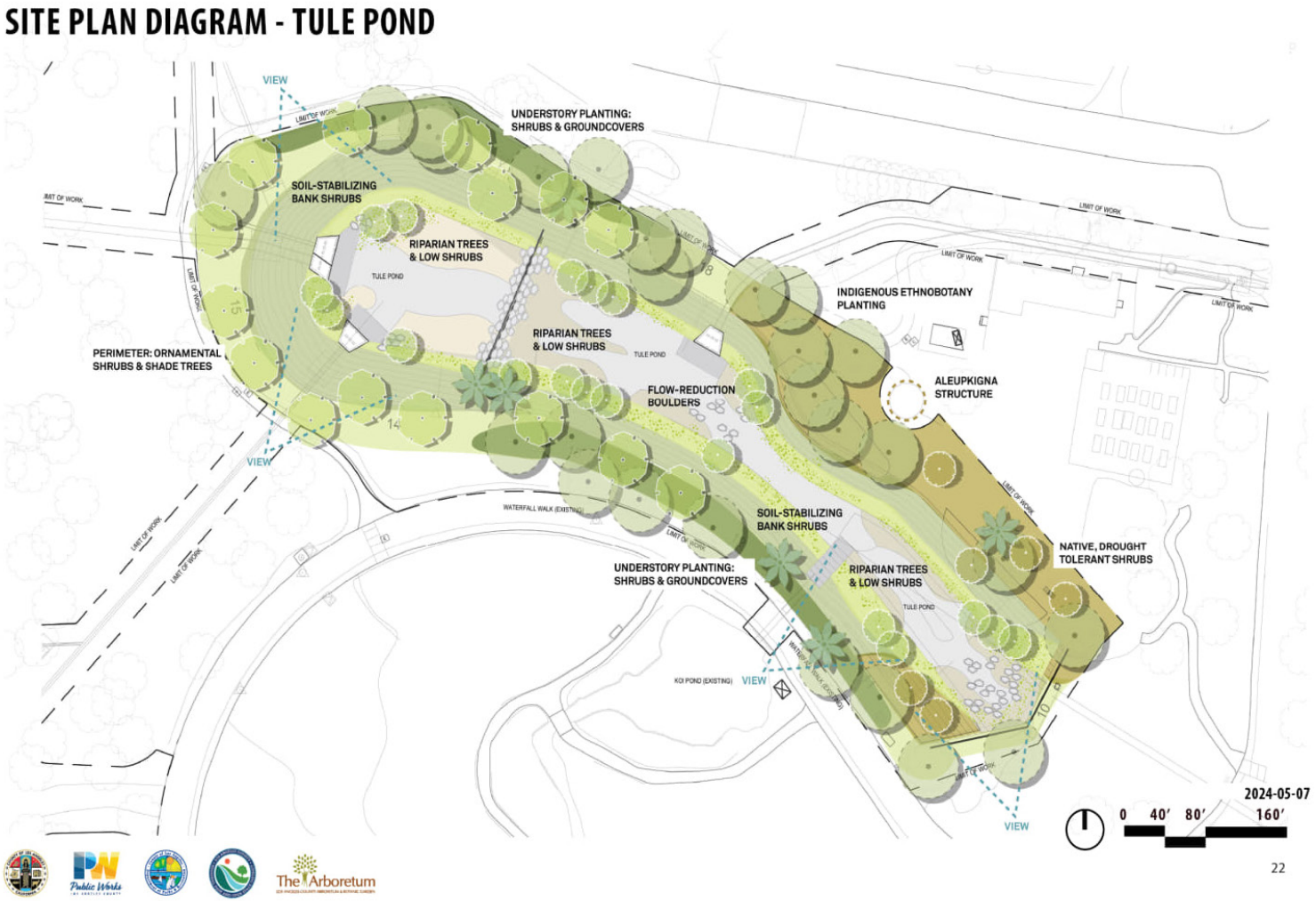
2-9 *A clarification has been made to the first bullet point under Project Objectives, reducing the amount sediment being removed from the Lake and Pond, as follows. This change represents a minor clarification to the Draft IS/MND as it reduces the amount of sediment that will be removed from the Lake and Pond. This change is not substantive, does not result in a new or worsened impact, and the significance conclusion would remain the same.*

Improve flood protection and increase water conservation by increasing the depth of the Lake and Pond by excavating approximately ~~65,000~~ 26,000 cubic yards (CY) of sediment.

2-10 *A clarification has been made to Figure 2-5 Tule Pond Proposed Improvements (shown below), as follows. This change represents a minor clarification to the figure that represents that the proposed HDS and media filtration systems, and proposed maintenance access roads were removed from the proposed improvements to Tule Pond. This change is not substantive, does not result in a new or worsened impact, and the significance conclusion would remain the same.*

2-11 *A clarification has been made to the first sentence under Construction Schedule updating the estimated duration of construction, as follows. This change represents a minor clarification to the Draft IS/MND as it changes the anticipated start and end dates of construction of the proposed Project, but does not reflect a change to the estimated duration of construction. This change is not substantive, does not result in a new or worsened impact, and the significance conclusion would remain the same.*

The estimated duration of construction of the proposed Project is 18 months and is anticipated to occur from ~~July 2025~~ June 2026 through December 2027 ~~January 2027~~.



Source: Los Angeles County Public Works 2024.

Figure 2-5
Tule Pond Proposed Improvements

2-12 *A clarification has been made to the last sentence under Construction Scenario and Phasing reducing the amount sediment being removed from the Lake and Pond, as follows, This change represents a minor clarification to the Draft IS/MND as it reduces the overall area that would be graded, and reduces amount of sediment that would be removed from the Lake and Pond. This change is not substantive, does not result in a new or worsened impact, and the significance conclusion would remain the same.*

Approximately 4.5 ~~5.36~~ acres will be graded, and approximately ~~65,000~~ 26,000 cubic yards (CY) of soil will be excavated, with approximately ~~59,000~~ 20,000 CY from the Lake and 6,000 CY from the Pond.

2-14 *A clarification has been made to the second to the last paragraph under Construction Equipment, as follows. This change represents a minor clarification to the Draft IS/MND as it provides an additional disposal site option, potentially reducing the distance sediment removed from the Lake and Pond will need to be hauled. This change is not substantive, does not result in a new or worsened impact as the CEQA analysis is based on the furthest Class I landfill. The significance conclusion would remain the same.*

The nearest practicable Class I landfill is the Kettleman Hills Landfill, near Kettleman, California, approximately 184 miles north of the Arboretum. The anticipated haul route from the Arboretum to this facility would be the I-210 west, to I-5 north, to SR-41 south.

3-18 *A clarification has been made to the first paragraph, fourth sentence on this page reducing the limits of construction grading, as follows. This change represents a minor clarification to the Draft IS/MND as it reduces the overall area that would be graded. This change is not substantive, does not result in a new or worsened impact, and the significance conclusion would remain the same.*

The proposed Project construction limits would be approximately ~~5.36~~ 4.5 acres.

3-19 *A clarification has been made to first paragraph, fifth sentence on this page regarding the approximate amount of material exported from the Project site, as follows. This change represents a minor clarification to the Draft IS/MND as it reduces amount of sediment that would be removed from the Lake and Pond. This change is not substantive, does not result in a new or worsened impact, and the significance conclusion would remain the same.*

In addition, the proposed Project anticipates approximately ~~65,000~~ 26,000 cubic yards (CY) of material would be exported, of which approximately 6,000 CY is anticipated to be contaminated soil.

3-76 *A clarification has been made to this page to add a fourth paragraph to incorporate an additional potential disposal site for sediment removed from the Lake, and approximate distance and haul route from the Arboretum, as follows. This change represents a minor change to the Draft IS/MND as it provides an additional disposal site option, potentially reducing the distance sediment removed from the Lake and Pond would need to be hauled. This change is not substantive, does not result in a new or worsened impact as the CEQA*

analysis is based on the furthest Class I landfill. The significance conclusion would remain the same.

The nearest, practicable Class I landfill is the Kettleman Hills Landfill, near Kettleman, California, approximately 184 miles north of the Arboretum. The anticipated haul route from the Arboretum to this facility would be the I-210 west, to I-5 north, to SR-41 south.

3-77 *A clarification has been made to the first paragraph on this page to add the Azusa Land Reclamation site as a potential disposal location, as follows. This change represents a minor change to the Draft IS/MND as it incorporates an additional potential landfill for disposal that is less than 10 miles from the Arboretum. This change is not substantive, does not result in a new or worsened impact, and the significance conclusion would remain the same.*

… and Azusa Land Reclamation in Azusa, California, approximately 9 miles east of the Arboretum. The anticipated haul routes from the Arboretum to the facilities in Sylmar or Castaic (Sunshine Canyon Landfill and Chiquita Landfill, respectively) would be the westbound I-210 to the northbound I-5 freeways, and the anticipated haul route from the Arboretum to Azusa Land Reclamation would be the eastbound I-210 to South Irwindale Avenue.

3-83 *A clarification has been made to the third paragraph, seventh sentence on this page to remove the text regarding HDS units and media filtration systems, as follows. This change represents a minor clarification to the Draft IS/MND as this element of the proposed Project has been eliminated from the project design. This change is not substantive, does not result in a new or worsened impact, and the significance conclusion would remain the same.*

These design features ~~include installation of in-line water treatment systems such as HDS units to treat any additional sediment, debris, free-floating oil, heavy metals, and phosphorus. Additional design features proposed to support the HDS units and media filtration systems~~ include the use of phytoremediation plants such as sedges (Figure 2-5, Tule Pond Proposed Improvements) which can assist in removing toxic compounds from water.

3-86 *A clarification has been made to the second sentence under Operation on this page to update the depth of sediment removal for the Lake to 5 feet, as follows. This change is not substantive, because as described in the Project Description, the excavation depth has been analyzed up to 14 feet. Therefore, this minor change does not result in a new or worsened impact, and the significance conclusion would remain the same.*

Proposed Project features include removing sediment and increasing the depths of both the Lake and Pond, to up to ~~14~~ 5 feet and 12 feet, respectively.

3-86 *A clarification has been made to the fifth paragraph, third sentence on this page to remove the text regarding HDS units and media filtration systems, as follows. This change represents a minor clarification to the Draft IS/MND as these elements of the proposed*

Project have been eliminated from the project design. This change is not substantive, does not result in a new or worsened impact, and the significance conclusion would remain the same.

In addition to providing water quality improvements at the Pond and Lake, reconstruction and realignment of existing storm drains will improve removal of runoff from the surrounding residential areas, which is the source of runoff that discharges into the Pond. ~~Project design features such as the in-line treatment systems including diversion structures, HDS units, and media filtration systems will treat runoff for trash, sediments, oils, heavy metals, phosphorus and other debris.~~ Phytoremediation plants, such as sedges, at the Pond (see Figure 2-5: Tule Pond: Proposed Improvements) will further help treat polluted runoff.

3-121 *A clarification has been made to the first sentence of the first paragraph and the first sentence of the second paragraph of Mitigation Measure TCR-1 as follows. These changes represent minor clarifications to the Draft IS/MND to clarify the language of Mitigation Measure TCR-1. These changes are not substantive, do not result in a new or worsened impact, and the significance conclusion would remain the same.*

Los Angeles County Public Works shall ~~invite~~ retain a Native American monitor from Tribe(s) that have engaged in consultation and requested monitoring prior to the commencement of any ground-disturbing activity in native soils and will provide compensation for the Native American monitor for their time spent.

The Native American monitor(s) will work with the Project's ~~SOI-qualified~~ qualified Archaeologist during ground-disturbing activities, identify potential Native American Tribal Cultural Resources (TCRs), and communicated concerns regarding TCRs Directly to PW and DPR.

3-122 *A clarification has been made to the first sentence of the second paragraph of MM TCR-2, as follows. This change represents a minor clarification to the Draft IS/MND to clarify the language of Mitigation Measure TCR-2. This change is not substantive, does not result in new or worsened impacts, and the significance conclusion would remain the same.*

Upon discovery of any TCR or potential TCR, all construction activities in the immediate vicinity of the discovery shall cease within a radius deemed appropriate by the ~~SOI qualified~~ qualified archaeologist.

3-123 *A clarification has been made to the first sentence of the first paragraph and the first sentence of the second paragraph of Mitigation Measure TCR-1 as follows. These changes represent minor clarifications to the Draft IS/MND to clarify the language of Mitigation Measure TCR-1. These changes are not substantive, does not result in a new or worsened impact, and the significance conclusion would remain the same.*

Los Angeles County Public Works shall ~~invite~~ retain a Native American monitor from Tribe(s) that have engaged in consultation and requested monitoring prior to the

commencement of any ground-disturbing activity in native soils and will provide compensation for the Native American monitor for their time spent.

The Native American monitor(s) will work with the Project's ~~SOI-qualified~~ qualified Archaeologist during ground-disturbing activities, identify potential Native American Tribal Cultural Resources (TCRs), and communicated concerns regarding TCRs Directly to PW and DPR.

3-128 *A clarification has been made to the second sentence of the third paragraph reducing the of sediment removed from the Lake and Pond, as follows. This change represents a minor clarification to the Draft IS/MND as it reduces the amount of sediment that will be removed from the Lake and Pond. This change is not substantive, does not result in a new or worsened impact, and the significance conclusion would remain the same.*

As described in Chapter 2, Project Description, the largest potential source of solid waste during construction would be approximately ~~65,000~~ 26,000 CY of excavated sediment combined from the Lake and Pond.

3-128 *A clarification has been made to the last paragraph on this page to incorporate an additional potential disposal site for sediment removed from the Lake, as follows. This change represents a minor clarification to the Draft IS/MND as it provides an additional disposal site option, potentially reducing the distance sediment removed from the Lake and Pond would need to be hauled as the Kettleman Hills facility is closer to the Arboretum than the Beatty, Nevada facility. This change is not substantive, does not result in a new or worsened impact and the significance conclusion would remain the same.*

The nearest, practicable Class I landfill is the Kettleman Hills Landfill, near Kettleman, California, approximately 187 miles from the Arboretum.

3-128 *A modification has been made to the last sentence on this page, to clarify that the Beatty, Nevada landfill is the furthest, practicable Class I landfill from the Arboretum, as follows. This change represents a minor change to the Draft IS/MND as it clarifies the facility, while providing a potential Class I facility that could be utilized is the facility furthest from the Arboretum. This change is not substantive, does not result in a new or worsened impact, and the significance conclusion would remain the same.*

The ~~nearest~~ furthest, practicable Class I landfill is the US Ecology Nevada, Inc., facility near Beatty, Nevada, approximately 290 miles northeast of the Project site.

3-129 *A clarification has been made to the first paragraph on this page to add the Azusa Land Reclamation site as a potential disposal location, as follows. This change represents a minor change to the Draft IS/MND as it incorporates an additional potential landfill for disposal that is less than 10 miles from the Arboretum. This change is not substantive, does not result in a new or worsened impact, and the significance conclusion would remain the same.*

Other potential Class III landfills that could be utilized include the Sunshine Canyon Landfill in Sylmar, California, approximately 33 miles northwest of the Arboretum, the Chiquita Landfill in Castaic, California, approximately 46 miles northwest of the Arboretum, and Azusa Land Reclamation in Azusa, California, approximately 9 miles east of the Arboretum. The remaining capacity of the Sunshine Canyon Landfill, Chiquita Landfill, and Azusa Land Reclamation are 64 million CY, 58 million CY, and 40 million CY, respectively. The anticipated haul routes from the Arboretum to the Sylmar and Castaic facilities would be the westbound I-210 to the northbound I-5 freeways, and the anticipated haul route from the Arboretum to Azusa Land Reclamation would be the eastbound I-210 to South Irwindale Avenue.

3-129 *A clarification has been made to the third paragraph on this page reducing the amount sediment being removed, as follows. This change represents a minor clarification to the Draft IS/MND as it reduces the amount of sediment that would be removed from the Lake and Pond. This change is not substantive, does not result in a new or worsened impact, and the significance conclusion would remain the same.*

As described in Chapter 2, Project Description, during construction a total of ~~65,000~~ 26,000 CY of sediment will be excavated.

3-131 *An editorial change has been made to first sentence, second paragraph, as follows. This change represents minor clarification to the Draft IS/MND as it defines acronyms from the Draft IS/MND that were not defined earlier. This change is not substantive, does not result in a new or worsened impact, and the significance conclusion would remain the same.*

California Government Code (CGC) ~~Section~~ §51178[99] and PRC ~~Section~~ §4202[100] requires that the state Fire Marshal identify areas in the state, including state responsibilities areas, as moderate, high, and very high fire hazards severity zones based on consistent statewide criteria and based on the severity of fire hazard that is expected to prevail in those areas.

Appendix A

Draft Initial Study/Mitigated Negative Declaration with Appendices

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION
BALDWIN LAKE AND TULE POND RESTORATION PROJECT

PREPARED FOR:

Los Angeles County Flood Control District
900 S. Fremont Avenue
Alhambra, CA 91803

PREPARED BY:

AECOM
300 S. Grand Avenue, 9th Floor
Los Angeles, CA 90071

November 2024

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Acronyms

µg/m3	micrograms per cubic meter
µg/L	micrograms per liter
AB	Assembly Bill
ADA	Americans with Disabilities Act
AQMP	air quality management plan
Basin	South Coast Air Basin
Bgs	below ground surface
BERD	Built Environment Resource Directory
BMPs	best management practices
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
Cal OSHA	California Division of Occupational Safety and Health
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CGC	California Government Code
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO2 equivalents
County	County of Los Angeles
CRHR	California Register of Historical Resources
CWA	Clean Water Act
CY	Cubic yards
dBA	A-weighted sound level
DBH	diameter at breast height
District	Los Angeles County Flood Control District
DPR	County of Los Angeles Department of Parks and Recreation
DHS	Department of Health Services
DTSC	Department of Toxic Substances Control
EDR	Environmental Data Resources
EIR	environmental impact report
EPA	United States Environmental Protection Agency
ESA	Federal Endangered Species Act
EWMP	enhanced watershed management program
FEMA	Federal Emergency Management Agency
FTA	Federal Transit Administration
GHG	greenhouse gas
GWP	global warming potential
HRI	Historic Resources Inventory
I	Interstate
IS	Initial Study
IS/MND	initial study/mitigated negative declaration

LACABGHD	Los Angeles County Arboretum and Botanic Garden Historic District
LACO Register	Los Angeles County Historic Register
PW	County of Los Angeles, Department of Public Works
L_{eq}	equivalent sound level
LID	low-impact development
L_{max}	maximum sound level
L_{min}	minimum sound level
LST	localized significance threshold
L_{xx}	percentile-exceeded sound level
MBTA	Migratory Bird Treaty Act
MM	Mitigation Measure
MMRP	Mitigation Monitoring and Reporting Program
MND	mitigated negative declaration
MRZ	Mineral Resource Zone
MLD	Most Likely Descendent
MS4	Municipal Separate Storm Sewer System
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
ND	negative declaration
NO_2	nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	ozone
Pb	lead
PEIR	program environmental impact report
PM	Particulate Matter
PM_{10}	Respirable Particulate Matter
$PM_{2.5}$	fine particulate matter
ppb	parts per billion by volume
Ppm	parts per million by volume
PCR	Public Code of Regulations
RCP	reinforced concrete pipe
RCRA	Recovery Act of 1976
RWQCB	Regional Water Quality Control Board
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SEAs	Significant Ecological Areas
SOI	United States Secretary of the Interior
SO_2	Sulfur Dioxide
SR	State Route
SRA	Source Receptor Area
SWPPP	storm water pollution prevention plan
SWRCB	State Water Resources Control Board
TMDL	total maximum daily load
U.S.C.	U.S. Government Code
EPA	U.S. Environmental Protection Agency

USFWS	U.S. Fish and Wildlife Service
VOC	volatile organic compounds
WRD	Water Replenishment District of Southern California

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Draft Mitigated Negative Declaration Summary

Los Angeles County Flood Control District

Project Title: Baldwin Lake and Tule Pond Restoration Project (Project)

Lead Agency Name and Address: Los Angeles County Flood Control District (District)
900 S. Fremont Avenue, 11th Floor, Alhambra, CA 91803

Project Location: Los Angeles County Arboretum and Botanic Garden
301 North Baldwin Avenue, Arcadia, CA 91007

Description of Project: The Project proposes to remove sediment and deepen Baldwin Lake (Lake) and Tule Pond, (Pond), install a liner and aeration units at the Lake to improve the aquatic ecosystem at the Lake, realign one storm drain outlet and reconstruct three storm drain outlets with energy dissipators to minimize erosion, install hydrodynamic separators and media filtration to treat residential runoff. The Project also proposes to restore the historic retaining wall around the Lake for historic preservation and improve landscaping to provide additional aesthetic, education, and operational benefits to Arboretum visitors.

The proposed Project would include environmental mitigation measures to reduce potentially significant environmental impacts to less than significant. These measures are detailed below.

Proposed Finding: Based on the information contained in the Initial Study, the District finds that there would not be a significant effect on the environment because the mitigation measures described herein would be included to reduce any potentially significant impacts below the level of significance.

Public Review Period: November 1, 2024 – December 2, 2024

Mitigation Measures (MM) Included into the Project to Reduce or Avoid Significant Effects:

MM AES-1: The construction contractor shall use appropriate fencing (i.e., barricades and/or temporary fencing with opaque materials) to screen views of construction activities and construction equipment as well as materials and soil in construction staging areas. The visual barrier may be chain link fencing with privacy slats, fencing with windscreen material, a wooden or concrete barrier/soundwall, or another similar barrier. The visual barrier shall be a minimum of 6 feet high to help maintain the privacy of sensitive visual receptors and block long-term ground-level views toward construction activities. The construction contractor will remove the visual barrier when construction is completed and all construction equipment and materials are removed from the site.

MM BIO-1: Project construction activities (including removal of sedimentation from both the Lake and Pond) should avoid, if possible, the nesting bird season (which is defined as February 1 through September 1). If the nesting bird season cannot be avoided, the following measures shall be employed to avoid and/or minimize impacts to special-status birds and nesting birds protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (CFGC):

1. A pre-construction nesting bird survey shall be conducted by a qualified, County-approved biologist with the necessary skills to identify birds and nesting bird behaviors, within 3 days prior to the start of construction activities (specifically related to ground disturbance and the dewatering or removal of sedimentation of the Lake and Pond) to determine whether active nests are present within or directly adjacent to the construction zone of the Project footprint.

    a. In the event an active nest is detected, a qualified biologist shall record the location of the nest and establish a 300-foot radius avoidance buffer for passerines and a 500-foot radius avoidance buffer for raptors.

    b. In the event an active nest is found within wetland vegetation associated with either the Lake or Pond, any dewatering or sediment removal activities will be postponed until a qualified biologist has confirmed the nest is inactive. Demarcation of nest avoidance buffer zones 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, etc.) and observed avian response to ambient conditions (e.g., existing traffic noise and human activity). The nest avoidance buffers will be clearly delineated with flagging or fencing,

    c. The qualified biologist shall monitor the status of all active nests, at least once per week. If signs of disturbance or stress are observed, the qualified biologist shall modify the buffer size between the nest and construction activity, as appropriate to minimize impacts. The qualified biologist shall monitor each active nest until it is determined that nestlings have fledged and dispersed, or the nest is no longer active.

    d. Should an active nest of any federal or State-listed bird species be detected at any time, construction activity within 300-feet of the nest shall not commence or shall cease if already underway, and the applicable federal and/or state agency (U. S. Fish and Wildlife Service [USFWS] and/or California Department of Fish and Wildlife [CDFW]) shall be notified. Work in other areas of the Project site may continue as determined appropriate by the qualified biologist.

MM BIO-2: A Western/Southwestern Turtle Management and Relocation Plan will be prepared by a County-approved qualified biologist prior to the commencement of the Project and will provide the following information:

a. Relocation methodology and procedures;

b. How to proceed, and provisions to follow, in the event an individual is encountered during construction;

c. Requirements for exclusionary fencing around the Project footprint;

d. Daily visual inspection requirements (including morning pre-construction sweeps of all active work areas and as-needed inspections under parked/stages vehicles and equipment tires prior to moving.

Construction will follow the methods and procedures to properly relocate turtles prior to construction to ensure impacts are less than significant.

MM BIO-3: A qualified biologist (i.e., a biologist familiar with the special-status species determined to have the potential to occur due to suitable habitat) will be present during all clearing and grubbing activities that result in the initial removal of upland or wetland vegetation that could serve as habitat (i.e., shelter, cover, etc.) for special-status species. The qualified biologist shall conduct a preconstruction sweep of the area identified for clearing and grubbing immediately prior to equipment mobilization to confirm there are no special-status species present. If any special-status species are detected within the Project footprint, the qualified biologist will flush the individual(s) out of harm's way. The qualified biologist shall remain on-site for the duration of the clearing and grubbing and periodically survey the site ahead of equipment to ensure the Project footprint is clear of special-status species. Should any federal or state-listed species be detected construction activity within 300 feet of the observed individual(s) shall not commence or shall cease if already underway, and the applicable federal and/or state agency (USFWS and/or CDFW) shall be notified.

MM BIO-4:

1. All palm trees to be removed as part of the Project will be evaluated by a qualified biologist (i.e., a biologist experienced and familiar with bat ecology) for their potential to support roosting bats, by conducting a one-night pre-construction survey two weeks prior to the start of tree removal.

    a. If the preconstruction survey determines that no special-status bat species or active roosts are present, then trees shall be removed within two weeks following the preconstruction survey. If trees are not removed within the two week period, then another preconstruction survey shall be conducted to determine, once again, whether special-status species are present. Trees shall be removed within two weeks following the repeat survey. If active special-status bat roosts are present, tree removal shall be avoided during the maternity season (April 15 through August 31).

2. All potential roost trees shall be removed and trimmed in the presence of a qualified biologist. Removal and trimming of trees with potential for roosting will be conducted using a two-step tree trimming process that occurs over 2 consecutive days:

    a. Day 1, Step 1: Under the supervision of a qualified biologist, tree branches and limbs with no cavities shall be removed by hand (e.g., using chainsaws). This will create a disturbance (noise and vibration) and physically alter the tree. Bats roosting in the tree will either abandon the roost immediately or, after emergence, will avoid returning to the roost.

    b. Day 2, Step 2: Removal of the remainder of the tree under the supervision of a qualified biologist may occur on the following day.

3. All construction activity in the vicinity of an active roost shall be limited to daylight hours.

MM BIO-5: Prior to the initiation of construction, an arborist approved by PW shall review the existing Arboretum tree inventory to determine if there are trees present within the Project footprint that have

the potential to require protection and/or replacement under County of Los Angeles Department of Public works (PW) or County of Los Angeles Department of Parks and Recreation (DPR) Tree policies, or other state, federal, and/or local laws and policies, as applicable, to ensure impacts to protected trees are less than significant.

MM BIO-6: Standard aquatic resource Best Management Practices (BMPs) will be implemented by the Contractor, including:

1. Prior to construction, the Aquatic Resource Specialist will provide an Environmental Tailgate to go over applicable mitigation measures.

2. The Aquatic Resource Specialist shall work with the BMP crew to clearly define any work areas as required by any mitigation measures.

3. The Aquatic Resource Specialist shall be present during all surface water dewatering. The pump intake shall be equipped with exclusionary screens.

MM CR–1: Prior to construction, all personnel associated with the Project should receive cultural resource awareness training. Training shall be conducted by an individual(s) that meet Secretary of Interior (SOI) Professional Qualification Standards in architectural history and archaeology. Training would cover work practices for the proper treatment of cultural resources and tribal cultural resources (TCRs) and ensuring compliance with applicable environmental laws and regulations. This training will include how to maintain the confidentiality of resources at in-situ locations; how to identify cultural resources/historic materials (e.g., the types of resources to look for), include recognizing possible buried resources; the significance of the resources that need to be protected during Project implementation; and treatment of historic materials or upon discovery of archaeological materials, including TRCs and Native American human remains. Native American representatives shall be afforded the opportunity to participate in the cultural resource training to provide Project personnel with tribal perspectives on working in areas sensitive for TCRs.

MM CR-2: When conducting work on the boulder retaining walls, retain as much of the original boulders as possible, including pattern of how stones are laid out. When conducting work on the walls, activities should retain as much of the original material as possible. When reuse of material is not acceptable for purposes of maintaining structural integrity, new materials should closely match the existing materials to mimic historic characteristics. If subtle variations exist between the historic and new materials, such as color or texture, the substitute materials should be varied so they are not conspicuous by their uniformity. This practice does not apply to the concrete replacement because the entirety of the material is intended to be replaced.

MM CR–3: Any substitute materials proposed for use in the new retaining wall must be harmonious with historic materials. Substitute material should match the details and craftsmanship of the historic materials. However, it is important to note that chemical compositions may differ between historic and substitute materials. Therefore, chemical composition of the substitute material should be evaluated to ensure compatibility with the historic material, and special care should be taken to install and anchor the substitute material to the historic material. If subtle variations exist between the historic and substitute material, such as color or texture, the substitute materials should be varied so they are not conspicuous by their uniformity. The substitute materials, including types of compounds and boulders,

used to reconstruct the walls shall be recorded for future reference in order to guarantee proper care and maintenance through the life of the historic resource.

MM CR–4: Inappropriate cleaning and coating treatments are a significant cause of damage to historic masonry structures such as the Lake and Pond cobblestone retaining walls. Any cleaning processes should be carried out under the guidance and supervision of an architectural conservator to avoid irrevocable damage to the historic resource. Additionally, the retaining walls' historic appearance must be considered before work, as well as a determination of the level of cleanliness to be achieved. Prior to developing a cleaning program, it is important to understand the building materials, which include a combination of local cobblestones, basalt and granite boulders, slate and fired red brick, and unreinforced board formed concrete. Before choosing a cleaning method, different cleaners should be tested and their results evaluated. Some chemicals and acidic cleaners may have an adverse effect on construction materials. Other chemicals may also cause etching or the dissolution of the cobblestones, basalt and granite boulders, and slate and fired red brick. Recommended cleaning methods for the retaining walls include water and chemical methods that do not create adverse conditions for the Lake ecosystem. Water methods soften dirt and soiling material and rinse the deposits from the surface. Chemical cleaners react with dirt, soiling material, or paint to affect their removal, followed by the cleaning effluent being rinsed off the surface with water. Alternative methods to abrasive cleaning of the retaining wall include low-pressure water wash, scrubbing with natural bristles, steam cleaning, or chemical cleaning.

MM CR-5: A SOI-qualified Archaeologist in prehistoric and historical archaeology (36 CFR Part 61) and Native American monitor from Tribe(s) traditionally or cultural affiliated with the site shall be retained by P W prior to ground-disturbing activities. An archaeological monitor, either meeting or working under the direction of an archaeologist who meets the SOI Professional Qualification Standards in archaeology, shall monitor ground-disturbing activities in areas with potential for archaeological or tribal cultural resources at the Project site to minimize disturbance of subsurface archaeological deposits. The qualified archaeologist and archaeological monitor will have experience working in the Los Angeles basin within ancestral tribal territory.

The archaeological monitoring will include direct observation of ground-disturbing activities and ground disturbance in areas with potential for archaeological or tribal cultural resources, inspection of exposed surfaces for evidence of cultural resources, and recordation of all activities and findings in daily monitoring logs. Daily log information includes a description of the areas monitored, the nature of the actions being monitored, location and description of any cultural resources identified during monitoring, sample photographs of daily activity (except photographs of human remains), records of conversations regarding daily construction and monitoring activity, and if resources are found, recommendations for on-site actions, such as security and treatment recommendations. The archaeological monitor recommending the suspension of work in the event of an unanticipated cultural resources discovery during Project activities.

Responsibilities shall include cultural resources monitoring and recommending the suspension of work in the event of an unanticipated cultural resources discovery during Project activities. Responsibilities of the SOI-qualified archaeologist shall include evaluation of any finds, issuing clearance to recommence Project activities after suspension of work has been recommended to protect potential cultural resources, analysis and curation of materials, and preparation of a monitoring activities results report conforming to the California Office of Historic Preservation Archaeological Resource Management Reports guidelines. The SOI-qualified archaeologist in consultation with the Native American monitor

will determine when no further monitoring is required, such as in the event that bedrock or fill material is reached.

MM CR-6: A SOI-qualified archaeologist, or archaeological monitor working under the direction of a SOI-qualified archaeologist and Native American Monitor from Tribe(s) traditionally or cultural affiliated with the Site, will evaluate all inadvertently discovered potential cultural material to determine if it is a unique archaeological resource. If the find is determined to not be a unique archaeological resource, work may proceed without further delay. If the find is determined to be archaeologically important, work will stop within a 50-foot radius until a qualified archaeologist can assess the significance of the find. The qualified archaeologist shall have the authority to modify the no-work radius as appropriate, using professional judgement. The qualified archaeologist will carefully inspect the ground surface around the potential discovery and displaced soil to determine whether the discovery constitutes an isolated find (i.e., fewer than three items) or a site (i.e., a feature or three or more items). If no other artifacts or features are identified within 50 feet of the find, it will be determined to be an isolate (unless human remains are present). Non-unique isolated artifacts, or isolated artifacts that are not a TCR, will be documented, reported, and described in the final monitoring report, but will not constitute a discovery. After recording, non-unique and non-TCR isolates will either be discarded or returned to the ground from which they were recovered prior to the completion of ground disturbing activities. Ground-disturbing activity will remain on hold until authorization to resume work has been granted by the qualified archaeologist. Work may continue on other parts of the Project while consultation and treatment are conducted.

If significant or potentially significant unanticipated cultural resources are discovered during ground-disturbing activities, such as structural features, unusual amounts of bone or shell, flaked ground stone artifacts, historic-era artifacts, architectural remains, or human remains, the qualified archaeological monitor in consultation with the Native American monitor will suspend ground-disturbing activity immediately within at least 50 feet of the find. If possible human remains are observed, MM CR-7, described below, should be followed. Based on the initial assessment, appropriate treatment measures will be developed. Treatment measures typically include development of avoidance strategies, capping with fill material, or mitigation of impacts through data recovery programs such as excavation or detailed documentation with appropriate research designs.

If, as a result of the resource evaluation and tribal consultation process, the resource is considered to be a TCR, treatment measures will be developed with input from consulting Tribe(s). All collected cultural objects shall be cleaned and cataloged. Final disposition, which may include permanent curation at an appropriate institution, repatriation, or reburial in a secure location onsite if curation is infeasible, will be determined in consultation with DPR, consulting Tribe(s), and the qualified archaeologist.

MM CR-7: If human remains are discovered during on-site construction activities, the County of Los Angeles (County) will ensure that the immediate vicinity where the remains are located, according to generally accepted cultural or archaeological standards or practices, is not damaged or disturbed by further development activity until the County has discussed and conferred, pursuant to PRC Section 5097.98, with the most likely descendants (MLD), as determined by the Native American Heritage Commission (NAHC), regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The County shall immediately notify the Los Angeles County Coroner, who shall then make a determination within two working days as to whether the remains are of Native American origin or whether an investigation into the cause of death is required. If the remains are determined to be Native American, the Coroner shall notify the NAHC within 24 hours. The NAHC will

immediately notify the MLD of the deceased. The MLD shall make recommendations to the District within 48 hours for the treatment or disposition, with proper dignity, of the human remains and/or grave goods, which shall be implemented in accordance with PRC Section 5097.98 and Section 15064.5(e) of the State CEQA Guidelines. If the MLD fails to make recommendations within 48 hours, the County may reinter the remains in an area of the property not subject to further disturbance. The NAHC is authorized to resolve any disputes regarding the disposition of such remains, pursuant to Section 15064.5(e) of the State CEQA Guidelines. Work may resume at the County's discretion but will commence only after consultation and treatment have been concluded. Work may continue on other parts of the Project while consultation and treatment are conducted.

MM NOISE-1. Control of construction noise to the extent feasible through the following (or combination thereof) from the pump and generator system use for pond/lake draining activities:

1. Both the pump and generator shall be located as far away from noise-sensitive land uses as practicable.

MM PR-1: A qualified paleontologist meeting the Society of Vertebrate Paleontology shall be retained to design and present Paleontological Resources Awareness Training for Project construction personnel. Further, paleontological resource monitoring is recommended for excavations in parts of the Project mapped as having sediments that have the potential to contain fossils.

The qualified paleontologist will supervise paleontological monitoring, specimen recovery, specimen preparation, specimen identification, preparation of a final report on paleontological resource monitoring efforts, and curation of significant paleontological resources covered consistent with the guidelines of the Society of Vertebrate Paleontology.

MM TCR-1: P W shall invite a Native American monitor from Tribe(s) that have engaged in consultation and requested monitoring prior to the commencement of any ground-disturbing activity in native soils, in conjunction with a U.S. Secretary of Interior (SOI) qualified archaeologist and will provide compensation for the Native American monitor for their time spent. The Native American monitor(s) should be members of the Tribe(s) they represent. A monitoring agreement between each of the monitoring tribe(s) and P W will be prepared prior to ground-disturbing activities in native soils.

The Native American monitor(s) will work with the Project's qualified archaeologist during ground-disturbing activities, identify potential Native American TCRs, and communicate concerns regarding TCRs directly to P W and DPR. Additionally, the tribal representatives shall attend the preconstruction cultural resources awareness meeting and will be given the opportunity to provide TCR awareness training to all Project personnel, in cooperation with the qualified archaeologist prior to the start of construction.

The Native American monitor(s) shall maintain ongoing collaborative consultation with the qualified archaeologist during ground-disturbing activities. Ground-disturbing activities include, but are not limited to, clearing, grubbing, grading, potholing, tree removal, boring, drilling, demolition, pavement removal, excavation, trenching and, in certain circumstances, auguring work in native soils. As designated by the qualified archaeologist, Native American monitoring will not be required for augering depths, which have no potential for yielding tribal cultural resources. Native American monitoring will not be required for augering depths, as designated by the qualified archaeologist, which have no potential for yielding tribal cultural resources. Native American monitoring will not be required for

work activities that include the demolition and removal of hardscaping material such as existing concrete, asphalt pavement, and pavement base layers.

The Native American monitor(s) will complete daily monitoring logs that will provide descriptions and locations of relevant ground-disturbing activities, construction activities performed, soil types, cultural-related materials, and any other facts, conditions, materials, or discoveries of significance to the Tribe(s). The monitoring logs will identify and describe any discovered TCRs and/or Native American human remains and burial goods and will be provided to P W and DPR at the end of ground-disturbing activities. Monitoring logs will be kept confidential with the Project records.

The Native American monitor(s) shall have the ability to notify and coordinate with the qualified archaeologist, who has the authority to temporarily stop work and identify a stop work radius, if they find a cultural resource that may require further identification, recordation, and evaluation. If the cultural resource is determined to be of Native American origin, the monitoring Tribe(s) will assess and develop appropriate handling and treatment measures. Ground-disturbing activity within the stop work radius will remain on hold until the discovered TCR has been fully assessed by the Native American Tribe(s) and authorization to resume work has been granted by the qualified archaeologist. Work may continue on other parts of the Project outside of the stop work zone while consultation and treatment are conducted.

On-site tribal monitoring shall conclude when the Tribe(s) and qualified archeologist determine and provide written confirmation that all ground-disturbing activities with the potential to impact TCRs on the Project site or in connection with the Project are complete.

MM TCR-2: A TCR is a site, feature, place, cultural landscape, sacred place or object, which is of cultural value to a Tribe(s) AND either: On or eligible for the California Historic Register or other local historic register, OR the lead agency, at its discretion, chooses to treat the resource as a TCR. See: PRC 21074(a)(1)(A)-(B).

Upon discovery of any TCR or potential TCR, all construction activities in the immediate vicinity of the discovery shall cease within a radius deemed appropriate by the SOI qualified archaeologist and Native American monitor(s). If the qualified archaeologist in consultation with the Native American monitor(s), as appropriate, determines that the find does not represent a potentially significant cultural resource, work may resume immediately and no agency notifications are required. If the cultural resource is determined to be a TCR, the qualified archaeologist, in cooperation with the Native American monitor(s) and other authorized staff, shall use flagging tape, rope, or some other means to delineate the area of the find plus a 50-foot no-work buffer zone. The qualified archaeologist, in consultation with the Native American monitor(s), shall have the authority to modify the no-work radius as appropriate, using professional judgement. If potential human remains are observed, MM TCR-3 and MM CR-7 will take effect.

Any discovery of cultural resources must be kept confidential and secure to prevent unauthorized access of sensitive information. There shall be no publicity regarding any TCRs discovered or recovered. However, discoveries will be documented and included in a confidential cultural resources monitoring report prepared by the qualified archaeologist, in consultation with the Native American monitor(s), as necessary, and will be submitted to the P W and DPR, the South Central Coastal Information Center (SCCIC), and the NAHC.

If the resource is considered to be a TCR, as result of the resource evaluation and tribal consultation process, treatment measures will be developed with input from consulting Tribe(s). All collected cultural objects shall be cleaned and cataloged. Final disposition, which may include permanent curation at an appropriate institution, repatriation, or, if curation is infeasible, reburial in a secure on-site location, will be determined in consultation with P W and DPR, the consulting Tribe(s), and the qualified archaeologist.

MM TCR-3: If Native American human remains and/or grave goods are discovered or recognized on the Project site, then California PRC Section 5097.9 and Health and Safety Code Section 7050.5 shall be followed, in addition to procedures outlined in MM CR-7. PRC 5097.98(d)(1) defines Native American human remains as an inhumation or cremation in any state of decomposition or skeletal completeness. Funerary objects, also called associated grave goods in PRC 5097.98, and human remains shall be treated alike per PRC Section 5097.98 (d)(1) and (2). Any discovery of Native American human remains/grave goods shall be kept confidential.

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Chapter 1
Introduction

Overview

The Los Angeles County Flood Control District (District), as the lead agency under the California Environmental Quality Act (CEQA), has prepared this Initial Study (IS) and proposed mitigated negative declaration (MND) to evaluate the potential environmental impacts associated with the construction and operation of the Baldwin Lake and Tule Pond Restoration Project (proposed Project) at the Los Angeles County Arboretum and Botanic Garden (Arboretum) in the City of Arcadia within Los Angeles County. The proposed Project is required to undergo an environmental review pursuant to CEQA.

Preparation of an Initial Study/Mitigated Negative Declaration

When proposed activities meet the definition of a Project under CEQA and are not exempt,[1] the lead agency is required to prepare an environmental impact analysis and disclosure document. The intent of the document is to (1) inform the decision-maker, responsible and trustee agencies, and the general public of the environmental effects of the Project and (2) mitigate those effects to the greatest extent feasible.

Unless it is already determined that an environmental impact report (EIR) will be prepared or the proposed Project will fall within one of the defined exemption classes,[2] the lead agency generally starts the documentation process by preparing an IS. Once completed, the IS provides the lead agency with direction on which level of CEQA documentation is appropriate for a given Project. For Projects where the IS determines that a potentially significant and unavoidable impact would occur, an EIR is appropriate. For Projects that would have little to no effect on the environment, either a categorical exemption (CE) or negative declaration (ND) is generally appropriate. For Projects where mitigation is needed to reduce a potentially significant impact to a less-than-significant level and no significant unavoidable impacts would result, an MND is prepared.

Based on the results of the IS, the District has determined that the proposed Project would result in less-than-significant impacts after mitigation is incorporated and no significant unavoidable impacts would occur. Therefore, the appropriate CEQA compliance document is an IS/MND.

Requirements of a Mitigated Negative Declaration

The preparation of an IS/MND is governed by CEQA (Public Resources Code [PRC] Section 21000, et seq.) and the State CEQA Guidelines (California Code of Regulations [CCR] Section 15000, et seq.). Specifically, State CEQA Guidelines Section 15063 ("Initial Study") and Sections 15070–15075 ("Negative Declaration Process") guide the process for the preparation of an IS/MND. Where

[1] See State CEQA Guidelines Section 15377 ("Private Project") and Section 15378 ("Project").
[2] See State CEQA Guidelines Sections 15250 to 15253 ("Statutory Exemptions") and Sections 15300 to 15332 ("Categorical Exemptions").

appropriate and supportive to an understanding of the issues, reference is made either to the statute, the State CEQA Guidelines, or appropriate case law.

This IS/MND, as required by State CEQA Guidelines Section 15071, contains (1) a brief description of the Project, (2) the Project location, (3) a proposed finding that the Project will not have a significant effect on the environment, (4) a copy of the IS documenting support for the findings, and (5) all mitigation measures to be implemented.

Environmental Issues Addressed

This IS/MND evaluates the proposed Project's effects on the following resource topics.

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- 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
- Wildfire
- Mandatory Findings of Significance

The environmental setting and impact analysis discussion for each of these topics is provided in Chapter 3, *Initial Study Environmental Checklist*.

Document Organization and Content

The content and format of this IS/MND is designed to meet the requirements of CEQA. This report is organized as follows:

- Chapter 1, Introduction, identifies the purpose and scope of the IS/MND and the terminology used in the IS/MND.
- Chapter 2, Project Description, describes the location, general environmental setting, Project background, Project components, and the characteristics of the proposed Project's construction and operational phases.

- Chapter 3, Initial Study Environmental Checklist, presents the environmental setting and impact analysis for each resource topic. This chapter also includes a discussion of cumulative impacts if any, for each of the environmental resource areas.
- Chapter 4, References, identifies all printed references and individuals cited in this IS/MND.
- Chapter 5, List of Preparers, identifies the individuals who prepared this report and their areas of technical expertise, as well as the individuals consulted for the preparation of this report.

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Chapter 2
Project Description

Project Overview

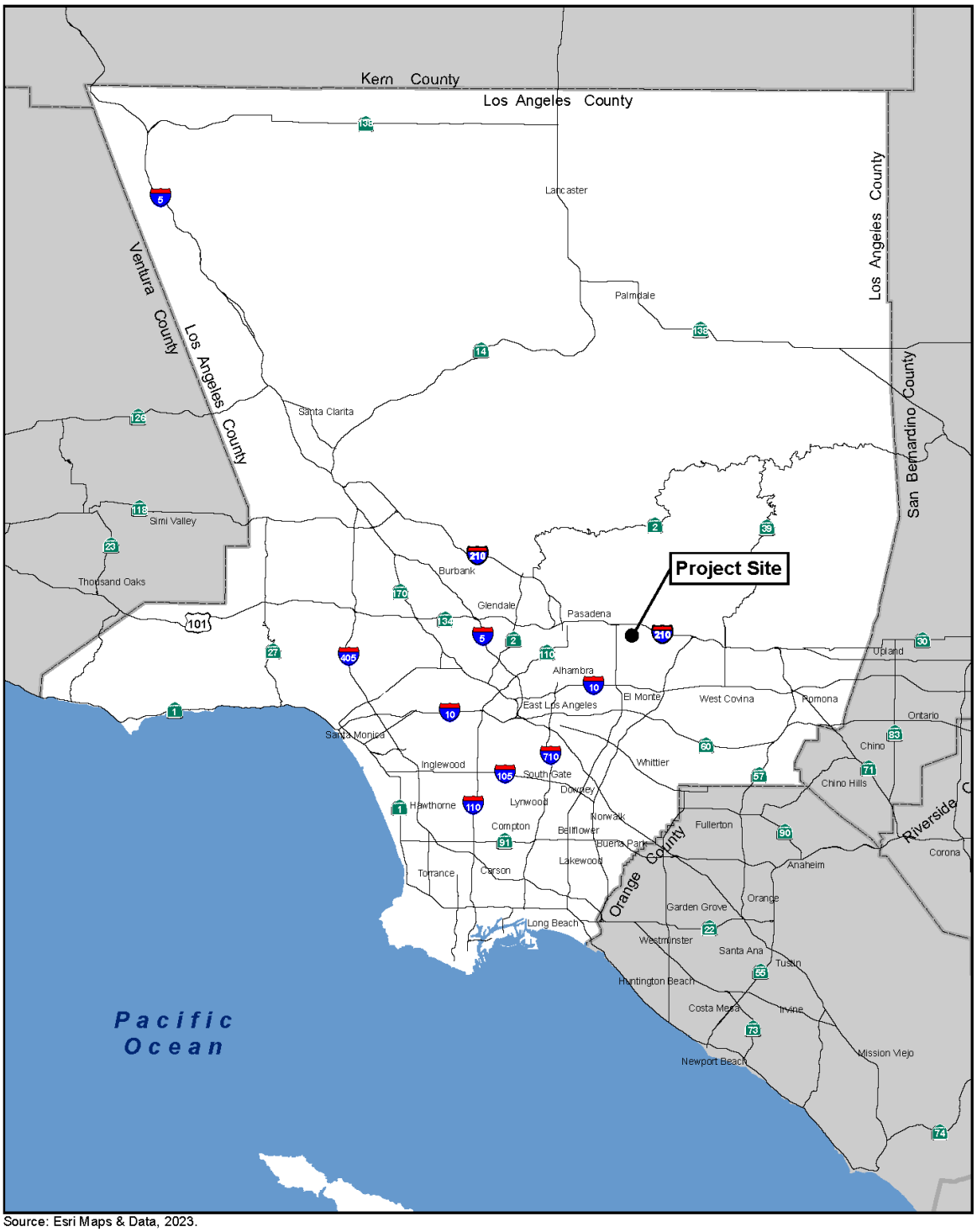
The District proposes to restore and enhance Baldwin Lake (Lake) and Tule Pond (Pond), two features located within the property of the Los Angeles County Arboretum and Botanic Garden (Arboretum) in the City of Arcadia, California within Los Angeles County (Figure 2-1, Regional Vicinity Map). The Baldwin Lake and Tule Pond Restoration Project (proposed Project, or Project) proposes several improvements to the Lake and Pond to restore the aquatic ecosystem, improve water quality, increase stormwater detention, and provide additional aesthetic, education, and operational benefits to Arboretum visitors; improvements include the following components, which are described in detail in the Project Description provided later in this document:

- Removal of 65,000 cubic yards (CY of sediment to deepen the Lake and Pond;
- Installing a liner, and aeration units to improve the aquatic ecosystem at the Lake;
- Installation of an ultrasonic algae remediation system to reduce algae growth at the Lake;
- Realignment of one storm drain outlet and reconstruct three (3) storm drain outlets with energy dissipators to minimize erosion;
- Treatment of residential street runoff at Pond by installation of hydrodynamic separators and media filtration;
- Restoration of the Lake's historic retaining wall perimeter, and other Lake and Pond shoreline stabilization such as concrete riprap;
- Landscaping improvements, including installation of a viewing deck at the Lake.

Location and Vicinity

The Project site is located at 301 North Baldwin Avenue, in the City of Arcadia, California. The Arboretum is in the northwestern portion of the San Gabriel Valley. The Arboretum is bounded by the Interstate-210 (I-210) freeway to the north, Baldwin Avenue on the east, Hugo Reid Drive to the south, and Golden West Avenue on the west (Figure 2-2, Project Location Map).

The Santa Anita Park (Racetrack) and the Westfield Santa Anita Mall are located across Baldwin Avenue immediately east and southeast of the Arboretum. The nearest sensitive receptors are single-family and multi-family residential structures that are directly adjacent to the Project site, north, south, and west of the property line.



Source: Esri Maps & Data, 2023.

Figure 2-1
Regional Vicinity Map



Source: bing map, 2023; Prepared By: AECOM, 2023.

Figure 2-2
Project Location Map

The Arboretum provides enjoyment and learning opportunities to the public regarding nature, horticulture and historic resources. The Arboretum has been used continuously as a location site for many films, television series, commercials and videos[3]. Throughout the year, classes, tours, concerts, and immersive outdoor light installations attract visitors to the Arboretum from the community and the greater Los Angeles area. The Arboretum attracted 590,244 visitors during the 2020-2021 fiscal year[4], and 772, 503 visitors during the 2021-2022 fiscal year with similar visitor attendance expected in coming years.[5]

Existing Site Conditions

The Lake and Pond are prominent features of the 127-acre Arboretum (Figure 2-3, Site Location Map). The Lake covers 3.4 surface acres, while the Pond covers roughly 0.7 surface acres of the Arboretum grounds. The Lake is located approximately 205 feet east of the Pond and is separated by vegetation, mature trees, and an existing paved walkway. Key features adjacent to the Lake include the historic Queen Anne Cottage, the Coach Barn, the Reid-Baldwin Adobe, cobblestone retaining walls around the shoreline, and numerous trees that date back to when the Queen Anne Cottage was built, and to the opening of the Arboretum in 1948.

The Pond is currently fed by runoff from the residential areas to the northwest and west of the Arboretum. The Pond holds water during the rainy season (winter and early spring) and dries up between infrequent rain event and the summer months. The additional capacity in the pond resulting from excavation of deposited materials will allow it to hold more storm runoff. Once the pond is full, the runoff will drain into the Lake through an existing reinforced concrete pipe culvert. The additional capacity in the Lake resulting from the excavation of deposited materials will allow the Lake to capture more storm runoff thus reducing the flow that enters the flood control system. Over the past decades, the runoff and storm flows have contributed to sediment deposition. Sediment sampling indicates lead and metals contamination, which along with sediment accumulation has negatively affected the Pond's ability to perform as a pre-settling basin to the Lake as it was originally intended.

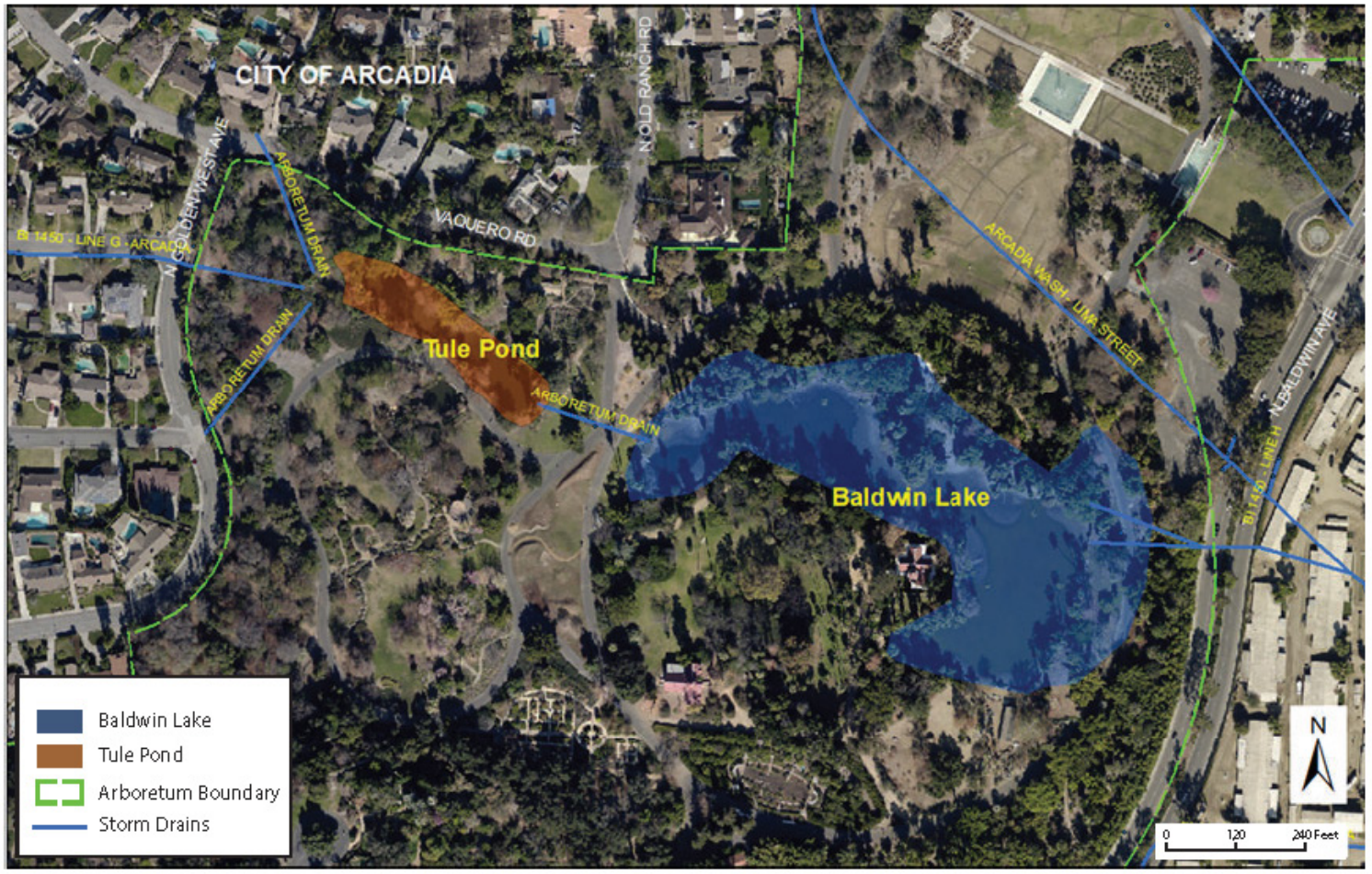
Proposed Project

Project Background

The Lake and the Pond are two significant and historic features at the Arboretum, and of the greater Los Angeles region. The Arboretum is under ownership of the County of Los Angeles (County) and operated by the County of Los Angeles Department of Parks and Recreation (DPR), and the Los Angeles Arboretum Foundation.

The Lake is a natural spring fed sag pond that developed due to seismic movement of the Raymond Fault. This sag pond was a water source for the earliest inhabitants of today's Los Angeles County who lived on the site of the Arboretum at least 3,000 years ago and was a Native American settlement prior to the arrival of the Spanish to California. The site was part of the greater Rancho Santa Anita, one of the

[3] Los Angeles Arboretum and Botanic Garden. Available at: https://www.arboretum.org/rentals/tv-movies
[4] Los Angeles Arboretum Foundation. 2021 Annual Report. Available at: https://www.arboretum.org/arboretum-impact-report-2021
[5] Communication from Los Angeles Department of Parks and Recreation to AECOM. March 23, 2023.



Source: Los Angeles County Public Works 2023.

Figure 2-3

Site Location Map

Mexican land grants of Southern California. The land was purchased in 1875 by Elias Baldwin to develop Baldwin Ranch. In the late 1880s, Mr. Baldwin removed sediment from the lake, deepening it to 12 to 15 feet, and built the Queen Anne Cottage on the west side of the lake. In 1947, the State of California and the County of Los Angeles jointly purchased the property to create an arboretum around the Baldwin site. Baldwin Lake is listed on the National Register of Historic Places as a support feature for the Queen Anne Cottage.

The Pond was once an upstream arm of Baldwin Lake until it was cut off in the 1950s by grading activities. It is currently fed by urban runoff from the residential areas to the northwest and west of the Arboretum. The Pond was originally planted with California native rush and tule to represent what the overall area would have looked like prior to development. Typically, the Pond holds water during the rainy season of winter and early spring and dries up by mid to late spring. When the Pond reaches capacity, runoff drains into the Lake through an existing reinforced concrete pipe culvert.

Stormwater runoff from the surrounding streets and residential areas has contributed to soil contamination and deposition in the Pond, especially near the existing storm drain outlets. This sedimentation negatively affects the Pond's ability to perform as a pre-settling basin to the Lake. In addition to deposition from storm drains, a significant amount of sediment build-up has been generated from on-site Arboretum grounds. This is due to both uncontrolled runoff during storm events and erosion of the Pond's shore edge due to scouring and wave action of the incoming storm flows. As the Pond is unable to perform as originally intended, more of this sediment has been transported to the Lake. During strong storm events, water in the Lake will overflow into Arcadia Wash. The Arcadia Wash is owned and maintained by Los Angeles County Flood Control District (LACFCD) and is part of the Rio Hondo watershed, a tributary of the larger Los Angeles River watershed. A discussion of plans for the excavated soils is provided in the *Construction Scenario and Phasing* section below, as well as in Section III, Air Quality.

Originally 15-18 feet deep[6], currently, the Lake is approximately 2.5 to 3 feet deep due to the accumulation of sediment and organic material which has resulted in low levels of dissolved oxygen, algae build-up, temperature spikes during the summer, lack of water circulation, and potentially high bacteria levels. Uncontrolled runoff during storm events, erosion along the shoreline, including deterioration of the historic cobblestone retaining walls, and overgrown vegetation have contributed to the Lake's degradation. The declining condition of the Lake and Pond has also reduced aquatic productivity and bird use at both features. As a stopover along the Pacific Flyway for migratory bird species[7], the current shallow depths are not sufficient to sustain a healthy ecosystem.

Project Description

The primary components of the proposed Project would restore and enhance the Lake and Pond through flood control and water quality improvements, and perseveration measures.

The proposed Project includes the following components for the Lake (Figure 2-4, Baldwin Lake Proposed Improvements):

[6] Los Angeles County Arboretum. 2019. Baldwin Lake Frequently Asked Questions. Available at: https://www.arboretum.org/save-baldwin-lake/frequently-asked-questions/#:~:text=A%3A%20Over%20the%20years%2C%20the,24%20inches%20when%20rains%20occur.

[7] https://www.arboretum.org/save-baldwin-lake/frequently-asked-questions/#:~:text=A%3A%20Over%20the%20years%2C%20the,24%20inches%20when%20rains%20occur.



Source: Los Angele County Public Works 2024.

Figure 2-4

Baldwin Lake Proposed Improvements

Lake Improvements

- Reconfigure the 48-inch reinforced concrete pipe (RCP) outlet on the upstream end of the Lake and construct an outlet structure with energy dissipators to minimize erosion on the opposite shoreline.
- Apply air-placed concrete along the west perimeter of the Lake for slope stability.
- Removal of excess sediment and organic material for a proposed lake depth up to14 feet.
- Removal of impacted trees along and within the shoreline perimeter to restore the historic alignment of the Lake.
- Construct a concrete retaining wall with a cobblestone façade around the perimeter of the Lake in compliance with a historical preservation consultant to restore the Lake's historical appearance, and shoreline alignment. The existing, deteriorating wall would be restored based on National Park Service (NPS) Technical Preservation Services (TPS) Preservation Briefs that outline acceptable repair, rehabilitation, and maintenance methods appropriate to retaining walls and cobblestone façade.
- Construct a vault hatch structure (10-foot by 8-foot) at the south end of the Lake by the Boat House to house mechanical and electrical equipment This structure will connect to a below grade wet well (24-feet deep by 10-foot diameter). Improvements to the Boat House are not part of this Project. Construct aeration compressor stainless steel cabinet (16-inches by 16-inches by 20.5-inches)
- Construct a viewing deck to provide aesthetic and education opportunities at the eastern end of the Lake.
- Construct an approximately 18-foot by 70-foot concrete boat ramp along the west perimeter of the Lake to facilitate maintenance on the Lake.
- Install landscaping, including an irrigation system along the perimeter of the Lake. Landscaping improvements will occur within 10 feet of the Lake edge.
- Install a bentonite liner in the Lake to minimize water loss from percolation. A ground water management system may be required to remove potential hydrostatic pressure underneath the liner.
- Install an aeration and filtration system consisting of pipes, pumps and diffusers tied to a power source to promote a healthy aquatic habitat.
- Install an ultrasonic algae remediation system, which is a non-chemical system that pulses out sound waves at specific frequencies to disable algae growth and prevent biofilm formation without causing harm to other forms of life.
- Provide guidance on operations and maintenance of the Project's improved water quality features for use by maintenance staff.

The proposed Project includes the following components for the Pond (Figure 2-5, Tule Pond Proposed Improvements):

Pond Improvements

- Reconstruct the three outlet structures at the upstream end of the Pond with energy dissipators to minimize erosion of the adjacent embankment.
- Reconstruct a portion of the Arboretum Drain 3 system at Vaquero Road, which will include a new RCP storm drain upstream of the diversion structure, connector pipe, and rural catch basin.
- Realign the existing storm drain that currently conveys runoff from Old Ranch Road to the Lake to outlet into the Pond. This storm drain will require a new outlet structure with energy dissipators to minimize erosion of the adjacent embankment.
- Strategically place concrete riprap around the outlet structures to minimize bank erosion.
- Re-grade the Pond and excavate excess material to achieve the Pond's historical capacity, with depths up to 12 feet. This would increase the capacity and stormwater percolation. Preliminary investigation shows that this sediment is contaminated with lead and would need to be handled and disposed of at a site permitted to accept contaminated soil.
- Install landscaping and irrigation system along the perimeter of the Pond. Landscaping limits will be determined in conjunction with the Arboretum's arborist.
- Install four in-line treatment systems, which will include diversion structures, hydrodynamic separator units (HDS) and media filtration systems along the three existing storm drains and proposed Old Ranch Road Storm Drain realignment for further stormwater treatment before runoff outlets into the Pond. The HDS units will treat runoff for trash, sediment, and oils and the media filtration systems will treat any additional sediment, debris, free-floating oil, heavy metals and phosphorus not captured by the HDS units.
- Construct three new ¾" crushed rock maintenance access road along the west side of the Arboretum for future maintenance access to the four proposed HDS units and media filtration units. The access roads to be constructed along the west side within the Arboretum property are near the intersection of Vaquero and Old Ranch Road (Old Ranch Road), near Vaquero Road and Golden West Avenue (D1), and near Monte Verde Drive and Golden West Avenue (D2 & D3). The length and width of the access roads vary at different segments; the widest access road is at D1 and ranges from approximately 12 to 45 feet and the length varies from 165 feet (Old Ranch) to 281 feet (D2 & D3).

Project Objectives

The primary objectives of the proposed Project are to:

- Improve flood protection and increase water conservation by increasing the depth of the Lake and Pond by excavating approximately 65,000 cubic yards (CY) of sediment.
- Improve water quality by treating stormwater runoff.



Source: Los Angeles County Public Works 2024.

Figure 2-5
Tule Pond Proposed Improvements

- Improve flood protection and increase water conservation by increasing stormwater detention.
- Increase water conservation by reducing potable water demand by lining the Lake to reduce water loss.
- Increase water conservation and improve water quality by improving infiltration of stormwater and low flow runoff at the Pond.
- Enhance the aesthetic, historical, and operational features of the Lake and Pond.

In addition, the proposed Project addresses critical needs of the greater Los Angeles County region by:

- Improving water supply; stormwater will be collected and percolated into the groundwater.
- Improving surface water quality by treating contaminated urban runoff
- Reducing flood risk during storm events.
- Enhancing open space, habitat, and recreational features by increasing water depth, improving the ecosystem, and providing various recreational features.
- Reducing lake infiltration to reduce potable and imported water use.
- Addressing climate change by reducing energy consumption and increasing carbon sequestration through tree plantings.

Project Construction

Construction Schedule

The estimated duration of construction of the proposed Project is 18 months and is anticipated to occur from July 2025 through January 2027. The Project site, including adjacent trails and paths would be closed to the public during this time; access to the area would be blocked with standard barricades and caution tape. Other areas of the Arboretum would be open and accessible to the public during construction.

Construction would occur Monday through Friday from 7:00 a.m. to 4:00 p.m. The County of Los Angeles Municipal Code Noise Ordinance states that operation of construction equipment is limited to weekday hours of 7:00 a.m. and 7:00 p.m.[8] The City of Arcadia Municipal Code states that construction activities are limited to between the hours of 7:00 a.m. and 6:00 p.m.[9] during the weekdays, and between 8:00 a.m. and 5:00 p.m. on Saturdays; no construction is allowed on Sundays.[10] No weekend or nighttime

[8] County of Los Angeles Municipal Code. https://library.municode.com/ca/los_angeles_county/codes/code_of_ordinances?nodeId=TIT12ENPR_CH12.08NOCO

[9] City of Arcadia Municipal Code https://library.municode.com/ca/arcadia/codes/code_of_ordinances?nodeId=ARTIVPUWEMOPO_CH2DICONUET_PT6NICO_4262COLI

[10] City of Arcadia https://www.arcadiaca.gov/discover/open_government/faqs.php#:~:text=Construction%20hours%20are%207%3A00,construction%20is%20allowed%20on%20Sundays

construction work is planned with the proposed Project. In addition, no closures of the residential streets adjacent to the Arboretum are anticipated.

Construction Scenario and Phasing

Construction activities will be phased at the Lake and Pond and would include draining both water bodies to remove accumulated sediment. Once the Lake and Pond are drained, the sediment requires drying. Once dry, the removed sediment would require removal by trucks from the Project site and delivery to a specified disposal facility. Core samples from the Pond indicated that the sediment contains substantial levels of lead, particularly upstream near stormwater input; as such, this sediment must be disposed of appropriately as hazardous waste.[11] Any existing soil or sediment that is determined to be useable may be considered for reuse within the Lake and Pond beds. Approximately 5.36 acres will be graded, and approximately 65,000 cubic yards (CY) of soil will be excavated, with approximately 59,000 CY from the Lake, and 6,000 CY from the Pond.

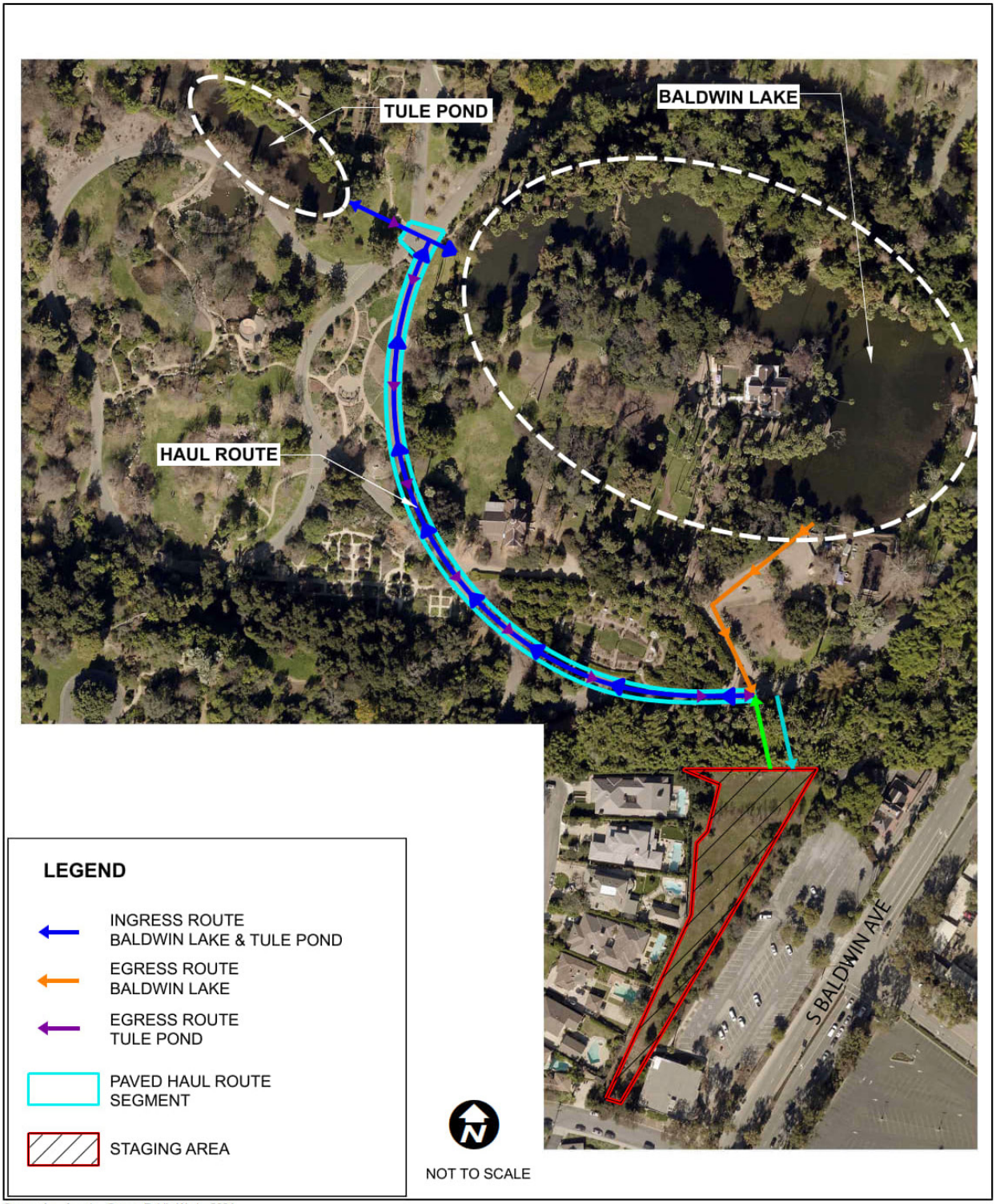
Once the Lake and Pond have been drained and dried out sufficiently, construction phasing of the proposed Project is anticipated to occur as shown on Table 2-1:

Table 2-1 Construction Phasing and Duration

Construction Phase	Duration
Lake and Pond Draining	3 to 4 weeks
Drying Period of Lake and Pond	1 month
Mobilization	1 month
Clear and Grub Lake and Pond	4 weeks
Remove reinforced concrete, existing inlets and outlets	4 weeks
Dewatering of Tule Pond and Baldwin Lake	34-38 weeks
Excavate. Transport, and dispose hazardous waste sediment from Tule Pond	4 weeks
Excavate. Transport, and dispose contaminated sediment from Baldwin Lake	10-14 weeks
Build new structures and place reinforced concrete pipes	12 weeks
Install river rock, water quality systems, and liner	3 weeks
Install landscaping hardscape, electrical systems	12 weeks
Install signage, benches, lighting	3 weeks
Final inspections	2 weeks

The temporary construction staging and laydown areas, shown in Figure 2-6, Construction Staging Area and Haul Route, will be located on an approximately 1-acre (50,000 square foot) site on Arboretum property adjacent to the Santa Anita Train Depot, LADPW Building and Safety field office, and overflow parking area. Temporary construction access to the staging area will come from the south side of the

[11] TetraTech. 2015. *Draft Sediment Sampling Report for the Los Angeles Arboretum and Botanic Garden.*



Source: Los Angeles County Public Works 2024.

Figure 2-6

Construction Staging Area and Haul Route

Arboretum. Movement of construction equipment and material from the staging area to the Pond and Lake are shown in Figure 2-6. Worker parking is anticipated to be within the existing overflow parking lot near the LADPW Building and Safety field office, adjacent to, and east of the staging area. It is anticipated that between 15 to 20 workers would be on site during construction, with up to 50 on site during peak construction activities.

Construction Equipment

Various pieces of Tier 4 diesel construction equipment would be used to accomplish the restoration of the Lake and Pond. The Tier 4 diesel engine standards have the strictest United States (U.S.) Environmental Protection Agency (EPA) emission standards for off-highway diesel engines. This requirement regulates the amount of particulate matter (PM) and nitrogen oxides (NO_x) that can be emitted from an off-highway diesel engine. Specific Tier 4 equipment would be used during all phases of Project construction, including clearing, grubbing, excavations, and structure removals and replacements. This includes three excavators; up to three loaders; two dozers; two to three backhoes; 20 to 30 10-wheel haul trucks; and five to six work trucks.

The dozers would be used only during sediment removal. Hauling trucks would be used to move Lake and Pond sediment and vegetation. In addition, concrete trucks would be used as needed for pouring new structures. While all equipment is expected to be used during Project construction, different phases of the Project will require different equipment. For example, the first half of the Project includes grubbing and sediment hauling, which would require the larger equipment such as excavators, loaders and haul trucks, while the second half of the Project would require use of the backhoes and fewer haul trucks.

The Project would require an average of ten truck trips per day, with between 100 to 130 truck trips per day at the peak of construction activities. It is anticipated that sediment removed from the Pond will be classified as California-hazardous waste and therefore will need to be disposed of at a Class I hazardous waste landfill. The furthest, practicable Class I landfill is the US Ecology Nevada, Inc., facility near Beatty, Nevada, approximately 290 miles northeast of the Arboretum.[12] The anticipated haul route from the Arboretum to this facility would be the I-210 east, I-15 north, SR-127, and US-95 north.

Further, it is anticipated that sediment from the Lake will be classified as contaminated, non-hazardous waste and will need to be disposed of at a Class III landfill. The furthest, practicable Class III landfill is the Simi Valley Landfill and Recycling Center in Simi Valley, Ventura County, California [13] approximately 51 miles northwest of the Arboretum. It is anticipated that the haul route from the Arboretum to the Simi Valley Landfill would utilize the westbound I-210 and westbound SR-118 freeways.

Other potential Class III disposal facilities would be either the Sunshine Canyon Landfill in Sylmar, California, or the Chiquita Canyon Landfill in Castaic, California. The Sunshine Canyon Landfill is approximately 33 miles northwest of the Arboretum, and the Chiquita Canyon Landfill is approximately 46 miles northwest of the Arboretum. It is anticipated that the haul route to both of these facilities from the Arboretum would be the westbound I-210 freeway to the northbound I-5 freeway. Chapter 3,

[12] Republic Services. 2024. *Beatty Facility*. Available at: https://www.republicservices.com/facilities/nevada/beatty-facility

[13] CalRecycle. 2019. *Simi Valley Landfill & Recycling Center.* Available at: https://www2.calrecycle.ca.gov/SolidWaste/Site/Summary/3954

Section IX, Hazards and Hazardous Materials analyzes potential impacts related to the transport of hazardous materials, including hazardous waste.

Additional equipment will be required for dewatering or draining the Lake and Pond. Dewatering requires the use of pumps because the water recovered is often contaminated with sediment and other materials and requires treatment prior to discharge into the storm drainage system. The dewatering of the Lake and Pond will require various equipment including:

- 18,000 gallon tanks
- Bag/sand filters
- Ion exchange media vessels
- Granular Activated Carbon (GAC) media vessels
- Associated pumps and piping
- Generator (optional if on-site electrical is not available)

Construction Best Management Practices (BMPs)

Construction best management practices (BMPs) would be employed during construction of the proposed Project to help minimize or eliminate potential impacts to the environment. BMPs are distinguished from mitigation measures because they are based on existing regulatory requirements and/or are standard practices and procedures of the District and/or its contractors and are not unique to the proposed Project. BMPs are included in the design of the Project.

- The proposed Project would implement Rule 403 dust control measure required by the South Coast Air Quality Management District (SCAQMD),
- Appropriate erosion control, sediment control, tracking control, non-storm water and, waste management BMPs will be implemented.
- If necessary, any residual water Baldwin Lake, including residual water contained in the sediments or underlying soils, will be dewatered under the appropriate NPDES permit coverage.
- Although full road closures are not anticipated, prior to construction, reasonable advance notification (e.g., flyers) will be provided to fire, police, and emergency medical services, local residences, homeowners and businesses adjacent to, and within areas potentially affected by the proposed Project of any road and parking restrictions in their vicinity. The notices would include contact information for comments or questions related to construction activities.
- The proposed Project construction would incorporate source reduction techniques and recycling measures and maintain a recycling program to divert waste in accordance with P W construction and demolition debris recycling ordinances.

Project Operation

Operations and maintenance of the proposed Project would be divided amongst the District and its partners based on historical maintenance practices, current and proposed right-of-way and easements, watershed boundaries and new water quality features. Historically, maintenance ownership and responsibilities of the Lake and Pond have been covered in a Maintenance and Use Agreement between PW and DPR which will continue when the proposed Project is complete. Two flood control features (owned and operated by the District) within the Lake are the connector pipe between the Pond and Lake and the outlet structure on the eastside of the Lake. These flood control features will continue to be operated and maintained by the District.

The flood control feature within the Pond including the outlet structure, the three storm drains on the westside of the Pond and the realigned storm drain on the northside will be maintained by the District; the appropriate easements will be acquired, as necessary. The three storm drains that outlet into the west side of the Pond are currently documented District facilities under the 1954 Transfer Resolution between the District, and DPR would maintain all other improvements not explicitly mentioned above under the Maintenance and Use Agreement.

An Operations and Maintenance Plan will be developed by the District to ensure proper maintenance and operation of the newly installed water quality components such as the aeration system for the Lake and Pond. The plan would be implemented by the District and would be compatible with DPR's Lakes Management Plan.

Related Projects

Cumulative impacts are the Project's impacts combined with the impacts of other related past, present, and reasonably foreseeable future Projects. As stated in CEQA, Title 14, Section 21083(b), "a project may have a significant effect on the environment if the possible effects of a project are individually limited but cumulatively considerable." In addition, as stated in the State CEQA Guidelines, it should be noted that "the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the project's incremental effects are cumulatively considerable" (CCR, Title 14, Division 6, Chapter 3, Section 15064(I)(5)).

According to the State CEQA Guidelines:

> Cumulative impacts refer to two or more individual effects that, when considered together, are considerable and compound or increase other environmental impacts.
>
> (a) The individual effects may be changes resulting from a single project or a number of separate projects.
>
> (b) The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (CCR, Title 14, Division 6, Chapter 3, Section 15355).

As set forth in the State CEQA Guidelines, related projects consist of "closely related past, present, and reasonably foreseeable probable future projects that would be likely to result in similar impacts and be located in the same geographic area" (CCR, Title 14, Division 6, Chapter 3, Section 15355). The cumulative analysis in this initial study/mitigated negative declaration (IS/MND) includes all projects within a 0.5-mile radius of the proposed Project. Because the proposed Project would not increase the development intensity at the site and most of the effects would be site specific, the 0.5-mile radius was determined to be an adequate distance for encompassing related projects in order to consider the potential impacts of related Projects including construction activities, construction equipment movement, potential detours and road closures, disruptions to access of public services and facilities, as well as cumulative temporary and permanent environmental impacts related to air quality and noise. No other City of Arcadia Projects were identified within a 0.5-mile radius of the proposed Project[14]. In addition, no other Los Angeles County Projects were identified within a 0.5-mile radius of the proposed Project[15]. A review of applicable adopted planning documents and plans did not identify any Project within a 0.5-mile radius of the proposed Project[16]

For some resource areas, the cumulative discussion does not rely on the related Projects but instead uses the plan approach to cumulative impact analysis allowed for in Section 15130 (b)(1)(B) of the CEQA Guidelines, whereby "a summary of projections contained in an adopted local, regional, or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect" is relied upon. For each resource area, the cumulative discussion identifies whether the related Projects list or plan approach is followed, if Projects were identified within a 0.5-mile radius of the proposed Project.

CEQA Finding

Changes or alterations have been required in, or incorporated into, the Project that mitigate or avoid Project-related significant effects on the environment. Chapter 3, *Initial Study Environmental Checklist*, contains the complete environmental analysis. Proposed mitigation measures are also contained in Chapter 3 and would be provided in a separate Mitigation Monitoring and Reporting Program (MMRP). These mitigation measures were previously summarized in the Draft Mitigated Negative Declaration Summary at the beginning of this document.

Project Review and Approvals

Numerous approvals and/or permits would be required to implement the proposed Project. The environmental documentation for the Project would be used to facilitate compliance with federal and state laws and the granting of 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 the following:

- A City of Arcadia Engineering Division
    - Right-of-Way Permit
    - Approval of Traffic and Signal Control Plan

[14] City of Arcadia. 2023. *Current Projects.* Available at: https://www.arcadiaca.gov/shape/development_services_department/current_projects.php
[15] Los Angeles County Public Works. *Active Construction Projects.* Available at: https://pw.lacounty.gov/cons/acp/
[16] San Gabriel Valley Council of Governments. *Projects and Programs.* Available at: https://www.sgvcog.org/east-sgv-project

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Chapter 3
Environmental Analysis

1.	**Project Title:**	Baldwin Lake and Tule Pond Restoration Project
2.	**Lead Agency Name and Address:**	Los Angeles County Flood Control District By County of Los Angeles Public Works 900 S. Fremont Avenue, Alhambra, CA 91803
3.	**Contact Person and Phone Number:**	Grace Komjakraphan-Tek, Project Manager 1000 S. Fremont Avenue Alhambra, CA 91802
4.	**Project Location:**	Los Angeles County Arboretum and Botanic Garden 301 North Baldwin Avenue, Arcadia, CA 91007
5.	**General Plan Designation:**	Open Space – Outdoor Recreation
6.	**Zoning:**	OS - Open space
7.	**Description of Project:**	Refer to Chapter 2, Project Description
8.	**Surrounding Land Uses and Setting:**	Surrounding land uses include Very Low Density Residential to the west between Old Ranch Road and Hugo Reid Drive, and Low Density Residential to the south between Hugo Reid Drive, Baldwin Avenue, Huntington Drive.
9.	**Other Public Agencies Whose Approval is Required:**	City of Arcadia Engineering Division County of Los Angeles Department of Parks and Recreation
10.	**Have California Native American tribes that are traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, has consultation begun?**	The Gabrielino Tongva Indians of California and The Gabrieleño Band of Mission Indians – Kizh Nation have formally requested tribal consultation with the Los Angeles County Flood Control District under the California Environmental Quality Act (Public Resources Code [PRC] Section 21080.3.1, subdivisions (b) and (d)), and mitigation of potential impacts on tribal, cultural, and environmental resources.

Environmental Factors Potentially Affected

Any environmental factors checked below would indicate "Potentially Significant Impacts" as a result of the proposed Project. However, as a result of the environmental analysis the proposed Project would result in either no impact, a less than significant impact, or a less than significant impact with incorporation of mitigation for the environmental factors as indicated in the checklist evaluation below.

☐ Aesthetics	☐ Agriculture and Forest Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology/Soils	☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials
☐ Hydrology/Water Quality	☐ Land Use/Planning	☐ Mineral Resources
☐ Noise	☐ Population/Housing	☐ Public Services
☐ Recreation	☐ Transportation/Traffic	☐ Tribal Cultural Resources
☐ Utilities/Service Systems	☐ Wildfires	☐ 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 to 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 an impact on the environment that is "potentially significant" or "potentially significant unless mitigated" 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 project, nothing further is required.

Signature	Date
Printed Name	For

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 if 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, 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 EIR is required.
4. "Negative Declaration: Less than Significant with Mitigation Incorporated" applies when the incorporation of mitigation measures has reduced an effect from a "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 Section XVII, "Earlier Analyses," may be cross-referenced.)
5. Earlier analyses may be used if, pursuant to tiering, PEIR, 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 earlier analyses 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 Incorporated," describe the mitigation measures that 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, when 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 format, 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 a less-than-significant level.

I. Aesthetics	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☒	☐	☐
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?	☐	☐	☐	☒
c. In nonurbanized areas, substantially degrade the existing visual character or quality of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage). 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 that would adversely affect daytime or nighttime views in the area?	☐	☐	☒	☐

Environmental Setting

The existing visual setting at the Project site includes the Arboretum itself, which encompasses 127-acres. The City of Arcadia General Plan indicates that the land use designation of the Arboretum is Open Space – Recreation.[17] Further, the City of Arcadia's General Plan does not identify any officially designated scenic vistas within the City of Arcadia boundaries, but it does indicate that unobstructed views of the San Gabriel Mountains are particularly important to the City's aesthetic character and should be favored for preservation.[18] In addition, the Los Angeles County General Plan Conservation Element does recognize that mountain vistas and hillsides, including the San Gabriel Mountains, are a scenic feature of the Los Angeles region and should be preserved.[19]

The Project site is located within a highly urbanized area. Surrounding development includes residential areas that are less than 0.25 miles (1,320 feet) to the northwest and southwest of the Project area. However, distant views are almost entirely blocked by the Arboretum's features; views of the San Gabriel Mountains to the north can be seen from various locations around the Arboretum. The Arboretum's entrance, Bauer Fountain and McFie Pool, administration buildings, classrooms, tropical

[17] City of Arcadia. 2010. *General Plan – Land Use Element.* Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/general%20plan/Land%20Use%20Element%20Update%20Final_updated%202018.pdf

[18] City of Arcadia. 2010. *General Plan – Land Use Element.* Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/general%20plan/Land%20Use%20Element%20Update%20Final_updated%202018.pdf

[19] Los Angeles County General Plan 2035. 2022. *Chapter 9: Conservation and Natural Resources Element.* Available at: https://planning.lacounty.gov/wp-content/uploads/2022/11/9.0_gp_final-general-plan-ch9.pdf

greenhouse, library, gift shop, café and parking are concentrated primarily on the east side of the property adjacent to Baldwin Avenue.

The Arboretum is divided into six (6) main landscape areas: Africa, Australia, Historic Circle, Idea Garden, Meadowbrook, and Tallac Knoll[20]. The proposed Project will be located in the Historic Circle and Meadowbrook areas. The Lake is one of the dominant visual features in the Historic Circle along with the historic Queen Anne Cottage, the Reid-Baldwin Adobe, and the Coach Barn. The Queen Anne Cottage and Reid-Baldwin Adobe are adjacent to the Lake. The Rose Garden and Santa Anita Train Depot are within the Historic Circle but are located south of the Lake. A paved walking path makes up the perimeter of the Historic Circle, and several shorter paths and trails within the Historic Circle connect to the perimeter path. Vegetation is abundant in the Historic Circle and includes Mexican fan palms, Bald cypress, and Coast redwoods. A vista overlook is located on the east side of the Lake and provides a wide view of the Lake in the foreground with the Queen Anne Cottage as a backdrop. The visual character of this area of the Arboretum is forest-like, while that of the view of the Lake and Queen Anne Cottage is a parkland with a spacious lawn surrounded by water and accented by numerous mature trees.

The Pond is located in the Meadowbrook area which provides views of the San Gabriel Mountains framed with magnolias and deciduous trees. The banks of the Pond are lined with a variety of trees including Mexican fan palms, tropical ash, and bamboo, as well as giant sedge. A paved walking path is located on the south side of the Pond while an unpaved path is located on the north side. Views of the adjacent neighborhoods, less than 0.25-miles (1,320 feet) to the northwest and west, are blocked by vegetation around the Pond. In addition, from this area of the Pond, views of the distant San Gabriel Mountains are obscured by surrounding trees and dense vegetation. The visual character of the Pond is less developed setting with California native rush and tule to represent what the overall area would have looked like prior to development.

Impact Analysis

Would the project:

a. Have a substantial adverse effect on a scenic vista?

Construction

Less-than-Significant with Mitigation Incorporated. A scenic vista generally provides focal views of objects, settings, or features of visual interest; or panoramic views of large geographic areas of scenic quality, primarily from a given vantage point. Impacts to scenic vistas can occur when the visible scenic landscape itself is altered or when a new contrasting object is introduced that is incompatible, blocks or obstructs a view of a scenic vista.

As described above in Environmental Setting, the City's General Plan does not identify any officially designated scenic vistas within City boundaries, although the General Plan does indicate that unobstructed views of the San Gabriel Mountains are important to the City's aesthetic character and should be favored for preservation. The San Gabriel Mountains provide a visual backdrop to the Arboretum and are visible from various areas on the Arboretum grounds. However, at the Project site, which includes both the Historic Circle and Meadowbrook areas of the Arboretum, distant, panoramic views of the San Gabriel Mountains are limited by dense vegetation and numerous trees. Within the

[20] Los Angeles County Arboretum. 2023. Garden Map. Available at: https://www.arboretum.org/visit/preparing-for-your-visit/garden-map/

Historic Circle, the historic Queen Ann Cottage provides a focal setting, visual interest and scenic view which will be limited during construction. Implementation of Mitigation Measure (MM) AES-1, as listed below, will reduce visual effects associated with visible construction activities Although the visual barriers described in MM AES-1 would introduce a visual intrusion, the barriers themselves would not be a significant visual impact as they would be located in an area of the Arboretum with limited distant views of the San Gabriel Mountains due to surrounding vegetation, they would be utilized for a finite period of time and would be removed upon construction completion. Therefore, incorporation of MM AES-1 would reduce construction related impacts to scenic vistas to less than significant.

Operation

No impact. Once construction is completed, the proposed Project is anticipated to have a positive aesthetic impact on the Arboretum. For example, the improvements to water quality will better support the aquatic habitat of the Lake and Pond to attract migratory birds. In addition, reconstruction of the historic cobblestone shoreline will result in a positive appearance as it frames the outline of the water features. Landscape improvements, including removal of unhealthy trees and shrubs and trimming and pruning the remaining vegetation around the Lake will open up sightlines, particularly views of the historic Queen Anne Cottage, and the remaining healthy vegetation will have a vibrant color influence on the landscape and provide more visual interest. Therefore, the Project is anticipated to have a positive improvement to the overall scenic quality of the Arboretum As described above, the San Gabriel Mountains provide a scenic backdrop to the Arboretum yet within the Project area the views of the mountains are limited. Upon competition, Project improvements will improve near view sight lines and visual interest in the immediate vicinity and Project features would not be obtrusive or out of scale with surroundings. Maintenance activities associated with Project improvements would not be substantially greater than existing maintenance activities around the Arboretum. Therefore, no impacts related to scenic vistas would occur.

Mitigation Measures

MM AES-1: The construction contractor shall use appropriate screening (i.e., barricades and/or temporary fencing with opaque materials) to screen views of construction activities and construction equipment as well as materials and soil in construction staging areas. The visual barrier may be chain link fencing with privacy slats, fencing with windscreen material, a wooden or barrier/soundwall, or another similar barrier. The visual barrier shall be a minimum of 6 feet high to help maintain the privacy of sensitive visual receptors and block ground-level views toward construction activities. The construction contractors will remove the visual barrier when construction is completed and all construction equipment and materials are removed from the site.

b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?

Construction and Operation

No Impact. There are no scenic highways in the vicinity of the proposed Project nor is the Project site visible from a scenic highway. Officially Designated State Scenic Highways within Los Angeles County include portions of State Route (SR)-1 in western Los Angeles County[21], which is not in the vicinity of the Project site. As such, no construction- or operation-related impacts on scenic resources, including trees,

[21] California Department of Transportation. 2023. *California State Scenic Highways.* Available at: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways

rock outcroppings, historic buildings, or any other scenic resources along a scenic highway, would occur as a result of the proposed Project. Therefore, no impacts would occur.

Mitigation Measures

No potentially significant impacts related to scenic resources along a state designated scenic highway would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

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

Construction

Less-than-Significant Impact with Mitigation Incorporated. Construction activities associated with the proposed Project would require the use of standard barricades to block public access to the Project site and shield construction equipment and storage of materials on site, representing a temporary change to the scenic quality and character of the Project site, particularly of the historic Queen Ann Cottage which provides a focal setting, visual interest and scenic view within the Historic Circle area of the Arboretum. While construction activities would not conflict with any zoning or other regulations governing scenic quality, implementation of MM AES-1, as described below, will reduce visual effects associated with visible construction activities to less than significant.

Operation

Less-than-than-Significant Impact. Once constructed, features of the proposed Project are not expected to have a permanent effect on the visual character at the Project site or on the overall Arboretum. Upon Project completion, the overall aesthetic impact for the proposed Project features is expected to be positive with development of new shoreline retaining walls, landscape improvements to enhance scenic quality, and water quality improvements to support a revitalized aquatic ecosystem. The proposed Project would slightly alter the existing visual character of the Project site (e.g., installation of improved shoreline retaining walls, vegetation clearance) but these improvements would be consistent with existing features and provide a net benefit to the overall visual character and quality to the Arboretum. Once completed, Project features will be properly maintained to minimize long-term impacts on aesthetics, and visual quality. Poorly maintained features can potentially result in significant aesthetics impacts related to water quality, overgrown landscaping and debris which can result in degradation of the visual character and quality of the Project site.

As described in Chapter 2: Project Description, a Monitoring and Maintenance Plan would be developed to ensure water quality and operational service life of the Lake and Pond are maintained. Once operational, the Project would not conflict with any zoning or other regulations governing scenic quality. Therefore, operational impacts related to visual character or quality would be less than significant.

Mitigation Measures

MM AES-1: The construction contractor shall use appropriate fencing (i.e., barricades and/or temporary fencing with opaque materials) to screen views of construction equipment as well as materials and soil in construction staging areas. The visual barrier may be chain link fencing with privacy slats, fencing with windscreen material, a wooden or barrier/ soundwall, or another similar barrier. The visual barrier shall be a minimum of 6 feet high to help maintain the privacy of sensitive visual receptors and

block long-term ground-level views toward construction activities. The construction contractors will remove the visual barrier when construction is completed and all construction equipment and materials are removed from the site.

d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

Construction

Less-than-Significant Impact. As shown in Figure 2-2, Project Location Map, sensitive receptors include single- and multi-family residences located less than 0.25 miles (1,360 feet) northwest and southwest of the Project site; these sensitive receptors are closest to the Pond and the construction staging area. Construction activities would not occur during nighttime hours (due to construction noise restriction on work hours) and therefore would not require nighttime construction lighting. However, temporary standard safety and security lighting could be installed at the Project site during the construction period. Although sensitive receptors are located near the Project, minimal spillover light is anticipated as safety and security lighting would be hooded and directed downward, and the existing, dense Arboretum vegetation would provide additional screening. Further, all construction related lighting removed upon completion of construction. Thus, Project construction would not adversely affect daytime or nighttime views in the area by introducing a substantial light source that would spill over onto sensitive receptors, nor would the temporary presence of night-time low-level security lighting contribute to a significant increase in illumination levels compared to existing conditions. No source of glare would be introduced as a result of construction of the proposed Project. As such, construction impacts related to light, and glare would be less than significant.

Operation

Less-Than- Significant-Impact. The proposed Project does not include the installation of additional permanent outdoor lighting. Once operational, the lighting around the proposed Project will be the same as existing conditions. Therefore, operational impacts related to the creation of a substantial source of light or glare would be less than significant.

Mitigation Measures

The proposed Project would have less than significant construction and operational impacts related to light or glare, as described above. Therefore, no mitigation measures are required.

Cumulative Impacts

There are no related Projects within a 0.5-mile radius, as stated in Chapter 2, Project Description. Thus, no Projects would be within the viewshed of the proposed Project.

No scenic vistas or scenic corridors have been identified within the Project viewshed. As discussed above, once operational, the proposed Project would be visually compatible with surrounding land uses and developed areas and would not substantially degrade the visual character or quality of the surrounding area. The design of the proposed Project would include features that would maintain compatibility with the local context and surrounding visual environment. The proposed Project would also provide new landscaping that would further complement the surrounding area. Therefore, because no related Projects would occur within the 0.5-mile radius of the site and because there are no significant visual resources throughout the area, the incremental operational effects of the proposed Project would not be cumulatively considerable.

II. Agricultural and Forestry Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts on 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 the 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 conflict with 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 that, 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?	☐	☐	☐	☒

Environmental Setting

The Project site is located within the City of Arcadia. The Project site and surrounding area are not used for agricultural purposes. The California Important Farmland Finder, maintained by the California Department of Conservation, indicates that the Project site is not located on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.[22] Additionally, no forestland or timberland is found on the Project site or in the surrounding area.[23]

Impact Analysis

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 conflict with a Williamson Act contract?

c. Conflict with existing zoning for, or cause rezoning of, forestland (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 forestland or conversion of forestland to non-forest use?

e. Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forestland to non-forest use?

Construction and Operation

No Impact. The proposed Project would be located at the Arboretum, an area designated and zoned for parks, recreation, and open space which does not contain any agricultural uses or areas designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.[24] The Project site and surrounding area is not used for agricultural or forestry purposes. As a result, the proposed Project would not result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. Therefore, no impacts would occur.

Mitigation Measures

No potentially significant impacts related to agricultural or forestry resources would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

[22] California Department of Conservation. 2023. *Farmland Mapping & Monitoring Program.* Available at: https://www.conservation.ca.gov/dlrp/fmmp

[23] City of Arcadia. 2010*. Arcadia General Plan Land Use Element.* Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/general%20plan/Land%20Use%20Element%20Update%20Final_updated%202018.pdf

[24] California Department of Conservation. 2022. *California Important Farmland Finder.* Available at: https://maps.conservation.ca.gov/DLRP/CIFF/

Cumulative Impacts

As discussed above, the proposed Project would not result in any impacts to agriculture and forest resources. The proposed Project would not convert, or result in other changes that would convert, Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or forest land to non-agricultural or non-forest uses. Thus, construction and operation of the proposed Project would not result in cumulative agricultural and forestry impacts.

III. Air Quality	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. Would the project:				
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 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?	☐	☐	☒	☐

Environmental Setting

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

The Project site is within the South Coast Air Basin (Basin), an area covering approximately 6,745 square miles and bounded by the Pacific Ocean to the west and south and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the San Gorgonio Pass area in Riverside County. The terrain and geographical location determine the distinctive climate of the Basin, which is a coastal plain with connecting broad valleys and low hills.

Air Pollutants of Concern

Individual air pollutants at certain concentrations may adversely affect human or animal health, reduce visibility, damage property, and reduce the productivity or vigor of crops and natural vegetation. Six air pollutants have been identified by the United States Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) as being of concern both on a nationwide and statewide level: ozone; carbon monoxide (CO); nitrogen dioxide (NO_2); sulfur dioxide (SO_2); lead; and particulate matter (PM), which is subdivided into two classes based on particle size: PM equal to or less than 10 micrometers in diameter (PM_{10}) and PM equal to or less than 2.5 micrometers in diameter ($PM_{2.5}$).

Because the air quality standards for these air pollutants are regulated using human health and environmentally based criteria, they are commonly referred to as "criteria air pollutants." Ozone is not emitted directly into the air but is formed through a series of reactions involving reactive organic gases (ROGs) and nitrogen oxides (NO_X) in the presence of sunlight. ROG and NO_X are referred to as "ozone precursors."

Toxic Air Contaminants

In addition to criteria air pollutants, EPA and CARB regulate hazardous air pollutants, also known as toxic air contaminants (TACs). TACs collectively refer to a diverse group of air pollutants that can cause chronic (i.e., long-duration) and acute (i.e., severe but short-term) adverse effects on human health, including carcinogenic effects. TACs can be separated into carcinogens and noncarcinogens based on the nature of the effects associated with exposure to the pollutant. For regulatory purposes, carcinogens are assumed to have no safe threshold below which health impacts would not occur. Noncarcinogens differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

Regulatory Setting

Federal

Pursuant to the Clean Air Act, the EPA has established ambient air quality standards to protect public health and welfare with an adequate margin of safety. These federal standards, known as NAAQS, were developed for the six criteria pollutants described above. NAAQS represent safe levels of each pollutant to avoid specific adverse effects to human health and the environment. Two types of NAAQS have been established, primary and secondary standards. Primary standards set limits to protect public health, especially that of sensitive populations such as asthmatics, children, and seniors. Secondary standards set limits to protect public welfare, including protections against decreased visibility and damage to animals, crops, and buildings.

The Clean Air Act was amended in 1977 to require each state to maintain a State Implementation Plan (SIP) for achieving compliance with the NAAQS. In 1990, the Clean Air Act was amended again to strengthen regulation of both stationary and mobile emission sources.

Table 3-1 shows the NAAQS and the California Ambient Air Quality Standards (CAAQS), described below, currently in effect for each criteria pollutant. As summarized in Table 3-2, the Los Angeles County portion of the Basin is a nonattainment area under the NAAQS for ozone, $PM_{2.5}$, and lead.

Table 3-1. Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS[a]	NAAQS[b]
Ozone (O_3)	1 hour	0.09 ppm	—
	8 hours	0.070 ppm	0.070 ppm
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm
	8 hours	9.0 ppm	9 ppm
Nitrogen Dioxide (NO_2)	1 hour	0.18 ppm	100 ppb
	Annual arithmetic mean	0.030 ppm	53 ppb
Sulfur Dioxide (SO_2)	1 hour	0.25 ppm	75 ppb
	24 hours	0.04 ppm	0.14 ppm
Respirable Particulate Matter (PM10)	24 hours	50 µg/m^3	150 µg/m^3
	Annual arithmetic mean	20 µg/m^3	—
Fine Particulate Matter (PM2.5)	24 hours	—	35 µg/m^3
	Annual arithmetic mean	12 µg/m^3	12.0 µg/m^3
Sulfates	24 hours	25 µg/m^3	—
Lead (Pb)	30-day average	1.5 µg/m^3	—
	Calendar quarter	—	1.5 µg/m^3
	Rolling 3-month average	—	0.15 µg/m^3
Hydrogen Sulfide	1 hour	0.03 ppm	—
Vinyl Chloride	24 hours	0.01 ppm	—

Source: California Air Resources Board 2016.

[a] The California Ambient Air Quality Standards (CAAQS) for O_3, CO, SO_2 (1 hour and 24 hours), NO_2, PM10, and PM2.5 are not to be exceeded. All other California standards shown are not to be equaled or exceeded.

[b] The NAAQS, other than O_3 and those based on annual averages, are not to be exceeded more than once a year. The O_3 standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than 1.

ppm = parts per million by volume; ppb = parts per billion; µg/m^3 = micrograms per cubic meter

Table 3-2. Federal and State Attainment Status for Los Angeles County Portion of the South Coast Air Basin

Pollutants	Federal Classification	State Classification
Ozone (O_3) (1-hour standard)	—	Nonattainment
Ozone (O_3) (8-hour standard)	Nonattainment, Extreme	Nonattainment
Respirable Particulate Matter (PM10)	Attainment/Maintenance	Nonattainment
Fine Particulate Matter (PM2.5)	Nonattainment, Serious	Nonattainment
Carbon Monoxide (CO)	Attainment/Maintenance	Attainment
Nitrogen Dioxide (NO_2)	Attainment/Maintenance	Attainment
Sulfur Dioxide (SO_2)	Unclassifiable/Attainment	Attainment
Lead	Nonattainment	Attainment

Source: California Air Resources Board 2016.

State

In 1988, the state legislature adopted the California Clean Air Act, which established a statewide air pollution control program. The California Clean Air Act requires all air districts in the state to make progress towards meeting the CAAQS by the earliest practical date. The California Clean Air Act establishes increasingly stringent requirements over time. CAAQS are generally more stringent than NAAQS and incorporate additional standards for sulfates, hydrogen sulfide, visibility-reducing particles, and vinyl chloride.

The California Clean Air Act substantially adds to the authority and responsibilities of air districts. The California Clean Air Act designates air districts as lead air quality planning agencies, requires air districts to prepare air quality plans, and grants air districts authority to implement transportation control measures. The CAAQS are summarized in Table 3-1. As shown in Table 3-2, the Los Angeles County portion of the Basin is a nonattainment area under the NAAQS for ozone, PM_{10}, and $PM_{2.5}$.

Local

The Project is located within the Los Angeles County portion of the Basin, which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). SCAQMD has jurisdiction over an area of approximately 10,743 square miles, including all of Orange County; Los Angeles County, except for the Antelope Valley; the non-desert portion of western San Bernardino County; and the western and Coachella Valley portions of Riverside County. Although air quality in this area has improved, the Basin requires continued diligence to meet air quality standards.

SCAQMD has adopted a series of air quality management plans (AQMPs) to meet the CAAQS and NAAQS. The most recent air quality plan developed by the SCAQMD is the 2022 AQMP, which was adopted by the SCAQMD Governing Board on December 2, 2022 (SCAQMD 2022). The AQMP is the legally enforceable blueprint for how the region will meet and maintain the NAAQS and CAAQS. The 2022 AQMP is specifically focused on attaining the 2015 8-hour ozone standard. The 2022 AQMP builds upon measures already in place from previous AQMPs and includes a variety of additional strategies such as regulations, accelerated deployment of available cleaner technologies (e.g., zero emissions technologies, when cost-effective and feasible, and low NOx technologies in other applications), best management practices, co-benefits from existing programs (e.g., climate and energy efficiency), incentives, and other CAA measures to achieve the 2015 8-hour ozone standard.

SCAQMD published the *CEQA Air Quality Handbook* in November 1993[25] to help local governments analyze and mitigate project-specific air quality impacts. This handbook provides standards, methodologies, and procedures for conducting air quality analyses as part of CEQA documents prepared within SCAQMD's jurisdiction. SCAQMD also published the *Localized Significance Threshold (LST) Methodology for CEQA Evaluations* (SCAQMD 2008), which provides guidance for evaluating localized effects from mass emissions during construction.

[25] Section updates provided on the SCAQMD website.

Through the attainment planning process, SCAQMD also develops rules and regulations to regulate sources of air pollution in the Basin. SCAQMD rules relevant to the proposed Project include, but are not limited to:

- Regulation IV: Prohibitions; Rule 401: Visible Emissions. Prohibits the generation of particulate matter emissions that exceed the visible emissions threshold.
- Regulation IV: Prohibitions; Rule 402: Nuisance. Prohibits the discharge, from any source, of such quantities of air contaminants or other materials that cause or have a tendency to cause injury, detriment, nuisance, annoyance to people and/or the public, or damage to any business or property.
- Regulation IV: Prohibitions; Rule 403: Fugitive Dust. Regulates fugitive dust emissions from any commercial construction or demolition activity capable of generating fugitive dust emissions, including active operations, open storage piles, and inactive disturbed areas, as well as track-out and carry-out onto paved roads beyond a project site.
- Regulation XI: Source Specific Standards; Rule 1166: Volatile Organic Compound (VOC) Emissions from Decontamination of Soil. Sets requirements to control the emissions VOCs from excavating, grading, handling and treating VOC-contaminated soil as a result of leakage from storage or transfer operations, accidental spillage, or other deposition.
- Regulation XIV: Toxics and Other Non-Criteria Pollutants; Rule 1466: Control of Particulate Emissions from Soils with Toxic Air Contaminants. Regulates fugitive dust emissions from earth-moving activities, including the removal of soil that contains applicable TACs.

Methodology

Appendix G, Section III, of the State CEQA Guidelines states that, where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make determinations regarding air quality impacts. The SCAQMD has established recommended screening level thresholds of significance for regional and localized pollutant emissions, shown in Table 3-3 below.

The regional thresholds of significance were designed to identify those projects that would result in significant levels of air pollution and to assist the region in attaining the applicable state and federal ambient air quality standards, which were established using health-based criteria to protect the public with a margin of safety from adverse health impacts due to exposure to air pollution. Because regional air quality standards have been established for these criteria pollutants to protect the public with a margin of safety from adverse health impacts due to exposure to air pollution, these thresholds of significance can also be used to assess Project emissions and inform the Project's impacts to regional air quality and health risks under CEQA.

Table 3-3. South Coast Air Quality Management District Significance Thresholds (pounds per day)

	Regional Emissions Thresholds		Localized Emissions Thresholds[a]	
Pollutant	Construction	Operation	Construction	Operation
Nitrogen Oxides (NO_X)	100	55	203	203
Volatile Organic Compounds (VOCs)	75	55	N/A	N/A
Suspended Particulate Matter (PM10)	150	150	14	4
Fine Particulate Matter (PM2.5)	55	55	8	2
Sulfur Oxides (SO_X)	150	150	N/A	N/A
Carbon Monoxide (CO)	550	550	1,733	1,733
Lead (Pb)[b]	3	3	N/A	N/A

Source: South Coast Air Quality Management District 2008a, 2023.

[a] Localized thresholds derived from SCAQMD's LST Look-Up tables are based on the Project location (Source Receptor Area 9, East San Gabriel Valley), Project acreage, and the distance to the nearest sensitive receptor (25 meters). SCAQMD has not developed localized significance thresholds for VOC, SO_X, or lead emissions.

[b] The proposed Project would result in no lead emissions sources during construction or operations. As such, lead emissions are not evaluated herein.

Localized emissions of criteria air pollutants and precursors were assessed in accordance with SCAQMD's LST guidance (SCAQMD 2008). The LST Methodology provides Look-Up Tables with different thresholds based on the location and size of the Project site and distance to the nearest sensitive receptors. The Look-Up Tables provide thresholds for 1, 2, and 5-acre Projects sites within SCAQMD's 38 source receptor areas. The proposed Project construction limits would be approximately 5.36 acres. However, the 5-acre Project site threshold was utilized in order to provide a conservative analysis. The 5-acre Project site threshold can be used as a conservative measure because it assumes daily emissions associated with the construction activities are emitted on a 5-acre site (and therefore concentrated over a smaller area with higher air pollutant concentrations to the surrounding receptors). Thus, if emissions are less than the LSTs developed by SCAQMD for a 5-acre Project, then a more detailed evaluation for a larger Project site is not required. The Project limits are located within source receptor area 9 (East San Gabriel Valley).

For the purposes of a CEQA analysis, the SCAQMD considers a sensitive receptor to be a receptor such as a residence, hospital, or convalescent facility where it is possible that an individual could remain for 24 hours. The nearest sensitive receptors to the Project construction limits of work are single family residences located to the north of Baldwin Lake and Tule Pond, approximately forty-five meters away. The Look-Up Tables provide thresholds of significance for receptor distances at 25, 50, 100, 200, or 500 meters from the Project site boundary. Therefore, the LSTs were conservatively based on a 5-acre Project site and 25-meter receptor distance.

The LSTs represent the maximum emissions from a Project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standards. The LSTs are developed based on the ambient concentrations of that pollutant for each source receptor area. Since the LSTs consider the ambient air quality, LSTs can also be used to identify, based on mass emissions, those Projects that would result in significant levels of air pollution and impact sensitive receptors.

Construction emissions are short term or temporary but have the potential to result in a significant impact on air quality. Construction activities would generate temporary emissions of precursors to

ozone (VOC and NOx), CO, PM_{10}, and $PM_{2.5}$**.** VOC, NO_X, CO, PM_{10}, and $PM_{2.5}$ emissions are associated primarily with mobile equipment exhaust, including off-road construction equipment and on-road motor vehicles. Fugitive PM_{10}, and $PM_{2.5}$ dust emissions are also generated during site preparation and grading activities, and travel on roads and vary as a function of parameters such as soil silt content, soil moisture, wind speed, acreage of disturbance area, and miles traveled by construction vehicles.

Emissions generated by construction and operational activities were modeled using the California Emissions Estimator Model (CalEEMod), Version 2022.1. This model allows the user to enter Project-specific construction information, such as the types, number and horsepower of construction equipment, and the number and length of off-site motor vehicle trips. As described in Chapter 2, Project Description, construction of the proposed Project was assumed to begin in April 2025 and include the operation Tier-4 rated pumps, generators, excavators, loaders, dozers, backhoes, and haul and work trucks. The estimated construction workforce ranges from a maximum of 15 to 50 workers per day, depending on the construction phase. In addition, the proposed Project anticipates approximately 65,000 cubic yards (CY) of material would be exported, of which approximately 7,000 CY is anticipated to be contaminated soil. The proposed Project also involves the clearing and grubbing of Baldwin Lake and Tule Pond which is anticipated to result in approximately 3,000 CY of additional material export. As described in Chapter 2, Project Description, impacted soils excavated from the Project site are anticipated to be exported via haul truck to an approved facility; the furthest, practicable Class I landfill is the US Ecology Nevada, Inc., facility near Beatty, Nevada, approximately 290 miles northeast of the Arboretum. Nonhazardous waste is anticipated to be exported to a Class III disposal facility, up to 51 miles northwest of the Arboretum. Vendor truck trips for concrete and material deliveries associated with installation of the new structures, systems, and landscaping and worker trips were estimated based on CalEEMod default trip lengths and fleet mix information for Los Angeles County.

Following construction, operation of the proposed Project would involve 2 additional staff members and weekly water patrols for floating debris and daily shoreline landscape maintenance. Emissions associated with the additional staff members were also estimated in CalEEMod using default trip lengths and fleet mix information for Los Angeles County. Based on information provided by the Arboretum Foundation, the analysis assumed a 5-horsepower gasoline-powered pontoon boat would be used for approximately 10 hours per week, one to two times per week. Emissions were estimated using CARB OFFROAD 2021 emissions inventory data for pleasure craft, vessels with outboard engines, and a maximum daily operation of 5 hours per day. Additional modeling details and assumptions are provided in Appendix A.

Impact Analysis

Would the project:

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

Construction and Operation

Less-than-Significant Impact. Air quality plans describe the air pollution control strategies to be implemented by a city, county, or regional air district. As previously discussed, the AQMP is the applicable air quality plan in the SCAB. The AQMP is a regional and multi-agency effort including the SCAQMD, the CARB, the Southern California Association of Governments (SCAG), and the USEPA.

Consistency with the AQMP is determined through evaluation of whether the Project would exceed the estimated emissions used as the basis of the AQMP, which are based, in part, on population projections developed by the SCAG. The SCAG forecasts are based on local general plans and other related documents, such as housing elements, which are used to develop population projections and traffic projections.

Construction of the proposed Project would involve the use of off-road equipment, haul trucks, and worker commute trips. Assumptions for off-road equipment emissions in air quality plans are developed based on hours of activity and equipment population reported to CARB for rule compliance. The use of construction equipment in the AQMP is estimated for the region on an annual basis, and construction-related emissions are estimated as an aggregate in the AQMP. Since Project construction is limited to short-term activities and construction activities would not involve unusual characteristics that would necessitate the use of extensive off-road equipment usage, the proposed Project would not increase the assumptions for off-road equipment use in the AQMP. Implementation of the proposed Project would also not result in increased population or traffic in the region that would conflict with the planning documents used to inform the 2022 AQMP.

Furthermore, the proposed Project would result in emissions that would be below the SCAQMD regional and localized thresholds during construction and operation (as shown below in Section III [b]). The thresholds were developed to assist the region in attaining the applicable state and federal ambient air quality standards; therefore, the proposed Project would not result in an increase in the frequency or severity of existing air quality violations and would not have the potential to cause or affect a violation of the NAAQS or CAAQS. Furthermore, as described in more detail in Chapter 2, best management practices, including implementation of SCAQMD Rule 403 dust control measures, would be employed during construction. As such, the proposed Project would also comply with the applicable SCAQMD rules and regulations, which are developed to implement AQMP control measures. Therefore, the proposed Project would not conflict with or obstruct implementation of the applicable air quality plan and this impact would be less than significant.

Mitigation Measures

No potentially significant impacts related to conflict with or obstruction of implementation of an applicable air quality plan would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

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

Construction

Less-than-Significant Impact. By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development within the SCAB, and this regional impact is cumulative rather than being attributable to any one source. A Project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development Projects. The thresholds identified in Tables 3-2 and 3-3 above are designed to identify those Projects that would result in significant levels of air pollution and to assist the region in attaining the applicable state and federal ambient air quality standards. Projects that would not exceed the thresholds of significance would not contribute a considerable amount of criteria

air pollutant emissions to the region's emissions profile and would not impede attainment and maintenance of ambient air quality standards.

Table 3-4 shows the maximum daily emissions associated with construction of the proposed Project compared to the SCAQMD regional thresholds of significance. Additional modeling assumptions and details are provided in Appendix A.

Table 3-4. Maximum Daily Regional Construction Emissions

Description	ROG	CO	NO_X	PM10 [a]	PM2.5 [a]	SO_X
Maximum Daily Emissions (lbs./day)[b]	1.54	54.49	76.03	22.57	7.46	0.39
SCAQMD Regional Thresholds (lbs./day)	75	550	100	150	55	150
Threshold Exceeded?	No	No	No	No	No	No

Source: Prepared by AECOM in 2024. See Appendix A for additional details.
[a] PM_{10} and $PM_{2.5}$ emissions consider implementation of fugitive dust best management practices, including watering exposed areas at least three times per day in compliance with SCAQMD Rule 403.
[b] Per the Project's design features, the emission estimates assumed use of Tier 4 interim equipment for engines larger than 25 horsepower.
lbs./day = pounds per day; ROG = reactive organic gases; CO = carbon monoxide; NO_X = nitrogen oxides; PM_{10} = particulate matter less than 10 micrometers in size; PM2.5 = particulate matter less than 2.5 micrometers in size; SO_X = sulfur oxides; SCAQMD = South Coast Air Quality Management District

As shown in Table 3-4, regional criteria pollutant emissions during construction would not exceed SCAQMD regional significance thresholds.

Project construction would also emit localized pollutants through the on-site use of heavy-duty construction equipment as well as fugitive dust from site disturbance activities. These localized emissions could expose nearby sensitive receptors to substantial pollutant concentrations. Table 3-5 shows the on-site maximum daily emissions associated with construction of the proposed Project compared to the SCAQMD LSTs.

Table 3-5. Maximum Daily Localized Construction Emissions

Description	CO	NO_X	PM_{10}[a]	$PM_{2.5}$[a]
Maximum Daily On-Site Emissions (lbs./day)[b]	35.75	21.31	4.48	2.40
SCAQMD Localized Thresholds (lbs./day)[c]	1,733	203	14	8
Threshold Exceeded?	No	No	No	No

Source: Prepared by AECOM in 2024. See Appendix A for additional details.
[a] PM_{10} and $PM_{2.5}$ emissions consider implementation of fugitive dust best management practices, including watering exposed areas at least three times per day in compliance with SCAQMD Rule 403.
[b] Per the Project's design features, the emission estimates assumed use of Tier 4 interim equipment for engines larger than 25 horsepower.
[c] Per SCAQMD Source Receptor Area 9, 5-acre site, and a 25-meter receptor distance.
CO = carbon monoxide; NO_X = nitrogen oxides; PM_{10} = particulate matter less than 10 micrometers in size; $PM_{2.5}$ = particulate matter less than 2.5 micrometers in size; SCAQMD = South Coast Air Quality Management District

As shown in Tables 3-4 and 3-5, the peak daily construction emissions would not exceed the SCAQMD regional thresholds or LSTs. Therefore, construction of the proposed Project would not 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. This impact would be less than significant.

Operation

Less than Significant Impact. As described previously, operation of the proposed Project would be limited to minimal maintenance activities associated with the weekly water patrols and new staff traveling to the Project site each day. Table 3-6 presents the total maximum daily and on-site emissions associated with operation of the proposed Project.

Table 3-6. Maximum Daily Regional and Localized Operational Emissions

Description	ROG	CO	NO_X	PM_{10}	$PM_{2.5}$	SO_X
Maximum Daily Emissions (lbs./day)	3.05	11.81	0.30	0.20	0.13	<0.01
SCAQMD Regional Thresholds	75	550	100	150	55	150
Threshold Exceeded?	No	No	No	No	No	No
Maximum Daily On-Site Emissions (lbs./day)	3.04	11.66	0.29	0.16	0.12	-
SCAQMD Localized Thresholds[a]	N/A	1,733	203	4	2	N/A
Threshold Exceeded?	N/A	No	No	No	No	N/A

Source: Prepared by AECOM in 2024. See Appendix A for additional details.
[a] Per SCAQMD Source Receptor Area 9, 5-acre site, and a 25-meter receptor distance.
lbs./day = pounds per day; ROG = reactive organic gases; CO = carbon monoxide; NO_X = nitrogen oxides; PM_{10} = particulate matter less than 10 micrometers in size; PM2.5 = particulate matter less than 2.5 micrometers in size; SO_X = sulfur oxides; SCAQMD = South Coast Air Quality Management District

As shown in Table 3-6, maximum daily regional and localized operational emissions would not exceed the SCAQMD thresholds of significance. Therefore, operation of the proposed Project would not 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. This impact would be less than significant.

Mitigation Measures

No potentially significant impacts related to a cumulatively considerable net increase of a criteria pollutant would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

c. Expose sensitive receptors to substantial pollutant concentrations?

Construction

Less-than-Significant Impact. Some members of the population are especially sensitive to air pollutant emissions and should be given special consideration when evaluating air quality impacts from Projects. For the purposes of a CEQA analysis, the SCAQMD considers a sensitive receptor to be a receptor such as a residence, hospital, or convalescent facility where it is possible that an individual could remain for 24 hours (SCAQMD 2008). Sensitive receptors also include facilities that house or attract children, the

elderly, and people with illnesses or others who are especially sensitive to the effects of air pollutants. As described above, the nearest sensitive receptors include residences approximately 45 meters away from the northern edges of the Project construction limits surrounding Baldwin Lake and Tule Pond. Additional residences are also located to the west and southwest of the Arboretum boundary.

As shown in Tables 3-4 and 3-5, construction activities would result in emissions of criteria air pollutants, but at levels that would not exceed the SCAQMD regional or localized thresholds of significance. The regional thresholds of significance were designed to identify those Projects that would result in significant levels of air pollution and to assist the region in attaining the applicable state and federal ambient air quality standards, which were established using health-based criteria to protect the public with a margin of safety from adverse health impacts due to exposure to air pollution. In addition, the LSTs represent the maximum emissions from a Project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standards and are developed based on the ambient concentrations of that pollutant for each source receptor area. As such, the criteria air pollutant emissions associated with the proposed Project would not expose sensitive receptors to substantial criteria pollutant concentrations.

The greatest potential for TAC emissions during construction of the proposed Project would be related to diesel particulate matter (diesel PM) emissions associated with heavy-duty equipment and haul truck usage. The Office of Environmental Health Hazard Assessment (OEHHA) developed a Guidance Manual for Preparation of Health Risk Assessments (OEHHA 2015). According to OEHHA methodology, health effects from carcinogenic TACs are usually described in terms of individual cancer risk, which is based on a 30-year lifetime exposure to TACs. Construction activities would be temporary and last approximately 16 months, or 4 percent of the total exposure period used for typical health risk calculations (i.e., 30 years). In addition, as described in Chapter 2, Project Description, construction equipment would be equipped with Tier 4 engines; Tier 4 engines reduce PM emissions by 80 percent compared to Tier 2-rated engines.

As shown in Tables 3-4 and 3-5, construction related $PM_{2.5}$ exhaust, a proxy for diesel PM emissions, would be substantially below the thresholds of significance. In addition, construction activities would span across the entire 5-acre Project site. For example, although the nearest sensitive receptors are the surrounding residences located 45 meters away, as construction activity occurs across the Project site, construction-related emissions would occur at distances as far as 300 meters from the nearest receptors. Concentrations of mobile-source diesel PM emissions are typically reduced by approximately 60 percent at a distance of 300 feet (100 meters) (Zhu et al. 2002). Therefore, trucks and off-road equipment would not operate in the immediate vicinity of any sensitive receptor for an extended period of time and the potential exposure to TAC emission concentrations would be limited.

Given the construction schedule, the surrounding vegetation providing a buffer between the Project limits and the nearest sensitive receptors, and the highly dispersive nature of diesel PM emissions, construction of the proposed Project would not expose sensitive receptors to substantial TAC concentrations that could cause short- or long-term health effects. In addition, TAC emission exposure would also be reduced with implementation of CARB regulations, such as the Airborne Toxic Control Measure, which limits idling of diesel-fueled commercial motor vehicles. Therefore, construction of the proposed Project would not expose sensitive receptors to substantial pollutant concentrations and this impact would be less than significant.

Mitigation Measures

No potentially significant impacts related to exposing sensitive receptors to substantial pollutant concentrations would occur as a result of construction of the proposed Project. Therefore, no mitigation measures are required.

Operation

As discussed previously, following construction, operation and maintenance of the proposed Project is anticipated to be limited to staff vehicle trips and weekly water patrols. Certain land uses are more likely than others to generate substantial TAC emissions due to allowable activities within those land use designations. Operation of the proposed Project would involve recreational land uses that would not be a substantial source of toxic air contaminant and/or $PM_{2.5}$ emissions. Additionally, any increase in vehicle trips by staff to the Project site would primarily be light-duty, gasoline-fueled vehicles, which are not substantial sources of toxic air contaminant emissions (e.g., diesel PM) that are primarily associated with diesel-fueled vehicles. The pontoon boat that is anticipated to be used for the weekly water patrols is also gasoline-fueled and usage is anticipated to be limited to ten hours per week. As such, implementation of the proposed Project would not expose sensitive receptors to substantial pollutant concentrations. This impact would be less than significant.

Mitigation Measures

No potentially significant impacts related to exposing sensitive receptors to substantial pollutant concentrations would occur as a result of operation of the proposed Project. Therefore, no mitigation measures are required.

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

Construction

Less than Significant Impact. The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose individuals to objectionable odors are deemed to have a significant impact. Typical facilities that generate odors include wastewater treatment facilities, sanitary landfills, composting facilities, petroleum refineries, chemical manufacturing plants, and food processing facilities.

During construction of the proposed Project, construction equipment exhaust may temporarily generate odors. However, construction equipment-related odors would be typical of most construction sites and would not occur as a constant plume or source for the entire duration of construction (i.e., odors would vary by construction equipment and also as moves across the Project site). Additionally, contaminated soil and groundwater, such as oil and groundwater contaminated with Volatile Organic Compounds (VOCs) has the potential to result in temporary odors during soil disturbing activities (excavation and transport. However, as described in Section IX, Hazards and Hazardous Materials, excavation and disposal of contaminated ground water and contaminated soils would be conducted to the satisfaction of the applicable regulatory agencies (California Department of Toxic Substances Control, Regional Water Quality Control Board, and SCAQMND) which would limit potential odors from affecting the surrounding receptors. For example, fugitive dust control practices set forth by SCAQMND Rule 403 would prevent

the generation of dust plumes (and the associated odors) as well as require that all trucks hauling soil and other loos materials be covered. Therefore, odors related to contaminated soil/groundwater disturbance would be minimal. Emissions, such as those resulting in odors, would be confined to the immediate vicinity of the construction equipment and excavation activities. Therefore, construction of the proposed Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people and impacts during construction would be less than significant. No mitigation is required.

Operation

Less than Significant Impact. According to CARB and SCAQMD, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding (SCAQMD 1993, CARB 2005). Recreational land uses such as the proposed Project are not typical odor-generating facilities, and any odors would be similar to existing conditions. Therefore, operation of the proposed Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. This impact would be less than significant. No mitigation is required.

Mitigation Measures

No potentially significant impacts related to other emissions, such as those leading to odors, would occur.

Cumulative Impacts

This section describes the potential cumulative air quality impacts resulting from the proposed Project in conjunction with past, present, and future Projects. The geographic scope for the cumulative analysis of air quality impacts is considered to be the Basin. It is appropriate to consider the entire air basin because air emissions can travel substantial distances and are not confined by jurisdictional boundaries nor the immediate surrounding area (i.e., 0.5-mile radius selected for the cumulative analysis); rather, they are influenced by large-scale climatic and topographical features. Although some air quality emissions can be localized, such as toxic air contaminant impacts or odor, the overall consideration of cumulative air quality is typically more regional. By its very nature, air pollution is largely a cumulative impact.

A Project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development Projects. The SCAQMD significance thresholds were developed, in part, based on the provisions of the federal Clean Air Act (SCAQMD 1993). Therefore, the thresholds of significance are relevant to whether a Project's individual emissions would result in a cumulatively considerable incremental contribution to the existing cumulative air quality conditions.

Furthermore, the SCAQMD LSTs represent the maximum emissions from a Project that would not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard and were developed based on the ambient concentrations of that pollutant for each source receptor area (SCAQMD 2008). Because the Project would not exceed the regional thresholds of significance and the LSTs for construction or operation and the Project would not conflict with implementation of the AQMP, the incremental effects of the proposed Project would not be cumulatively considerable.

Related to cumulative analysis for localized effects of the exposure of sensitive receptors to substantial pollutant concentrations and the other emissions, such as those leading to odors, the geographic context for the cumulative analysis would be the immediate vicinity of the Project site. The temporal context would include those probable future Projects that have the potential to emit pollutants or other emissions that could result in exposure of the same sensitive receptors as the proposed Project during the same time period. As described in Chapter 2, Project Description, no other related Projects would occur within a 0.5-mile radius of the proposed Project site. Therefore, the incremental effects of the proposed Project related to the exposure of sensitive receptors or other emissions, such as those leading to odors, would not be cumulatively considerable.

IV. Biological Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game 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, or regulations, or by the California Department of Fish and Game 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 information for this analysis is based upon the Biological Resources Memorandum Report[26] prepared for the Project, in compliance with CEQA PRC Sections 21000 et seq., and the State CEQA Guidelines, CCR Sections, Title 14 Section 15000 et seq.

The Biological Resources Memorandum Report, available in Appendix B, summarizes the results of the database and literature search (i.e., the desktop analysis) and subsequent field survey (conducted July 11, 2023) undertaken by AECOM to document the existing biological conditions at the Project site, evaluate the presence and potential for special-status species, and sensitive habitats to occur at and in the vicinity of the Project footprint, and evaluate the need for any Best Management Practices (BMPs) or

[26] AECOM. 2023. *Baldwin Lake and Tule Pond Restoration Project – Biological Resources Memorandum Report.*

mitigation measures to minimize and/or avoid potential impacts to potentially present biological resources.

Environmental Setting

To analyze the potential biological impacts of the Project, the desktop analysis and field survey were conducted within the Project footprint (i.e., areas of the Project demarcated for construction) and a surrounding 500-foot survey buffer, referred to as the Biological Survey Area (BSA).

The majority of the BSA occurs within the Arboretum, which is surrounded by a heavily urbanized area in the City of Arcadia. The Arboretum is considered a botanical garden consistent with the standard definition of an ornamental vegetation community according to *A Manual of California Vegetation, 2nd Edition.*[27] The Arboretum is regularly maintained, heavily landscaped, and frequented by the public.

Impact Analysis

Would the project:

a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

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

Construction

Less-than-Significant Impact with Mitigation Incorporated. A significant impact could occur if the proposed Project removed or modified the habitat for or otherwise directly or indirectly affected any species identified or designated as a candidate, sensitive, or special status species by the USFWS, CDFW, in local or regional plans, policies or regulations; or if the proposed Project adversely affected any sensitive natural community or riparian habitat.

The entirety of the BSA is within an operating Arboretum, and suitable habitat in the standard sense (i.e., native vegetation and resources depended on by wildlife) is generally absent from the entire BSA. However, the ornamental landscaping at the Lake and Pond provide nesting substrate, shelter and forage and have the potential to support various species that are habituated and adapted to surviving in urban environments. Numerous wildlife species were observed within the BSA during the field survey, including birds, reptiles, amphibians, invertebrates, and mammals. These species are shown on Table 1 of the Biological Resources Memorandum Report provided as Appendix B of this document.

[27] Sawyer, J.O., T. Keeler-Wolf, and J. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society. Sacramento, California.

Special-status wildlife species include those listed by USFWS under the Federal Endangered Species Act (FESA)[28], those listed by the CDFW under the California Endangered Species Act (CESA)[29] as either Threatened, Endangered, or as Candidates for listing. Special-status species also include those with federal protections under the Bald Eagle Protection Act (e.g., bald eagle, golden eagle), the MBTA, and state protection under CEQA Section 15380(d).

All birds, except European starlings, English house sparrows, rock doves (pigeons), and non-migratory game birds such as quail, pheasant, and grouse, are protected under the MBTA. However, non-migratory game birds are protected under the CFGC Section 3503. Many other species are considered by CDFW to be California species of special concern (SSC) and others are on a CDFW Watch List. The California Natural Diversity Data Base (CNDDB) tracks species within California for which there is conservation concern, including species that are not formally listed, have no official legal status, but may receive special consideration during the environmental review process. Further, CFGC Sections 3503, 3505, and 3800 prohibit the take, destruction, or possession of any bird, nest, or egg of any bird except European starlings, and English house sparrows unless authorized by CDFW.

Bat species designated by the Western Bat Working Group (WBWG) as medium or high conservation priority may be considered special-status species. While these species do not have legal status or formal protection, they may receive special consideration during the environmental review process.

The database search identified 49-special status wildlife species that have been historically recorded around the Project area. The field survey evaluated habitat within the BSA for each species identified in the database search and 9 special-status species were determined to have potential to occur within the BSA due to suitable, available habitat. These species are presented in Table 2 of the Biological Resources Memorandum available in Appendix B. No USFWS-designated Critical Habitat for any special-status wildlife species coincides with the BSA.

During the field survey, one special-status species was observed, a monarch butterfly (*Danaus plexippus*). The specific monarch butterfly overwintering and roosting grounds in Southern California do not overlap with the BSA, and the individual observed was assumed to be migrating. However, potential nectar sources were identified within the BSA during the field survey; therefore, there is the potential that this species could utilized the BSA as foraging habitat when seeking nectar sources.

The field survey also identified potentially suitable habitat present in the BSA for Crotch bumble bee (*Bombus crotchii*). The CNDDB notes a 2020 occurrence of this species at the Lake, which coincides with the BSA. The Crotch bumble bee typically inhabits open grassland and scrub, and utilizes abandoned rodent burrows/holes for nests, none of which were observed in the BSA. However, the species is a generalist forager that will visit a wide variety of flowering plants for nectar sources and could utilize the BSA when seeking nectar.

Several unidentifiable turtles resembling Southwestern pond turtles were observed basking at the Lake during the field survey. However, due to the distance of the observation, an identification could not be made with 100 percent certainty. The aquatic habitat and water conditions representative of the both

[28] Species listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (Title 50 Code of Federal Regulations [CFR] 17.12 [listed plants], Title 50 CFR 17.11 [listed animals] and includes notices in the Federal Register for proposed species).

[29] Species listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (Title 14 California Code of Regulations 670.5).

the Lake and Pond could provide suitable habitat for the Southwestern pond turtle, and the Two-striped garter snake; however, both species are rare in urban settings, and therefore determined to have a low potential to occur in the BSA.

Special-status plant species include those listed as Endangered, Threatened, Rare, or those species proposed for listing by USFWS under FESA, those listed by CDFW under CESA. The database search identified over 50 special-status plant species to have historically been recorded in the surrounding area. During the field survey, the habitat within the BSA was evaluated for each of the species identified in the database search. As a result, only two special-status plant species were determined to have potential to occur within the BSA; southern California black walnut (*Juglans californica*) and Engelmann oak (*Quercus engelmannii).* The southern California black walnut was directly observed within the BSA during the field survey near the Pond. Special-status plant species detected within the BSA are not considered to be naturally occurring and are instead components of the actively managed botanical gardens within the Arboretum. No USFWS-designated Critical Habitat for any special-status species coincides with the BSA.

Biological resources may be directly or indirectly, and permanently or temporarily impacted by the Project. Direct impacts include any alteration, physical disturbance, or destruction of biological resources such as clearing vegetation, loss of individual species and/or their habitats, and encroaching into wetlands or a stream. Indirect impacts include elevated noise and dust levels, soil compaction, increased human activity, decreased water quality, and introduction of invasive wildlife and plants.

As discussed, no native or sensitive vegetation communities, and no federal or state-listed plant species were identified within the BSA during the field survey. A CDFW species of special concern, the southern California black walnut, was identified within the BSA; however, it is presumed this individual is not a natural occurrence.

As discussed, a monarch butterfly (federal candidate for listing) was directly observed within the BSA, but this individual was inferred to be migrating as monarch butterfly wintering and roosting grounds are well documented and do not overlap with the BSA. Additionally, Crotch bumble bee (state candidate endangered) has a high potential to occur based on the presence of suitable foraging habitat and a 2020 CNDDB detection that overlaps with the BSA. However, species occurrence is associated with foraging potential only as suitable nesting opportunities were not identified within the BSA.

The remaining seven special-status wildlife species were determined to have a low, or in one case moderate, potential to occur based on the lack of both historic occurrences and conventionally suitable habitat. Several special-status bird species have a low potential to occur within the BSA including yellow-breasted chat, yellow warbler, and least Bell's vireo. Each species could incidentally occur within or fly across the BSA during migratory or dispersal events; however, nesting of these species is not anticipated given the lack of riparian habitat that each depends on. Additionally, several special-status bat species have low (and in one case moderate) potential to occur including western yellow bat, hoary bat, and western red bat. The existing trees within the BSA, including the numerous ungroomed, mature palm trees, may provide potentially suitable roosting habitat for individual or small groups. Two special-status aquatic species including the two-striped garter snake and southwestern pond turtle were also determined to have a low potential to occur. Direct impacts resulting from removal of sediment within both the Lake and Pond would temporarily interfere with water quality, water levels, substrate and vegetation along the bottom of each, and basking sites; all of which would have a significant impact on special-status aquatic species. The removal of vegetation during construction could result in direct

impacts to each of these seven special-status species due to a loss of foraging, sheltering, roosting, or potential breeding habitat. Indirect impacts could occur as a result of noise, vibration, dust, and increased human presence.

Implementation of MM BIO-1 through BIO-6 would reduce potentially significant impacts during construction 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, to less than significant.

Operation

Less-than-Significant Impact. Significant impacts to biological resources during operations and routine maintenance of the Project are not anticipated. This is due to the Project's location within the Arboretum, and the frequent and regularly occurring maintenance activity that has been historically conducted throughout the facility. Post construction operations will be implemented at a comparable level to existing conditions and any biological resources present are therefore assimilated to such disturbances. Impacts would be less than significant. No mitigation is required.

Mitigation Measures

MM BIO-1. Project construction activities (including removal of sedimentation from both the Lake and Pond) should avoid, if possible, the nesting bird season (defined as February 1 through September 1). If the nesting bird season cannot be avoided, the following measures shall be employed to avoid and minimize impacts to special-status birds and nesting birds protected under the MBTA and CFGC:

1. A pre-construction nesting bird survey shall be conducted by a qualified, County approved biologist with the necessary skills to identify birds and nesting bird behaviors, within 3 days prior to the start of construction activities (specifically related to ground disturbance and the dewatering or removal of sedimentation of the Lake and Pond) to determine whether active nests are present within or directly adjacent to the construction zone of the Project footprint.

    a. In the event an active nest is detected, a qualified biologist shall record the location of the nest and establish a 300-foot radius avoidance buffer for passerines and a 500-foot radius avoidance buffer for raptors.

    b. In the event an active nest is found within wetland vegetation associated with either the Lake or Pond, any dewatering or sediment removal activities will be postponed until a qualified biologist has confirmed the nest is inactive. Demarcation of nest avoidance buffer zones 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, etc.) and observed avian response to ambient conditions (e.g., existing traffic noise and human activity). The nest avoidance buffers will be clearly delineated with flagging or fencing,

    c. The qualified biologist shall monitor the status of all active nests, at least once per week. If signs of disturbance or stress are observed, the qualified biologist shall modify the buffer size between the nest and construction activity, as appropriate to minimize impacts. The qualified biologist shall monitor each active nest until it is determined that nestlings have fledged and dispersed, or the nest is no longer active.

d. Should an active nest of any federal or state-listed bird species be detected at any time, construction activity within 300-feet of the nest shall not commence or shall cease if already underway, and the applicable federal and/or state agency (USFWS and/or CDFW) shall be notified. Work in other areas of the Project site may continue as determined appropriate by the qualified biologist.

MM BIO-2.

1. A Southwestern Turtle Management and Relocation Plan will be prepared by County-approved qualified biologist prior to the commencement of the Project and will provide the following information:

    a. Relocation methodology and procedures;

    b. How to proceed, and provisions to follow, in the event an individual is encountered during construction;

    c. Requirements for exclusionary fencing around the Project footprint;

    d. Daily visual inspection requirements (including morning pre-construction sweeps of all active work areas and as-needed inspections under parked/stages vehicles and equipment tires prior to moving.

Construction will follow the methods and procedures to properly relocate turtles prior to construction to ensure impacts are less than significant.

MM BIO-3: A qualified biologist (i.e., a biologist familiar with the special-status species determined to have the potential to occur) will be present during all clearing and grubbing activities that result in the initial removal of upland or wetland vegetation that could serve as habitat i.e., shelter, cover, etc.) for special-status species. The qualified biologist will conduct a preconstruction sweep of the area identified for clearing and grubbing immediately prior to equipment mobilization to confirm there are no special-status species present. If any special-status species are detected within the Project footprint, the qualified biologist will flush the individual(s) out of harm's way. The qualified biologist shall remain on-site for the duration of the clearing and grubbing and periodically survey the site ahead of equipment to ensure the Project footprint is clear of special-status species. Should any federal or state-listed species be detected construction activity within 300-feet of the observed individual(s) will not commence or will cease if already underway, and the applicable federal and/or state agency (USFWS and/or CDFW) will be notified.

MM BIO-4:

1. All palm trees to be removed as part of the Project will be evaluated by a qualified biologist (i.e., a biologist experienced and familiar with bat ecology) for their potential to support roosting bats, by conducting a one-night pre-construction survey two weeks prior to the start of tree removal.

    a. If the preconstruction survey determines that no special-status bat species or active roosts are present, then trees will be removed within two weeks following the preconstruction survey. If trees are not removed within the two weeks period, then another preconstructions survey will be conducted to determine, once again, whether special-status species are present. Trees shall

be removed within two weeks following the repeat survey. If active special-status bat roosts are present, tree removal shall be avoided during the maternity season (April 15 through August 31).

2. All potential roost trees shall be removed and trimmed in the presence of a qualified biologist. Removal and trimming of trees with potential for roosting will be conducted using a two-step tree trimming process that occurs over 2 consecutive days:

    a. Day 1, Step 1: Under the supervision of a qualified biologist, tree branches and limbs with no cavities will be removed by hand (e.g., using chainsaws). This will create a disturbance (noise and vibration) and physically alter the tree. Bats roosting in the tree will either abandon the roost immediately or, after emergence, will avoid returning to the roost.

    b. Day 2, Step 2: Removal of the remainder of the tree under the supervision of a qualified biologist may occur on the following day.

3. All construction activity in the vicinity of an active roost will be limited to daylight hours.

MM BIO-5: Prior to the initiation of construction, a consulting arborist will review the existing Arboretum tree inventory to determine if there are trees present within the Project footprint that have the potential to require protection and/or replacement under PW or DPR Tree policies, or other state, federal, and/or local laws and policies, as applicable, to ensure impacts to protected trees are less than significant.

MM BIO-6: Standard aquatic resource Best Management Practices (BMPs) will be implemented by the Contractor, including:

1 Prior to construction, the Aquatic Resource Specialist will provide an Environmental Tailgate to go over applicable mitigation measures.

2. The Aquatic Resource Specialist shall work with the BMP crew to clearly define any work areas as required by any mitigation measures.

3. The Aquatic Resource Specialist shall be present during all surface water dewatering. The pump intake shall be equipped with exclusionary screens.

c. Have a substantial adverse effect on federally protected wetlands (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.), through direct removal, filling, hydrological interruption, or other means?

Construction & Operation

No Impact. Baldwin Lake and Tule Pond are located within the Arboretum, which is a County-owned park, operated by DPR and the Los Angeles Arboretum Foundation. The Pond serves as a pre-settling basin to Baldwin Lake with runoff from the residential areas northwest and west of the Arboretum. The Pond holds water during the rainy season and is dry the rest of the year. While the Lake was previously a naturally occurring spring fed sag pond, in the late 1880s, Baldwin removed sediment, deepened, and lined the Lake, which served as a holding reservoir for ranch irrigation projects. At capacity, the Pond drains into the Lake which subsequently overflows into Arcadia Wash, which is owned and maintained

by the District, and is part of the Rio Hondo watershed and the larger Los Angeles River watershed. The Pond and the Lake are not listed in the LA Region's Basin Plan and thus are not considered navigable waters or waters of the United States. Further, the Pond and the Lake are not federally protected wetlands. Therefore, construction would have no impact on federally protected wetlands.

Mitigation Measures

The Project is not located on federally protected wetlands (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.), and no impacts would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

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

Construction

Less-than-Significant with Mitigation Incorporated. In an urban context, a wildlife migration corridor can be defined as a linear landscape feature of sufficient width and buffer to allow animal movement between two comparatively undisturbed habitat fragments, or between a habitat fragment and some vital resources that encourages population growth and diversity. Habitat fragments are isolated patches of habitat separated by otherwise foreign or inhospitable areas, such urban tracts or highways. Two types of wildlife migration corridors seen in urban settings are regional corridors, defined as those linking two or more large areas of natural open space, and local corridors, defined as those allowing resident wildlife to access critical resources (food, cover, and water) in a smaller area that might otherwise be isolated by urban development. The Biological Resources Memorandum Report did not identify the BSA as a regional wildlife corridor.

As previously discussed, the biological site visit observed an individual federal and state special status monarch butterfly within the BSA which was inferred to be migrating as the overwintering and roosting grounds in Southern California are well documented and do not overlap with the BSA.

The Project is located within the Arboretum, surrounded by an urbanized area and as such does not occur within or intersect a recognized/established regional wildlife corridor or wildlife nursery. The ornamental trees and shrubs of the Arboretum provide opportunities for cover, foraging, and nesting to localized bird populations. As discussed in Chapter 2, Project Description, the Arboretum, is located within the Pacific Flyway, one of four major North American migration routes for birds and waterfowl, that extends from Alaska and Canada through California to Mexico. As these species travel the flyway on their annual north-south migration, they stopover at water bodies with suitable habitat and food supplies. As discussed in Chapter 2, the Lake has historically been used as a stop by migrating birds and waterfowl, but sightings of these species have diminished significantly over the years primarily due to low water levels, and poor water quality in the Lake and Pond, and reduced suitable habitat for foraging and cover. While the Lake and Pond have been utilized less by migratory bird species in recent years, the potential exists for migratory bird species to be present during construction activities. The MBTA includes all birds, except European starlings, English house sparrows, rock doves (pigeons) and non-migratory game birds (e.g., quail, pheasant, and grouse); further, non-migratory game birds are protected under the CFGC. Therefore, implementation of MM BIO-1 and MM BIO-3, would reduce a potentially substantial adverse effect on nesting birds, and special-status wildlife to a less than significant level.

Operation

No Impact. No impacts related to the movement of resident or migratory fish or wildlife species would occur under operation of the proposed Project. Upon completion, water levels, and water quality of the Lake and Pond will be improved, providing a healthy, robust ecosystem for existing species and will increase migratory bird sightings. Therefore, operation of the Project would provide a net benefit to the Arboretum related to biological resources. No mitigation measures are required.

Mitigation Measures

MM BIO-1: Project construction activities (including removal of sedimentation from both the Lake and Pond) should avoid, if possible, the nesting bird season (which is defined as February 1 through September 1). If the nesting bird season cannot be avoided, the following measures shall be employed to avoid and/or minimize impacts to special-status birds and nesting birds protected under the MBTA and CFGC:

1. A pre-construction nesting bird survey shall be conducted by a qualified, County-approved biologist with the necessary skills to identify birds and nesting bird behaviors, within 3 days prior to the start of construction activities (specifically related to ground disturbance and the dewatering or removal of sedimentation of the Lake and Pond) to determine whether active nests are present within or directly adjacent to the construction zone of the Project footprint.

    a. In the event an active nest is detected, a qualified biologist shall record the location of the nest and establish a 300-foot radius avoidance buffer for passerines and a 500-foot radius avoidance buffer for raptors.

    b. In the event an active nest is found within wetland vegetation associated with either the Lake or the Pond, any dewatering or sediment removal activities will be postponed until a qualified biologist has confirmed the nest is inactive. Demarcation of nest avoidance buffer zones 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, etc.) and observed avian response to ambient conditions (e.g., existing traffic noise and human activity). The nest avoidance buffers will be clearly delineated with flagging or fencing,

    c. The qualified biologist shall monitor the status of all active nests, at least once per week. If signs of disturbance or stress are observed, the qualified biologist shall modify the buffer size between the nest and construction activity, as appropriate to minimize impacts. The qualified biologist shall monitor each active nest until it is determined that nestlings have fledged and dispersed, or the nest is no longer active.

MM BIO-3: A qualified biologist (i.e., a biologist familiar with the special-status species determined to have the potential to occur) will be present during all clearing and grubbing activities that result in the initial removal of upland or wetland vegetation that could serve as habitat (i.e., shelter, cover, etc.) for special-status species. The qualified biologist shall conduct a preconstruction sweep of the area identified for clearing and grubbing immediately prior to equipment mobilization to confirm there are no special-status species present. If any special-status species are detected within the Project footprint, the qualified biologist will flush the individual(s) out of harm's way. The qualified biologist shall remain on-site for the duration of the clearing and grubbing and periodically survey the site ahead of equipment to ensure the Project footprint is clear of special-status species. Should any federal or state-listed species be detected construction activity within 300-feet of the observed individual(s) shall not commence or

shall cease if already underway, and the applicable federal and/or state agency (USFWS and/or CDFW) shall be notified.

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

Construction

Less-than-Significant with Mitigation Incorporated. Numerous trees occur within the BSA. The trees along the shoreline of the Lake and Pond include mostly non-native trees that would be protected by the guidelines of the County of Los Angeles DPR Urban Forestry Program Manual[30]. Native trees such as coast live oak (*Quercus agrifolia)* would be protected under the Los Angeles County Oak Tree Ordinance. As previously described, a southern California black walnut tree was observed within the BSA. While this black walnut tree is not included on the Los Angeles County Oak Tree Ordinance should removal of protected trees be required by the Project, Tree Removal Permits would be obtained in accordance with the referenced ordinances. Further, as noted in the County of Los Angeles DPR Urban Forestry Program Manual, the County operates with "no net loss" of trees in County parks. Implementation of MM BIO-5, which requires preparation and approval of tree preservation plan and consultation with a certified arborist, will ensure consistency with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, would be less than significant.

Operation

No Impact. No impacts would occur under operation of the proposed Project, and no mitigation measures for operation would be required.

Mitigation Measures

MM BIO-5: Prior to the initiation of construction, an arborist approved by PW shall review the existing Arboretum tree inventory to determine if there are trees present within the Project footprint that have the potential to require protection and/or replacement under PW or DPR Tree policies, or other state, federal, and/or local laws and policies, as applicable, to ensure impacts to protected trees are less than significant.

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?

Construction and Operation

No Impact. This 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. As confirmed in the literature search, there are no approved conservation plans for the area encompassing the Project site. Therefore, there are no construction or operational impacts. No mitigation is required.

[30] County of Los Angeles Department of Parks and Recreation. 2011. *Urban Forestry Manual.* Available at: https://file.lacounty.gov/SDSInter/dpr/184720_UFPMANUAL080211.pdf. Accessed October 22, 2024.

Mitigation Measures

No potentially significant impacts related to the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan would occur.

Cumulative Impacts

There are no related projects within a 0.5-mile radius, as identified in Chapter 2, Project Description. The Project area lacks suitable habitat for special-status plant and wildlife species, sensitive habitats (including riparian habitat), fish habitat, protected trees, and potential jurisdictional drainages. Furthermore, the Project would not conflict with local ordinances. Because each of the related projects within a 0.5-mile radius would occur within the same urban context as the proposed Project and would not result in the loss of suitable habitat, impacts of the related projects would not be substantial. Therefore, the incremental effect of the proposed Project related to special-status plant and wildlife species, sensitive habitats (including riparian habitat), fish habitat, protected trees, and potential jurisdictional drainages would not be cumulatively considerable.

With respect to nesting birds, the proposed Project would be subject to the MBTA and the California Fish and Game Code and be required to avoid potential impacts on nesting birds. Therefore, the incremental effect of the proposed Project would not be cumulatively considerable.

V. Cultural Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in Section Section15064.5?	☐	☒	☐	☐
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c. Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

Environmental Setting

The information in this section is based on the Cultural Resources Assessment prepared for the Project and provided as Appendix C of this document. The Cultural Resources Assessment was conducted in compliance with CEQA PRC Section §1000 et seq., and the State CEQA Guidelines, CCR Sections, Title 14 Section15000 et seq., and builds upon a 2014 cultural resources study completed by the Historic Resources Group, LLC.

Historic Resources

The Cultural Resources Assessment was based on archival research and an intensive-level cultural resources survey. A records search was conducted at the SCCIC on July 25, 2023, to identify previously conducted cultural resource investigations and previously recorded cultural resources in the Project area and 0.25-mile buffer. Archival research also included review of listings in the Built Environment Resource Directory (BERD, local historical resource inventories, the National Register of Historic Places (NRHP) database, the California Register of Historic Resources (CRHR), the California Historical Landmarks Register, and the California State Points of Historical Interest list. An intensive-level cultural resources survey of the Project area was performed on August 17, 2023, by AECOM Architectural Historian Monica Wilson M.A., who meets the Secretary of the Interior's (SOI) Professional Qualifications in History and Architectural History, and Archaeologist Samantha Lorenz, M.A., RPA, who meets the SOI Professional Qualification Standards in Archaeology. The architectural history component of the study was prepared by Architectural Historians Monica Wilson and Evan Mackall, M.A. The archaeological component of the study was prepared by Samantha Lorenz. The paleontology component was prepared by Joe Stewart, Ph.D. Geographic information system and report mapping support was provided by Alec Stevenson, M.A.

CEQA and California PRC Section 21083.2 is intended to prevent significant avoidable impacts to the environment, including cultural resources, by requiring feasible alternatives or mitigation measures. If cultural resources are identified within the Project area, the Lead Agency must take those resources into consideration when evaluating Project effects. The level of consideration may vary with the importance of the cultural resource. Under CEQA, a cultural resource is considered a "historical resource" if the resource meets the criterial for listing in the California Registers of Historical Resources (CPHR) (PRC

Section 5024.1, Title 14 CCR, Section 4852). The CRHR was designed to be used by state and local agencies, private groups, and citizens to identify existing historical 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 criteria for the CRHR (PRC Section 5024.1, Title 14 CCR, section 4852) focus on resources of statewide, rather than national, significance. To be eligible for listing in the CRHR, a property must be at least 45 years of age and possess significance at the local, state, or national level, under one or more of the following four criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or in the United States;

2. It is associated with the lives of persons important to local, California, or national history;

3. It embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possess high artistic values; and/or

4. It has yielded, or has the potential to yield, information important in the prehistory or history of the local area, California, or the nation.

Potential historical resources eligible for listing in the CRHR may include buildings, sites, structures, objects, and historic districts. A resource less than 45 years of age may be eligible if it can be demonstrated that sufficient time has passed to understand its historic importance. While the enabling legislation for the CRHR is less rigorous with regard to the issue of integrity, there is the expectation that properties reflect their appearance during their period of significance (PRC Section 4852).

CEQA Guidelines, CCR Title 14 Section 15064.5

The CEQA Guidelines define a "historical resource" as the following:

1. California properties formally determined eligible for, or listed in, the CRHR.

2. Those resources included in a local register of historical resources, as defined in section 5020.1(k) of the PRC, or identified as significant in a historical resources survey meeting the requirements of Section 5024.1(g) of the PRC.

3. Those resources that a lead agency determines to be historically significant provided the determination is based on substantial evidence.

When an initial study identifies the existence of, or the probable likelihood of, Native American human remains within a project, a lead agency will work with the appropriate Native Americans as identified by the Native American Heritage Commission (NAHC). The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains, and any items associated with Native American burials with the appropriate Native Americans as identified by NAHC (14 CCR Section 15064.5(d)).

Records Search

Archival research was conducted to identify known cultural resources in the Project area, provide context for the evaluation of the cultural resources that are 45 years old or older, and inform interpretations regarding the potential to encounter previously unidentified cultural resources in the

course of ground-disturbing work associated with the Project. Archival research included a records search of the Southern Central Coastal Information Center (SCCIC); and a review of the California Office of Historic Preservation's Historic Resources Inventory in the Build Environment Resource Directory (BERD), the California Historical Landmarks Register, California State Points of Historical Interest, local cultural registers, and historic aerial photographs and maps. Supplemental research was also conducted to provide prehistoric and historic context for Project area use.

Previous Cultural Resource Investigations and Resources

Eight previous cultural resources investigations documented at the SCCIC have been conducted within a 0.25-mile radius of the Project area (Appendix C). These investigations include a monitoring report, two survey reports, two archaeological investigations reports, a draft environmental impact report, an NHPA Section 106 review, and City of Arcadia's General Plan. Of the eight previous cultural resources investigations, three overlap with the Project area; one of these includes the Santa Anita Assembly Center which was located at the Santa Anita Racetrack (east of the Arboretum across Baldwin Avenue) in its discussion, it does so only briefly, as the report and archaeological investigations are primarily focused on the Manzanar National Historic Site located over 200 miles north of the Arboretum.

The SCCIC records search identified 42 previously recorded cultural resources mapped within a 0.25-mile radius of the Project area. Of the 42 previously recorded cultural resources, six were identified as eligible for the National Register of Historic Places (NRHP) and CRHR. Two cultural resources are located within the Project area itself (Appendix C).

Field Survey

On August 17, 2023, AECOM architectural historian Monica Wilson performed an intensive-level survey of the Project area. The survey covered all accessible portions of the Project area, which includes the area around the Lake and the Pond. The purpose of the survey was to build upon the 2014 HRG cultural landscape report and treatment plan to identify cultural resources within the Project area that by be impacted by the Project, record cultural resources that are at least 45 years old, and evaluate any discovered resources for historical significance under NRHP and CRHR criteria.

Four previously recorded built environment resources, the Queen Anne Cottage and Coach Barn, the Reid-Baldwin Adobe, and the Los Angeles County Arboretum and Botanic Garden Historic District (LACABGHD) were investigated for the 2023 evaluation; these resources were also evaluated in the 2014 HRG report. The 2014 HRG report recommended that the LACABGHD is eligible for listing under NRHP and CRHR as a historic district for its associations with Rancho Santa Anita, San Gabriel Valley development, its association with Lucky Baldwin; and for its large-scale, institutional, post-World War II landscape architecture and design in Southern California. The 2014 HRG report identified eight distinct zones of the Arboretum be included in the LACABGHD including the Historic Circle, location of the Lake, Queen Anne Cottage, and Hugo Reid Adobe, and West Acres, which is in the area identified on a map of the Arboretum grounds[31] as Meadowbrook where the Pond is located. Three of the LACABGHD's contributing resources were previously evaluated and listed in the NRHP and as California State Historical Landmarks. The Queen Anne Cottage was dedicated as California State Historical Landmark #367 in 1954. The Hugo Reid Adobe was dedicated as California State Historical Landmark #368 in 1961. A 1977 survey and evaluation of the Queen Anne Cottage and Hugo Reid Adobe concluded that the

[31] Los Angeles County Arboretum and Botanic Garden. n.d. *Arboretum Map.* Available at: https://www.arboretum.org/wp-content/uploads/2023/04/Arboretum_Map_Digital-.png

Queen Anne Cottage appeared individually eligible for inclusion in the NRHP, and that the Hugo Reid Adobe needed to be reevaluated for NRHP eligibility. In 1979, the Queen Anne Cottage and Coach Barn were listed on the NRHP for its association with Lucky Baldwin and for its architecture.

The 2023 survey did not identify any new, previously unidentified built environment cultural resources.

Archaeological Resources

As part of the August 17, 2023, Built Environment survey, an intensive-level archaeological survey of the Project area was completed by AECOM archaeologist Samantha Lorenz, M.A., RPA, who meets the SOI Professional Qualification Standards in Archaeology. The survey covered all accessible portions surrounding the Lake and Pond for the purpose of recording archaeological and historical resources and to evaluate any discovered resources for significance under CRHR criteria. Resources evaluated can consist of archeological resources, tribal cultural resources, or built environment resources. Archaeological resources represent past human behavior and include portable artifacts such as stone tools, glass bottles, and tin cans; non-portable "features" such as cooking hearths, foundations, and privies; and residues such as food remains and charcoal. Archaeological remains can be virtually of any age, from recent historic-period materials to prehistoric deposits that are thousands of years old. An archaeological resource can be determined to be a tribal cultural resource or a historic resource following state regulations. Tribal cultural resources are defined as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to California Native American tribes that are listed in or eligible for listing in the CRHR, listed in local historic registers, or determined by a lead agency to be significant resources. Built environment resources include the man-made features that make up the recognizable architectural built environment. This typically includes extant aboveground buildings and structures that date from the earliest territorial settlements until the present day.

All previously recorded cultural resources were historic resources as discussed above under Built Environment. No new archaeological resources were observed during the survey. However, the Native American Heritage Commission () Sacred Lands Files search was positive, and the Project area sits on land known to be associated with a prehistoric Native American village site, Aleupkigna (or place of many waters). Multiple excavations at the Hugo Reid Adobe (P-19-179334) have produced both Euro-American historic artifacts and Native American artifacts. These artifact assemblages have been dated to the latter half of the 19th century and "may also contain the remains of a prehistoric site in a secondary context" (Hearth et al. 2022). Further, in 1991, an Arboretum grounds maintenance staff worker uncovered a cogged stone, later dated by the UCLA Institute of Archaeology as 2,000 to 4,000 years old, while operating a forklift along the western edge of the Lake while it was dry (Snider 1997:108).

Therefore, the potential exists to encounter previously undiscovered archaeological resources during Project-related activities that involve ground disturbance.

Impact Analysis

Would the project:

a. Cause a substantial adverse change in the significance of a historical resource, as defined in Section 15064.5?

Construction

Less-Than-Significant-with-Mitigation. The 2023 Cultural Resources Assessment prepared for this Project did not identify any new, previously unidentified significant historical resources as defined in CEQA Section 15064.5. As with the previously prepared 2014 report, the 2023 evaluation determined that the Queen Anne Cottage, the Hugo Reid Adobe, and the LACABGHD continue to meet eligibility for listing in the NRHP and the CRHR and therefore are historical resources for the purposes of CEQA. As a property that qualifies as a historical resource for the purposes of CEQA that is eligible for listing in the CRHR, any improvements planned for the property should be consistent with the Secretary of the Interior's (SOI) Standards for the Treatment of Historic Properties.

Per the National Park Service (NPS), rehabilitation is defined as the process of returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property that are significant to its historic, architectural, and cultural values. Rehabilitation assumes that at least some repair or alteration of the historic building will be needed to provide for an efficient contemporary use/ however, these repairs and alterations must not damage or destroy materials, features, or finishes that are important in defining the building's historic character. The Standards for Rehabilitation include the following, taking into consideration economic and technical feasibility of repairs to the historic resources:

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archaeological resources affected by a Project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.

9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
10. New additions and adjacent or related new construction shall be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

While compliance with SOI Standards, as described will ensure the Project will have a less than significant impact on the associated eligible resources, the elevated sensitivity of these eligible resources and their contextual historical importance to the Arboretum, the San Gabriel Valley, and the greater Los Angeles area, additional mitigation measures are recommended during construction and operation to further reduce impacts to less than significant levels. MM CR-1 ensures that Project personnel are trained in the work practices necessary to comply with the applicable environmental laws and regulations regarding cultural and historical resources. MM CR–2 will ensure repair measures of the retaining wall are analyzed appropriately and maintain historic integrity. Implementation of MM CR–3 and MM CR-4 will ensure historic integrity of the retaining wall is maintained should the use of substitute materials be required during restoration. Compliance with SOI Standards, and MMs CR1, CR-2, CR–3, and CR-4 will ensure construction related impacts to historic and eligible historic resources are less than significant.

Operation

Less-than-Significant with Mitigation Incorporated. The proposed Project includes removing the existing, deteriorating cobblestone retaining walls and replacing with existing cobblestones incorporated into the proposed retaining walls to retain their historic appearance. Given that the Lake and retaining wall is a noted historical resource any removal, renovation and/or replacement of the retaining wall would result in a significant impact. However, based on the materials and common issues that may arise over time like soil erosion, water damage and material degradation that can compromise the wall's stability, compliance with the SOI Standards will avoid irrevocable damage to the retaining wall. Upon Project completion, regular maintenance of the retaining wall as described in MM CR–4 will ensure its continued historic appearance and structural integrity and reduce operation impacts to less than significant levels.

Mitigation Measures

MM CR–1. Prior to construction, all personnel associated with the Project should receive cultural resource awareness training. Training shall be conducted by an individual(s) that meet Secretary of Interior (SOI) Professional Qualification Standards in architectural history and archaeology. Training would cover work practices for the proper treatment of cultural resources and tribal cultural resources (TCRs) and ensuring compliance with applicable environmental laws and regulations. This training will include how to maintain the confidentiality of resources at in-situ locations; how to identify cultural resources/historic materials (e.g., the types of resources to look for), include recognizing possible buried resources; the significance of the resources that need to be protected during Project implementation; and treatment of historic materials or upon discovery of archaeological materials, including TRCs and Native American human remains. Native American representatives shall be afforded the opportunity to participate in the cultural resource training to provide Project personnel with tribal perspectives on working in areas sensitive for TCRs.

MM CR-2.. When conducting work on the boulder retaining walls, retain as much of the original boulders as possible, including pattern of how stones are laid out.

When conducting work on the walls, activities should retain as much of the original material as possible. When reuse of material is not acceptable for purposes of maintaining structural integrity, new materials should closely match the existing materials to mimic historic characteristics. If subtle variations exist between the historic and new materials, such as color or texture, the substitute materials should be varied so they are not conspicuous by their uniformity. This practice does not apply to the concrete replacement because the entirety of the material is intended to be replaced.

MM CR–3. Any substitute materials proposed for use in the new retaining wall must be harmonious with historic materials. Substitute material should match the details and craftsmanship of the historic materials. However, it is important to note that chemical compositions may differ between historic and substitute materials. Therefore, chemical composition of the substitute material should be evaluated to ensure compatibility with the historic material, and special care should be taken to install and anchor the substitute material to the historic material. If subtle variations exist between the historic and substitute material, such as color or texture, the substitute materials should be varied so they are not conspicuous by their uniformity. The substitute materials, including types of compounds and boulders, used to reconstruct the walls shall be recorded for future reference in order to guarantee proper care and maintenance through the life of the historic resource.

MM CR–4. Inappropriate cleaning and coating treatments are a significant cause of damage to historic masonry structures such as the Lake and Pond cobblestone retaining walls. Any cleaning processes should be carried out under the guidance and supervision of an architectural conservator to avoid irrevocable damage to the historic resource. Additionally, the retaining walls' historic appearance must be considered before work, as well as a determination of the level of cleanliness to be achieved. Prior to developing a cleaning program, it is important to understand the building materials, which include a combination of local cobblestones, basalt and granite boulders, slate and fired red brick, and unreinforced board formed concrete. Before choosing a cleaning method, different cleaners should be tested and their results evaluated. Some chemicals and acidic cleaners may have an adverse effect on construction materials. Other chemicals may also cause etching or the dissolution of the cobblestones, basalt and granite boulders, and slate and fired red brick. Recommended cleaning methods for the retaining walls include water and chemical methods that do not create adverse conditions for the Lake ecosystem. Water methods soften dirt and soiling material and rinse the deposits from the surface. Chemical cleaners react with dirt, soiling material, or paint to affect their removal, followed by the cleaning effluent being rinsed off the surface with water. Alternative methods to abrasive cleaning of the retaining wall include low-pressure water wash, scrubbing with natural bristles, steam cleaning, or chemical cleaning.

b. Cause a substantial adverse change in the significance of an archaeological resource, pursuant to Section15064.5?

Construction

Less-than-Significant Impact with Mitigation Incorporated. Based on the results of archival research and field survey, no new archaeological sites that constitute NRHP-eligible historic properties or CRHR-eligible historical resources were encountered within the Project area. However, the NAHC SLF search was positive and the Project area sits on land known to be associated with a prehistoric Native American Village site, *Aleupkigna* (or place of many waters). Multiple excavations at the Hugo Reid Adobe (P-19-

179334) have produced both Euro-American historic artifacts and Native American artifacts. These artifact assemblages have been dated to the latter half of the 19th century and "may also contain the remains of a prehistoric site in a secondary context". Further, in 1991, an Arboretum grounds maintenance staff worker uncovered a cogged stone, later dated by the UCLA Institute of Archaeology as 2,000 to 4,000 years old, while operating a forklift along the western edge of the Lake while it was dry.

Therefore, the potential exists to encounter previously undiscovered archaeological resources during Project-related activities that involve ground disturbance. Therefore, implementation of Mitigation Measures CR–1, as described above will ensure Project personnel are trained in the appropriate work practices necessary to effectively implement treatment of historic materials and to comply with the applicable environmental laws and regulations, including those related to recognizing possible buried resources and maintaining the confidentiality of resources at in-situ locations, including Native American remains. Without the appropriate mitigation measures, construction of the Project would result in a significant impact to previously unknown archaeological resources. Implementation of MM CR -1 will ensure all Project personnel are trained in the appropriate work practices and applicable environmental laws and regulations in the event that cultural resources, including tribal cultural resources (TCRs) are uncovered during construction.

In addition, MM CR–5, and MM CR-6 will outline Project construction monitoring and discovery protocols, including archaeological and tribal monitoring. Implementation of MM CR–1, MM CR-5, and MM CR-6 during construction will reduce impacts to archeological resources to a less than significant level.

Operation

Less-than-Significant Impact. Upon completion, operation of the Project would require periodic maintenance activities of the filtration equipment. Operation of the Project would also include regular removal of surface debris from the Lake and Pond, and maintenance of surrounding landscape and vegetation, similar to what currently occurs. Although the Project involves new filtration equipment that was not in place previously and that will require periodic maintenance, it is not anticipated that maintenance of this new equipment would result in ground disturbing activities or other activities that would cause a substantial adverse change to any archaeological resources beyond what would be typical of on-going, regular maintenance activities at the Arboretum. Therefore, operation of the Project would result in less than significant impacts to archaeological resources. No mitigation is required.

Mitigation Measures

MM CR–1: Prior to construction, all personnel associated with the Project should receive cultural resource awareness training. Training shall be conducted by an individual(s) that meet Secretary of Interior (SOI) Professional Qualification Standards in architectural history and archaeology. Training would cover work practices for the proper treatment of cultural resources and tribal cultural resources (TCRs) and ensuring compliance with applicable environmental laws and regulations. This training will include how to maintain the confidentiality of resources at in-situ locations; how to identify cultural resources/historic materials (e.g., the types of resources to look for), include recognizing possible buried resources; the significance of the resources that need to be protected during Project implementation; and treatment of historic materials or upon discovery of archaeological materials, including TRCs and Native American human remains. Native American representatives shall be afforded

the opportunity to participate in the cultural resource training to provide Project personnel with tribal perspectives on working in areas sensitive for TCRs.

MM CR-5: A SOI-qualified Archaeologist in prehistoric and historical archaeology (36 CFR Part 61) and Native American monitor from Tribe(s) traditionally or cultural affiliated with the site shall be retained by PW prior to ground-disturbing activities. An archaeological monitor, either meeting or working under the direction of an archaeologist who meets the SOI Professional Qualification Standards in archaeology, shall monitor ground-disturbing activities in areas with potential for archaeological or tribal cultural resources at the Project site to minimize disturbance of subsurface archaeological deposits. The qualified archaeologist and archaeological monitor will have experience working in the Los Angeles basin within ancestral tribal territory.

The archaeological monitoring will include direct observation of ground-disturbing activities and ground disturbance in areas with potential for archaeological or tribal cultural resources, inspection of exposed surfaces for evidence of cultural resources, and recordation of all activities and findings in daily monitoring logs. Daily log information includes a description of the areas monitored, the nature of the actions being monitored, location and description of any cultural resources identified during monitoring, sample photographs of daily activity (except photographs of human remains), records of conversations regarding daily construction and monitoring activity, and if resources are found, recommendations for on-site actions, such as security and treatment recommendations. The archaeological monitor recommending the suspension of work in the event of an unanticipated cultural resources discovery during Project activities.

Responsibilities shall include cultural resources monitoring and recommending the suspension of work in the event of an unanticipated cultural resources discovery during Project activities. Responsibilities of the SOI-qualified archaeologist shall include evaluation of any finds, issuing clearance to recommence Project activities after suspension of work has been recommended to protect potential cultural resources, analysis and curation of materials, and preparation of a monitoring activities results report conforming to the California Office of Historic Preservation Archaeological Resource Management Reports guidelines. The SOI-qualified archaeologist in consultation with the Native American monitor will determine when no further monitoring is required, such as in the event that bedrock or fill material is reached.

MM CR-6: A SOI-qualified archaeologist, or archaeological monitor working under the direction of a SOI-qualified archaeologist and Native American Monitor from Tribe(s) traditionally or cultural affiliated with the Site, will evaluate all inadvertently discovered potential cultural material to determine if it is a unique archaeological resource. If the find is determined to not be a unique archaeological resource, work may proceed without further delay. If the find is determined to be archaeologically important, work will stop within a 50-foot radius until a qualified archaeologist can assess the significance of the find. The qualified archaeologist shall have the authority to modify the no-work radius as appropriate, using professional judgement. The qualified archaeologist will carefully inspect the ground surface around the potential discovery and displaced soil to determine whether the discovery constitutes an isolated find (i.e., fewer than three items) or a site (i.e., a feature or three or more items). If no other artifacts or features are identified within 50 feet of the find, it will be determined to be an isolate (unless human remains are present). Non-unique isolated artifacts, or isolated artifacts that are not a TCR, will be documented, reported, and described in the final monitoring report, but will not constitute a discovery. After recording, non-unique and non-TCR isolates will either be discarded or returned to the ground from which they were recovered prior to the completion of

ground disturbing activities. Ground-disturbing activity will remain on hold until authorization to resume work has been granted by the qualified archaeologist. Work may continue on other parts of the Project while consultation and treatment are conducted.

If significant or potentially significant unanticipated cultural resources are discovered during ground-disturbing activities, such as structural features, unusual amounts of bone or shell, flaked ground stone artifacts, historic-era artifacts, architectural remains, or human remains, the qualified archaeological monitor in consultation with the Native American monitor will suspend ground-disturbing activity immediately within at least 50 feet of the find. If possible human remains are observed, MM CR-7, described below, should be followed. Based on the initial assessment, appropriate treatment measures will be developed. Treatment measures typically include development of avoidance strategies, capping with fill material, or mitigation of impacts through data recovery programs such as excavation or detailed documentation with appropriate research designs.

If, as a result of the resource evaluation and tribal consultation process, the resource is considered to be a TCR, treatment measures will be developed with input from consulting Tribe(s). All collected cultural objects shall be cleaned and cataloged. Final disposition, which may include permanent curation at an appropriate institution, repatriation, or reburial in a secure location onsite if curation is infeasible, will be determined in consultation with DPR, consulting Tribe(s), and the qualified archaeologist.

c. Disturb any human remains, including those interred outside of dedicated cemeteries?

Construction

Less-than-Significant Impact with Mitigation Incorporated. No known human remains are present on the Project site or in the immediate vicinity. However, ground disturbance related to development projects have, in the past, resulted in the inadvertent discovery of previously unrecorded human remains. Although not anticipated, human remains could be identified during site-preparation and grading activities, which could result in a significant impact. Implementation of MM CR-7 would reduce potential adverse impacts on human remains to a less-than-significant level. As such, impacts on human remains would be considered less-than-significant with mitigation incorporated.

Operation

Less-than-Significant Impact. As described above in Cultural Resources Section V.b, operation of the Project would require periodic maintenance of the filtration equipment, as well as on-going regular clearing of surface debris on the Lake and Pond and regular landscaping activities. These activities are not anticipated to involve activities that would result in the inadvertent discovery or disturbance of human remains beyond what would be typical of on-going maintenance activities at the Arboretum. Therefore, operation impacts related to the disturbance of any human remains would be less than significant. No mitigation is required.

Mitigation Measures

MM CR-7: If human remains are discovered during on-site construction activities, the County of Los Angeles (County) will ensure that the immediate vicinity where the remains are located, according to generally accepted cultural or archaeological standards or practices, is not damaged or disturbed by further development activity until the County has discussed and conferred, pursuant to PRC Section 5097.98, with the most likely descendants (MLD), as determined by the Native American Heritage Commission (NAHC), regarding their recommendations, if applicable, taking into account the possibility

of multiple human remains. The County shall immediately notify the Los Angeles County Coroner, who shall then decide within two working days as to whether the remains are of Native American origin or whether an investigation into the cause of death is required. If the remains are determined to be Native American, the Coroner shall notify the NAHC within 24 hours. The NAHC will immediately notify the MLD of the deceased. The MLD shall make recommendations to the District within 48 hours for the treatment or disposition, with proper dignity, of the human remains and/or grave goods, which shall be implemented in accordance with PRC Section 5097.98 and Section 15064.5(e) of the State CEQA Guidelines. If the MLD fails to make recommendations within 48 hours, the County may reinter the remains in an area of the property not subject to further disturbance. The NAHC is authorized to resolve any disputes regarding the disposition of such remains, pursuant to Section 15064.5(e) of the State CEQA Guidelines. Work may resume at the County's discretion but will commence only after consultation and treatment have been concluded. Work may continue on other parts of the Project while consultation and treatment are conducted.

Cumulative Impacts

The cumulative discussion for cultural resources considers the related projects within a 0.5-mile radius. There are no related projects within a 0.5-mile radius, as identified in Chapter 2, Project Description. Because no construction or operational impacts on historical resources are expected to occur as a result of the proposed Project, there would be no cumulative impacts on historical resources. Thus, the Project would have no incremental effect related to historical resources, and impacts would not be cumulatively considerable.

The Project site is a known, documented prehistoric Native American village site and multiple excavations have produced Native American artifacts. However, should previously unreported archaeological resources be identified during Project implementation, Project-related construction activities could contribute to the incremental loss of these resources. The proposed Project, including future operations, in conjunction with other projects in the vicinity, could result in a cumulative impact on archaeological resources. However, the above-referenced mitigation measures (MM CR-1, and CR-5) would reduce the proposed Project's cumulative impacts to less than significant. Therefore, the incremental effect of the proposed Project related to archaeological resources would not be cumulatively considerable.

There are no known human remains within the Project site or immediate vicinity; however, in the event that previously unreported human remains are identified during Project implementation, Project-related construction activities could contribute to the incremental loss of these resources. The proposed Project, in conjunction with other projects in the vicinity, could therefore result in a cumulative impact on human remains as well as formal and/or informal cemeteries. However, the above-referenced mitigation measure (MM CR-6) would reduce the Project's impacts to less than significant. Therefore, the effect of the proposed Project would not be cumulatively considerable.

VI. Energy		Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:					
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?	☐	☐	☐	☒

Environmental Setting

Electric and natural gas services in the Project area are provided by Southern California Edison (SCE) and Southern California Gas Company, respectively.

Regulatory Setting

The regulatory background of energy plans, policies, regulations, and laws is presented below. Generally, these plans, policies, regulations, and laws do not directly apply to the proposed Project but are presented to provide context to the regulatory setting.

Energy Policy and Conservation Act of 1975. The Energy Policy and Conservation Act of 1975 established the first fuel economy standards for on-road motor vehicles sold in the United States. The National Highway Traffic and Safety Administration is responsible for establishing standards for vehicles and revising the existing standards. The Corporate Average Fuel Economy program was created to determine vehicle manufacturers' compliance with the fuel economy standards. The USEPA administers the testing program that generates the fuel economy data. The Energy Policy and Conservation of 1975 has been amended and includes energy efficiency programs for certain commercial and industrial equipment, including pump energy conservation standards.

National Energy Act of 1978. The National Energy Act of 1978 includes the Public Utility Regulatory Policies Act (Public Law 95-617), Energy Tax Act (Public Law 95-318), National Energy Conservation Policy Act (Public Law 95-619), Power Plant and Industrial Fuel Use Act (Public Law 95-620), and Natural Gas Policy Act (Public Law 95-621).The intent of the National Energy Act was to promote greater use of renewable energy, provide residential consumers with energy conservation audits to encourage slower growth of electricity demand, and promote fuel efficiency. The Public Utility Regulatory Policies Act created a market for nonutility electric power producers to permit independent power producers to connect to their lines and to pay for the electricity that was delivered. The Energy Tax Act promoted fuel efficiency and renewable energy through taxes and tax credits. The National Energy Conservation Policy Act required utilities to provide residential consumers with energy conservation audits and other services to encourage slower growth of electricity demand.

Energy Policy Acts of 1992 and 2005. The Energy Policy Act of 1992 was enacted to reduce dependence on imported petroleum and improve air quality by addressing all aspects of energy supply

and demand, including alternative fuels, renewable energy, and energy efficiency. This law requires certain federal, state, and local government and private fleets to purchase alternative fuel vehicles. The act also defines "alternative fuels" to include fuels such as ethanol, natural gas, propane, hydrogen, electricity, and biodiesel. The Energy Policy Act of 2005 was enacted on August 8, 2005. This law set federal energy management requirements for energy-efficient product procurement, energy savings performance contracts, building performance standards, renewable energy requirements, and use of alternative fuels. The Energy Policy Act of 2005 also amends existing regulations, including fuel economy testing procedures.

Energy Independence and Security Act of 2007. Signed into law in December 2007, the Energy Independence and Security Act was enacted to increase the production of clean renewable fuels; increase the efficiency of products, buildings, and vehicles; improve the federal government's energy performance; and increase U.S. energy security, develop renewable fuel production, and improve vehicle fuel economy. The Energy Independence and Security Act included the first increase in fuel economy standards for passenger cars since 1975. The act also included a new energy grant program for use by local governments in implementing energy-efficiency initiatives, as well as a variety of green building incentives and programs.

Renewable Fuel Standard Program. Created by the Energy Policy Act of 2005, which amended the CAA, the Renewable Fuel Standard Program established requirements to replace certain volumes of petroleum-based fuels with renewable fuels. The four renewable fuel types accepted as part of the Renewable Fuel Standard Program are biomass-based diesel, cellulosic biofuel, advanced biofuel, and total renewable fuel. The 2007 Energy Independence and Security Act expanded the program and its requirements to include long-term goals of using 36 billion gallons of renewable fuels and extending annual renewable-fuel volume requirements to year 2022. "Obligated parties" such as refiners and importers of gasoline or diesel fuel must meet specific blending requirements for the four renewable fuel types. USEPA implements the program in consultation with U.S. Departments of Agriculture and Energy. The obligated parties are required to demonstrate their compliance with the Renewable Fuel Standard Program.

Senate Bills 1078 and 107, Executive Orders S-14-08 and S-21-09, and Senate Bills 350 and 100. Senate Bill (SB) 1078 (Chapter 516, Statutes of 2002) required retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. Executive Order S-14-08 expanded the state's Renewables Portfolio Standard (RPS) to 33 percent renewable power by 2020. Executive Order S-21-09 directs the CARB, under its AB 32 authority, to enact regulations to help the state meet its RPS goal of 33 percent renewable energy by 2020. The 33 percent-by-2020 goal and requirements were codified in April 2011 with SB X1-2. This new Renewables Portfolio Standard applies to all electricity retailers in the state, including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. This was followed by SB 100 in 2018, which further increased the RPS to 60 percent by 2030 and added the requirement that all state's electricity come from carbon-free resources by 2045. These requirements reduce the carbon content of electricity generation and would reduce greenhouse gas (GHG) emissions associated with both existing and new development.

Impact Analysis

Would the project:

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

Construction

Less than Significant Impact. Energy efficiency is a possible indicator of environmental impacts. The actual adverse physical environmental effects of energy use and the efficiency of energy use are detailed throughout this Initial Study in the environmental topic–specific sections. For example, the use of energy for electricity consumption leads to GHG emissions, the impacts of which are addressed in Section 3, "Greenhouse Gas Emissions." There is no physical environmental effect associated with energy use that is not addressed in the environmental topic–specific sections of this Initial Study.

Energy consumption during construction of the proposed Project would involve energy used by construction equipment, haul trucks, and workers' commute vehicles. Heavy-duty construction equipment would primarily use diesel fuel, while work trucks (pickups) and personal vehicles used for commuting would primarily be gasoline-fueled. Based on the anticipated off-road equipment usage, haul truck trips, and worker trips, it is estimated that construction of the proposed Project would consume approximately or 253,165 gallons of diesel and 15,467 gallons of gasoline. Additional details are provided in Appendix A. Based on the anticipated phasing of the proposed Project, anticipated equipment and construction work staff, temporary nature of construction, and project type, the proposed Project would not include unusual characteristics that would necessitate the use of construction equipment that is less energy-efficient than at comparable construction sites.

In addition, contractors are required, in accordance with the CARB Airborne Toxic Control Measure for Diesel-Fueled Commercial Motor Vehicle Idling, to minimize idling time of construction equipment by shutting equipment off when not in use or reducing the time of idling to five minutes. These required practices limit wasteful and unnecessary energy consumption. Therefore, the temporary energy consumption during construction would not be inefficient, wasteful, or unnecessary and impacts would be less than significant.

Operation

Less than Significant Impact. An updated Operations and Maintenance document will be prepared to support the new features such as the pumps. During operation of the proposed Project, it is estimated the staff vehicle trips and weekly water patrols would consume approximately 829 gallons of gasoline per year. Which would not be a substantial increase beyond existing conditions which consist of current staff members and existing maintenance-related activities. Assuming continual operation, the pumps required for the aeration systems are anticipated to consume approximately 254,215 kilowatt-hours per year of electricity. One of the objectives of the proposed Project is to increase stormwater retention and reduce potable water demand, which reduces regional energy consumption associated with water treatment for potable water. Therefore, the minimal operational energy consumption would not be inefficient, wasteful, or unnecessary and impacts would be less than significant.

Mitigation Measures

No potentially significant impacts related to energy would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

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

Construction and Operation

No Impact. The proposed Project is located on land designated as Open Space – Recreation and is not located on land that was slated for renewable energy production and does not conflict with any state or local renewable energy plans, including the regulations describe under "Regulatory Setting" above, and energy resource goals and policies included in the Conservation and Natural Resources Element of the County of Los Angeles General Plan. Therefore, this Project's construction would not obstruct any state or local plans for renewable energy and would conform with state and local plans for energy efficiency. In addition, the proposed Project improvements would increase stormwater retention and reduce potable water demand, reducing regional energy consumption associated with water treatment for potable water. Therefore, construction and operation of this Project would not obstruct any state or local plans for renewable energy and/or energy efficiency.

Mitigation Measures

No potentially significant impacts related to conflicts with a state or local plan for renewable energy or energy efficiency would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

Cumulative Impacts

Past, present, and probable future projects throughout the state would result in the irreversible use of diesel and gasoline resources during construction, as well as the incremental increase in energy consumption from operational energy and traffic associated with those projects. The geographic area considered for cumulative impacts related to energy use includes the SCE and SoCalGas service area. SCE and SoCalGas employ various programs and mechanisms to support provision of gas and electricity services to development.

As described in Chapter 2, Project Description, no other related projects would occur within a 0.5-mile radius of the proposed Project site. Therefore, energy consumption during construction would not be cumulatively considerable. In addition, the use of such resources would be subject to the same regulatory framework relating to energy and fuel efficiency as the proposed Project and would be anticipated to become more energy efficient over time as regulatory requirements change and technological advancements are made. Because the proposed Project would not result in wasteful or inefficient use of energy and would not contribute to a significant cumulative impact, the proposed Project would not result in a substantial contribution to a significant cumulative impact.

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

Environmental Setting

The information in this section is based on the Geotechnical Investigation Baldwin Lake and Tule Pond Restoration Project[32], the Sediment Sampling Report[33], and the Geotechnical Engineering Report:

[32] Los Angeles County Public Works Geotechnical and Materials Engineering Division, Geotechnical Engineering and Geology Investigation Units. June 29, 2023. *Geotechnical Investigation Baldwin Lake and Tule Pond Restoration Project.*
[33] TetraTech. 2015. *Draft Sediment Sampling Report Los Angeles County Arboretum and Botanic Garden.*

Baldwin Lake Retaining Wall and Shoreline Slopes[34] and the Cultural Resources Assessment[35]prepared for this Project.

Geologic Setting

The proposed Project is located in the City of Arcadia within Los Angeles County. The City of Arcadia is located at the boundary between the Peninsular Ranges geomorphic province on the south, and the Transverse Ranges geomorphic province on the north. The east-west trending San Gabriel Mountains, which underlie the northern part of the City, are part of the Transverse Ranges. Locally, the City is located within the northwest portion of the San Gabriel Valley, which is bounded on the north by the San Gabriel Mountains, on the west by the Repetto and Merced Hills, on the south by the Puente Hills, and on the east by the San Jose Hills. The San Gabriel Mountains are the result of uplift along the Sierra Madre fault system at the base of the mountain front. The Sierra Madre fault system extends from the western San Fernando Valley east to the City of Claremont, where it joins the Cucamonga fault.

Erosion of the San Gabriel Mountains due to water and gravity have formed fan-shaped alluvial wedges that fill the San Gabriel Valley, providing a basin for groundwater storage and a geomorphic surface that has recorded young (<12,000 years old) fault movements. Beneath the alluvial fan surface are hundreds of feet of alluvium composed primarily of sand, gravel, cobbles, and boulders, with some clay-rich deposits bordering the northern side of the Raymond fault, which generally runs northeast-southwest through the northern section of the City of Arcadia. The proposed Project is located in the northern portion of the city, where the San Gabriel Mountains begin to rise steeply north of the Sierra Madre fault zone. Basement rocks in this area are millions of years old crystalline granitic and metamorphic rock units.

According to the Seismic Hazard Zone Report for the Mount Wilson 7.5-minute Quadrangle Los Angeles County, California, the Project area is covered by alluvial sediments of Pleistocene and Holocene age (<12,000 years old). These deposits consist of varying proportions of sand, gravel, silt, and clay.

Onsite Soils

According to the Draft Sediment Sampling Report, subsurface soils in the Lake and Pond consist predominantly of silt to approximately 4 to 6.5 feet below mudline (Lake and Pond bottom), mixed coarseness sands beneath the silt, and a clay layer at approximately 12.5 to 15 feet. The contacts between the silt and sand layers were gradual at the Lake and mixed at the Pond. Contact between the sediment layers and clay layer was well defined across almost all samples.

Faults

Active and potentially active faults that cross the City of Arcadia include the Raymond fault, the Sierra Madre fault. The Raymond fault zone is just south of the Arboretum, trending in a northeast-southwest direction. The Clamshell-Sawpit fault is approximately four miles from Arboretum. The Upper Elysian Park blind thrust fault and the Puente Hills blind thrust fault are located within five miles of the Arboretum[36].

[34] Tetra Tech. May 17, 2018. Geotechnical Engineering Report. Baldwin Lake Retaining Wall and Shoreline Slopes.
[35] AECOM. 2023. *Cultural Resources Assessment for the Baldwin Lake and Tule Pond Restoration Project.*
[36] City of Arcadia. 2010. *General Plan Safety Element.* Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/general%20plan/Safety.pdf

Raymond Fault

The Raymond fault passes through the northern portion of the City and bisects the Arboretum approximately 150 feet southeast of the Lake[37]. On the west, the fault is thought to connect to the Hollywood fault. The fault has a distinct south-facing scarp (slope) along much of its length, as well as linear depressions, offset drainages, and sag ponds, of which the Lake is one. These features indicate relatively recent fault movement. The Raymond fault is considered active, and the California Geological Survey (CGS) has established an Alquist-Priolo Earthquake Fault zone on the entire segment and approximately 500 feet on each side of the fault. The Raymond fault is predominately a left-lateral strike-slip fault and is thought to be capable of producing a 6.5 magnitude earthquake. Depending on the magnitude, surface (ground) rupture for the Raymond fault could be up to 6 feet, and the related ground deformation zone could be over one-quarter mile wide, mostly north of the fault location. Slip rates for the Raymond fault vary from a minimum of 1.5 millimeters per year (mm/yr.) with an uncertainty of ±1.0 mm/yr., and an average earthquake recurrence interval of about 3,000 years[38].

Sierra Madre Fault Zone

The Sierra Madre fault zone defines the southern edge of the Transverse Ranges geomorphic province extending west to east from the San Fernando fault to the Cucamonga fault. The Sierra Madre fault crosses the northern end of the City approximately three miles from the Project site. The Sierra Madre fault is thought to be capable of producing a 7.2 magnitude earthquake. Estimated fault slip could be 10 to 30 feet with related ground deformation over one-quarter mile wide. The reverse fault slip rate for the Sierra Madre fault is assumed to be in the range of 2 to 4.5 mm/yr. and the average recurrence interval for large earthquakes is around 3,000 to 4,000 years. The CGS has an active program to determine if the Alquist-Priolo Earthquake Fault Zone should be further defined to include the City, however no timetable for release of the preliminary Alquist-Priolo Earthquake Fault Zone maps for the Arcadia area is available at this time.

Upper Elysian Park Blind Thrust and Puente Hills Blind Thrust Faults

The Upper Elysian Park fault is located southwest of the Project site, and the Puente Hills fault is located to the south of the Project site; both are less than five miles from the Project site. These faults are capable of generating magnitude 6.4 and 7.1 earthquakes, respectively. [39] Blind thrust fault earthquakes are deep, generally several thousand feet beneath the surface. They have no, or very subtle, surface expressions and do not present a deformation threat to the Project site; however, due to proximity, the Project site would be subject to ground shaking from these faults.

Clamshell-Sawpit Canyon Fault

The Clamshell-Sawpit Fault is part of the Sierra Madre fault zone. It is located less than four miles from the Project site. This fault has the potential of generating a 6.5 magnitude earthquake; however, given its

[37] Tetra Tech. May 17, 2018. Geotechnical Engineering Report-Baldwin Lake Retaining Wall and Shoreline Slopes.
[38] City of Arcadia. 2010. General Plan EIR, Chapter 4 Geology and Soils. Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/eir/Geology.pdf
[39] City of Arcadia. 2010. General Plan EIR, Chapter 4 Geology and Soils. Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/eir/Geology.pdf

depth, surface rupture is unlikely. The slip rate is 0.3 to 1.0 mm/yr., and the last significant activity was a 5.8 magnitude event in 1991.[40]

Liquefaction

According to the State of California Geology Seismic Hazard Zones Map – Arcadia Quadrangle, the Project site is located in an area that is subject to liquefaction[41].

Liquefaction occurs when loosely packed, water-logged sediments at or near the ground surface lose their strength in response to strong ground shaking – typically related to earthquakes. Surficial deposits that are susceptible to liquefaction include very loose to lose deposits, and loose to moderately dense deposits, which are typically unconsolidated and poorly to slightly cemented.

Paleontological Resources

Paleontological resources include identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provided taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronological information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years. Accordingly, any identifiable vertebrate fossil is considered significant. Paleontological potential is the potential for the presence of significant paleontological resources and is determined only after a survey of a rock unit in conjunction with a review of available literature and relevant paleontological locality records from the entire rock unit.

According to the Cultural Resources Assessment prepared for the proposed Project[42] and available as Appendix C of this document, the Project area is underlain by hundreds of feet of sedimentary, alluvial deposits caused by erosion of the San Gabriel Mountains. These deposits consist of varying proportions of sand, gravel, silt, and clay. The geologic mapping of the Project area indicates that there are three geologic units (rock types) that could possibly be impacted by the proposed Project. These units include: 1) Holocene gravel and sand of major stream channels (type Qa), 2) Holocene alluvial gravel, sand, and silt of valley areas (type Qg), and 3) Pleistocene alluvial fan gravel and sand derived from the San Gabriel Mountains (type Qof).

A paleontological records search at the Natural History Museum of Los Angeles County (NHMLA) was requested in support of this Project. The records search did not identify any fossil localities that lie directly within the Project area; however, five fossil localities were identified nearby from the same sedimentary rock deposits that occur in the Project area, either at the surface or at depth. These fossils include: a mammoth fossil recovered at an unknown depth in Pasadena; in marine sediments at the Puente Hills Landfill; within marine sediments near San Dimas; and in Monterey Park and Bell Gardens. Additional literature searches did not find references to other fossil localities near the Project site. Further, no unpublished technical reports concerning mitigation efforts near the Project were located.

[40] City of Arcadia. 2010. General Plan EIR, Chapter 4 Geology and Soils. Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/eir/Geology.pdf
[41] California Department of Conservation. 2022. *California Geologic Survey.* Available at: https://maps.conservation.ca.gov/cgs/EQZApp/app/
[42] AECOM. 2023. *Cultural Resources Assessment for the Baldwin Lake and Tule Pond Restoration Project.*

The Project sediments mapped as Qa and Qg are too geologically young to contain significant paleontological resources. The Qof sediments are old enough to produce paleontological resources.

Regulatory Setting

Federal

Alquist-Priolo Act

The primary purpose of the Alquist-Priolo Act is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The act addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. The law requires the state geologist to establish regulatory zones (known as Earthquake Fault Zones or Alquist-Priolo Zones) around the surface traces of active faults and issue locational maps to all affected cities, counties, and state agencies for their use in safe construction. Before a project may be permitted, a geologic investigation is required to demonstrate that proposed buildings would not be constructed across active faults. An evaluation and written report of a specific site must be prepared by a licensed geologist. If an active fault is found, a structure for human occupancy cannot be placed over the trace of the fault and must be set back from the fault (generally 50 feet).

Seismic Hazards Mapping Act of 1990

The California State Seismic Hazards Mapping Act of 1990 addresses earthquake hazards other than surface fault rupture, including liquefaction and seismically induced landslides. The state establishes city, county, and state agency responsibilities for identifying and mapping seismic hazard zones and mitigating seismic hazards to protect public health and safety. The act requires the California Department of Conservation, Division of Mines and Geology, to map seismic hazards and establishes specific criteria for Project approval that apply within seismic hazard zones, including the requirement for a geological technical report.

State

California Building Code

The CCR, Title 24 (California Building Code) applies to all applications for building permits. The California Building Code (also called the California Building Standards Code) has incorporated the International Building Code), which was first enacted by the International Conference of Building Officials in 1927 and which has been updated approximately every 3 years since that time. The current version of the California Building Code (2013) became effective on January 1, 2014.

Local agencies must ensure that development in their jurisdictions comply with guidelines contained in the California Building Code. Cities and counties can, however, adopt building standards beyond those provided in the code.

Local

County of Los Angeles Building Code

The 2014 County of Los Angeles Building Code, as amended, came into effect January 1, 2014, with Title 26, Building Code, adopting the California Building Code, 2013 Edition (Part 2 of Title 24 of the CCR). The County of Los Angeles Building Code addresses issues related to site grading, cut and fill slope

design, soil expansion, geotechnical investigations before and during construction, slope stability, allowable bearing pressures and settlement below footings, effects of adjacent slopes on foundations, retaining walls, basement walls, shoring of adjacent properties, and potential primary and secondary seismic effects. The County of Los Angeles Public Works Building and Safety Division is responsible for implementing the provisions of the Building Code. The County's primary seismic regulatory document is the Safety Element of the County of Los Angeles General Plan, adopted in 1996.

Los Angeles County General Plan 2035 Conservation and Natural Resources Element

The Los Angeles County 2035 General Plan Conservation and Natural Resources Element[43] acknowledges that historic, cultural, and paleontological resources are an important part of Los Angeles County's identity. The Conservation and Natural Resources Element sets forth goals and policies for the management of preservation of such resources.

Goal C/NR 14. Protected historic, cultural, and paleontological resources.

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 historic, cultural, and paleontological resources.

Policy C/NR 14.5. Promote public awareness of 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.

Impact Analysis

Would the project:

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

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Construction and Operation

Less-than-Significant Impact. The Raymond fault transects Arboretum property. In addition, the Sierra Madre and Puente Hills faults, less than five miles from the Project site pose a substantial threat related to surface rupture for the Project site. Depending upon the type of fault, the depth and magnitude of the earthquake, ground displacements could occur the near surface and geologic and soil formations accompanied by co-seismic folding, ground tilting, and/or uplift above these faults.

[43] Los Angeles County General Plan 2035. Chapter 9- Conservation and Natural Resources Element. Available at: https://planning.lacounty.gov/wp-content/uploads/2022/11/9.0_gp_final-general-plan-ch9.pdf

According to the Department of Conservation Fault Activity Map of California (California Department of Conservation 2016), the Project site is within the Raymond fault zone, which is a California Geological Survey (CGS) Alquist-Priolo Earthquake Fault zone. An earthquake with a magnitude of 6.5 on the Raymond fault could result in ground rupture of up to 6 feet. A 7.2 earthquake on the Sierra Madre fault could result in ground rupture of 10 feet or more. These types of ground rupture could cause severe damage to structures and infrastructure overlying the faults. If such movement occurred on a buried fault, regional uplift could occur. Surface rupture associated with nearby faults, particularly the Raymond fault presents a seismic hazard to the Project site during construction and operation of the proposed Project because surface rupture can result in damage to structures including utility infrastructure.

The proposed Project does not include habitable structures and will comply with all County and City existing regulations, standard conditions and seismic design criteria that protect structures and infrastructure from surface rupture hazards. As described in Chapter 2, Project Description, construction management BMPs including coordination by P W staff prior to, and during construction, will ensure compliance with all geotechnical recommendations and requirements. Therefore, impacts related to seismic surface rupture will be less than significant.

Mitigation Measures

No potentially significant impacts related to earthquake fault rupture would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

ii. Strong seismic ground shaking?

Construction and Operation

Less-than-Significant Impact. The Raymond fault is the closest fault to the Project site—transecting the Arboretum property. Additionally, as described above, there are several faults less than five miles from the Project site, as well as active faults throughout the entire southern California region. As a result, the Project site is and will be subject to seismic shaking and strong ground motion resulting from seismic activity. The proposed Project includes construction of a 10-foot by 10-foot by 4-foot structure to house mechanical and electrical equipment that would only be occupied when the equipment is being serviced. Adherence to local ordinance standards regulating construction, and the application of proven seismic design criteria as standard engineering practice would ensure the proposed Project structures and infrastructure are designed to withstand seismic events without sustaining substantial damage or collapsing. As described in Chapter 2, Project Description, construction management BMPs including coordination, review and oversight by PW GMED staff prior to, and during construction, will ensure compliance with all geotechnical recommendations and requirements. Implementation of the proposed Project would not expose people or structures to potential substantial adverse effects including the risk of loss, injury, or death as a result in a greater risk of seismic ground shaking at the Project site. Therefore, impacts from construction and during operation would be less than significant.

Mitigation Measures

No potentially significant impacts related to earthquake fault rupture would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

iii. Seismic-related ground failure, including liquefaction?

Construction

Less-than-Significant Impact. Liquefaction occurs when saturated, low-density, loose materials (e.g., sand or silty sand) are weakened by a total or substantial loss of shear strength and behave like a liquid substance; severe ground shaking during seismic events is the most typical cause of liquefaction. Liquefaction more often occurs in areas underlain by silts and fine sands and where shallow groundwater exists. The California Geological Survey Earthquake Zones of Required Investigation – Mount Wilson Quadrangle (1999, revised 2017)[44] designates the Project site as both an Earthquake Fault Zone and a Seismic Hazard Zone – Liquefaction Zone. Although the proposed Project does not include habitable structures, damage to facilities could result in threats to the safety of personnel onsite during construction. Adherence to local ordinance standards regulating construction, and the application of proven seismic design criteria as standard engineering practice would ensure the proposed Project structures and infrastructure are designed to withstand seismic events without sustaining substantial damage or collapsing. As described in Chapter 2, Project Description, construction management BMPs including coordination, review and oversight by PW GMED staff prior to, and during construction, will ensure compliance with all geotechnical recommendations and requirements. Therefore, impacts associated with seismic related ground failure during construction, particularly ground failure related to liquefaction are less than significant.

Operation

Less-than-Significant Impact. The proposed Project does not include habitable structures. However, as previously described, the Project site is susceptible to liquefaction, seismic ground shaking, and seismically induced liquefaction which could result in structural damage to Project facilities and infrastructure, which, in turn, could affect operation of the Project systems. Adherence to local ordinance standards regulating the application of proven seismic design criteria as standard engineering practice would ensure the proposed Project structures and infrastructure are designed to withstand seismic events without sustaining substantial damage or collapsing. Therefore, operational impacts associated with seismic related ground failure, particularly ground failure related to liquefaction are less than significant. No mitigation is required.

Mitigation Measures

No potentially significant impacts related to seismically related ground failure, including liquefaction would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

iv. Landslides?

Construction and Operation

No Impact. According to the California Geological Survey Seismic Hazard Zone Report for the Mount Wilson 7.5 Minute Quadrangle, Los Angeles County, California, which includes the Project site, there are no areas designated as "zones of required investigation for earthquake-induced landslides" within the Project site. Thus, construction and operational impacts are not expected, and no impact would occur.

[44] California Geological Survey. 1999 revised 2017. *Earthquake Zones of Required Investigation: Mount Wilson Quadrangle.*

Mitigation Measures

No impacts related to landslides would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

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

Construction

Less-than-Significant Impact. Construction of the proposed Project would result in ground surface disruption activities, such as site excavation, sediment removal and drying. These activities could result in the potential for erosion to occur at the Project site. However, soil exposure would be temporary and short-term in nature and compliance with the National Pollutant Discharge Elimination System (NPDES) General Construction Permit would include preparation of a Storm Water Pollution Prevention Plan (SWPPP) that requires implementation of standard erosion control practices and construction BMPs to prevent soil erosion and loss of topsoil from construction activities. As described in Chapter 2, Project Description, BMPs may include non-toxic soil stabilizers, suspending construction activity when wind speeds exceed 25 mph, covering all trucks hauling soil and other loose materials with tarps. Therefore, construction impacts related to soil erosion and the loss of topsoil would be less than significant.

Operation

No Impact. Project design features such as installation of a liner in the Lake will protect embankments from erosion. Further, as shown on Figure 2-4, Baldwin Lake Proposed Improvements, and Figure 2-5, Tule Pond Proposed Improvements, landscaping improvements along the embankments also reduce shoreline erosion. Therefore, proposed Project would not result in long-term, operational impacts associated with soil erosion or loss of topsoil as the site would not contain a substantial amount of exposed soil.

Mitigation Measures

No impacts related to erosion or loss of topsoil would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

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

Construction and Operation

Less-than-Significant Impact. According to the California Geological Survey (CGS) the Project site is not located in an Earthquake -Induced Landslide Hazard Zone.[45] The Geotechnical Engineering Report prepared for the Project did not observe evidence of land sliding on or in the immediate vicinity of the site. Therefore, landslides are not considered to be a hazard at the Project site.

Land subsidence is the lowering of the ground surface due to extraction or lowering of water levels or other fluids underground, such as extraction of large amounts of groundwater, or due to seismic activity. When groundwater is extracted from aquifers at a rate that exceeds the rate of replenishment, overdraft occurs, which can lead to subsidence. The Project site is not located in an area mapped by the United

[45] California Geological Survey. 1999 revised 2017. *Earthquake Zones of Required Investigation: Mount Wilson Quadrangle.*

States Geological Survey where either historical or current subsidence has been recorded.[46] Therefore, subsidence would not be considered a hazard at the Project site.

Lateral spreading is a type of liquefaction-induced ground failure on mildly sloping ground. Collapsible soils consist of unconsolidated, low-density materials such as alluvial deposits (sand, silt and gravel) that may collapse and compact under the addition of excessive water or loading. Soil collapse occurs when the land surface is saturated at depths greater than those reached by typical rain events. According to the Geotechnical Engineering Report, although there is a risk of liquefaction, the depth of liquefiable zone is such that soils would be sufficiently constrained against lateral movements that they would contribute relatively little to lateral movements at ground surface. Therefore, the hazard of lateral spreading at the site is low.

As described above in Section VII, a, iii, the Project site is within a State designated liquefaction hazard zone[47]. Therefore, there is a potential for liquefaction to occur at the Project site. As groundwater conditions at the Project site are not fully understood[48] it should be assumed that shallow groundwater conditions will impact construction and operation of the Project. As described in Chapter 2, Project Description, construction management BMPs including coordination, review, and oversight by PW GMED staff prior to, and during construction, will ensure compliance with all geotechnical recommendations and requirements. Therefore, impacts related to liquefaction would be less than significant.

Since there are no impacts related to landslides or hazards from subsidence and lateral spreading at the site, and less than significant impacts related to liquefaction, impacts from construction and operation would be less than significant. No mitigation is required.

Mitigation Measures

No impacts related to unstable geologic units or soil would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

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

Construction

Less-than-Significant Impact. Expansive soils are characterized by their ability to undergo substantial volume changes (shrink or swell) due to variations in moisture content as a result of precipitation, landscape irrigation, utility leakage, roof drainage, perched groundwater, drought, or other factors. Changes in moisture within expansive soils may cause severe distress for structures, foundations, slabs, pavements, and retaining walls, and cause these features to crack, heave, or break apart. In addition, liquefaction may result in unacceptable settlement or heave of structures or concrete slabs supported on grade. Physical indications of expansive soils at the surface may include, but are not limited to, fissures, differential settlement, misaligned walls, and cracked or uplifted concrete slabs.

[46] United States Geological Survey. N.d. Areas of Land Subsidence in California. Available at: https://ca.water.usgs.gov/land_subsidence/california-subsidence-areas.html

[47] California Geological Survey. 1999 revised 2017. *Earthquake Zones of Required Investigation: Mount Wilson Quadrangle.*

[48] Los Angeles County Public Works Geotechnical and Materials Engineering Division, Geotechnical Engineering and Geology Investigation Units. June 29, 2023. *Geotechnical Investigation Baldwin Lake and Tule Pond Restoration Project.*

According to the Geotechnical Investigation[49], based on the exploration data, onsite soils surrounding Baldwin Lake have been identified to be weak and have a low-to-high expansive potential. Since the proposed Project is restoration of Baldwin Lake and Tule Pond, the Project component most susceptible to the effects of expansive soils is repair of the existing retaining wall. However, the Project has been designed to provide adequate foundation support for the retaining walls around the Lake and Pond, and to provide moisture control for excavated soils intended to be used as fill where applicable. Therefore, impacts are less than significant.

Operation

Less-than-Significant Impact. As described above, the Project component most susceptible to the effects of expansive soils is the retaining wall. As noted, the Project has been designed to provide adequate foundation support for the retaining wall, as well as moisture control for excavated soils intended to be used as fill were applicable. Further, Project components such a diversion units and storm drainpipes will be designed with flexible joints to account for possible differential settlement resulting from changes in soil moisture, and underground, or at-grade structures such as vault boxes will be designed with a drainage system to prevent water from draining to the foundation bottom to limit potential settlement. In addition, adherence to local ordinance standards regulating the application of proven seismic design criteria as standard engineering practice would ensure the proposed Project structures and infrastructure are designed to accommodate expansive soils without sustaining substantial damage or collapsing. Therefore, impacts associated with expansive soils during Project operation will be less than significant.

Mitigation Measures

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

Construction and Operation

No Impact. No septic tanks or alternative wastewater disposal systems are proposed as part of the proposed Project. Therefore, no impacts would occur.

Mitigation Measures

No impacts related to the use of septic tanks or alternative wastewater disposal systems would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less-than-Significant with Mitigation Incorporated. No paleontological resources were identified within the Project site as a result of the paleontological records search. Further, the desktop geological review and mapping identified the surficial sediments at the Project site as geologically young (Holocene) alluvial deposits of gravel, sand and silt. These types of sediments (i.e., Qa and Qg-type) are considered to have low potential to contain significant paleontological resources and Project disturbance of these types of sediment do not require monitoring of paleontological resources. However,

[49] Los Angeles County Public Works Geotechnical and Materials Engineering Division, Geotechnical Engineering and Geology Investigation Units. June 29, 2023. *Geotechnical Investigation Baldwin Lake and Tule Pond Restoration Project.*

the paleontological records search did identify a mammoth fossil recovered in Pasadena (at an unknown depth) within sediment with a high potential (Qof-type) to contain paleontological resources. Disturbance of significant paleontological resources would result in a significant impact under CEQA. Destruction of significant paleontological resources could result in a significant impact. Further, significant paleontological resources can be uncovered even in areas with low potential (i.e., Qa and Qg-type sediments) and/or locations with no previously recorded specimens, and it is possible that ground-disturbing construction activities associated with implementation of the proposed Project could result in the inadvertent discovery of paleontological resources, which could be a significant impact.

Implementation of MM PR-1 as described below would reduce the impacts related to discovery of previously unknown paleontological resources to a less-than-significant level.

Mitigation Measures

MM PR-1:, A qualified paleontologist meeting Society of Vertebrate Paleontology standards shall be retained to determine areas that shall require paleontological monitoring during initial ground disturbance and to design and present Paleontological Resource Awareness Training for Project construction personnel.

The qualified paleontologist will supervise paleontological monitoring, specimen recovery, specimen preparation, specimen identification, preparation of a final report on paleontological resource monitoring efforts, and curation of significant paleontological resources covered consistent with the guidelines of the Society of Vertebrate Paleontology.

Cumulative Impacts

There are no related projects within a 0.5-mile radius, as identified in Chapter 2, Project Description. As discussed above, no impacts related to earthquake fault rupture and landslides would occur. Potential seismic shaking impacts would be less than significant. However, potentially adverse effects associated with seismic hazards related to liquefaction and lateral spreading and soil erosion associated with the proposed Project would be site-specific and would be addressed on-site. Therefore, the incremental effect of the proposed Project would not be cumulatively considerable.

VIII. Greenhouse Gas Emissions	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Environmental Setting

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

GHGs are present in the atmosphere naturally, are released by natural sources and anthropogenic sources, and are formed from secondary reactions taking place in the atmosphere. The following GHGs are widely accepted as the principal contributors to human-induced global climate change that would be relevant to the proposed Project: carbon dioxide (CO_2); methane (CH_4); and nitrous oxide (N_2O). Emissions of CO_2 are byproducts of fossil fuel combustion. CH_4 is the main component of natural gas and is associated with agricultural practices and landfills. N_2O is a colorless GHG that results from industrial processes, vehicle emissions, and agricultural practices.

Global warming potential (GWP) is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to CO_2. The GWP of a GHG is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere (atmospheric lifetime). The reference gas for GWP is CO_2; therefore, CO_2 has a GWP of 1. The other main GHGs that have been attributed to human activity include CH_4, which has a GWP of 28, and N_2O, which has a GWP of 265 (IPCC 2013). For example, 1 ton of CH_4 has the same contribution to the greenhouse effect as approximately 28 tons of CO_2. GHGs with lower emissions rates than CO_2 still may contribute to climate change because they are more effective at absorbing outgoing infrared radiation than CO_2 (i.e., high GWP). The concept of CO_2-equivalents (CO_2e) is used to account for the different GWP potentials of GHG to absorb infrared radiation.

Regulatory Setting

Executive Order S-3-05. Executive Order (EO) S-3-05, signed in June 2005, proclaimed that California is vulnerable to the impacts of climate change. EO S-3-05 declared that increased temperatures could reduce the Sierra Nevada's snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emissions

targets. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

Assembly Bill 32. In 2006, California passed the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32; California Health and Safety Code Division 25.5, Sections 38500, et seq.). AB 32 further details and puts into law the mid-term GHG reduction target established in EO S-3-05, which is to reduce statewide GHG emissions to 1990 levels by 2020 and 80 percent below 1990 levels by 2050. AB 32 also identifies CARB as the state agency responsible for the design and implementation of emissions limits, regulations, and other measures to meet the target.

Executive Order B-30-15. Issued in April 2015, EO B-30-15 establishes a statewide GHG reduction goal of 40 percent below 1990 levels by 2030. The emission reduction target acts as an interim goal between the AB 32 goal (i.e., achieve 1990 emission levels by 2020) and EO S-03-05 goal of reducing statewide emissions 80 percent below 1990 levels by 2050. In addition, the EO aligns California's 2030 GHG reduction goal with the European Union's reduction target (i.e., 40 percent below 1990 levels by 2030) that was adopted in October 2014.

Executive Order B-55-18. Issued in September 2018, EO B-55-18 establishes a new statewide goal of achieving and maintaining carbon neutrality as soon as possible and no later than 2045.

Senate Bill 32. SB 32, signed on September 8, 2016, requires California to reduce GHG emissions to 40 percent below 1990 levels by 2030. That 2030 target represents reductions needed to ensure California can achieve its longer-term 2050 target of a reduction of GHG emissions by 80 percent below 1990 levels per EO B-30-15.

Assembly Bill 1279. AB 1279, signed on September 16, 2022, declares the policy of the state both to achieve net zero greenhouse gas emissions as soon as possible, but no later than 2045, and achieve and maintain net negative GHG emissions thereafter, and to ensure that by 2045, statewide anthropogenic GHG emissions are reduced to at least 85 percent below the 1990 levels. The bill requires CARB to work with relevant state agencies to ensure that updates to the scoping plan identify and recommend measures to achieve these policy goals and to identify and implement a variety of policies and strategies that enable carbon dioxide removal solutions and carbon capture, utilization, and storage technologies in California, as specified.

Our County Sustainability Plan (County Sustainability Plan). In 2019, the County developed the County Sustainability Plan. The County Sustainability Plan is the regional sustainability plan for what local governments and stakeholders can do to enhance the well-being of every community in the County while reducing damage to the natural environment and adapting to the changing climate, particularly focusing on those communities that have been disproportionately burdened by environmental pollution.

2045 Los Angeles County Climate Action Plan. In June 2024, the County of Los Angeles Board of Supervisors adopted the Los Angeles County 2045 Climate Action Plan (2045 CAP). The 2045 CAP is the County's roadmap toward meeting the goals of the Paris Agreement and achieving carbon neutrality for unincorporated Los Angeles County. The 2045 CAP builds on previous climate action work from the Unincorporated Los Angeles County Community Climate Action Plan 2020 (2020 CCAP)[50], adopted in October 2015 as a subcomponent of the Air Quality Element of the Los Angeles County General Plan

[50] Los Angeles County Department of Regional Planning. 2015. *Final Unincorporated Los Angeles County Climate Action Plan 2020.* Available at: https://case.planning.lacounty.gov/assets/upl/project/ccap_final-august2015.pdf

2035 (General Plan)[51]. The 2045 CAP identifies strategies, measures, and actions to mitigate GHG emissions from community activities and also includes a development review consistency checklist to allow future projects to streamline GHG emissions analyses pursuant to CEQA.

Methodology

The geographic scope of consideration for GHG emissions is on a global scale as such emissions contribute, on a cumulative basis, to global climate change. Given the nature of environmental consequences from GHGs and global climate change, CEQA requires that lead agencies evaluate the cumulative impacts of GHGs, even relatively small additions, on a global basis. By their nature, GHG evaluations under CEQA are a cumulative study. (See Center for Biological Diversity v. California Department of Fish and Wildlife [2015] 62 Cal.4th 204.)[52] According to Appendix G of the 2023 CEQA Guidelines, implementation of a project and its incremental contribution to global climate change would be considered significant if it would do either of the following:

> Impact GHG-1: generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or
>
> Impact GHG-2: conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

As stated in the CEQA Guidelines, these questions are "intended to encourage thoughtful assessment of impacts and do not necessarily represent thresholds of significance" (Title 14, Division 6, Chapter 3 Guidelines for Implementation of the CEQA, Appendix G, VII Greenhouse Gas Emissions). The CEQA Guidelines encourage but do not require lead agencies to adopt thresholds of significance (CEQA Guidelines, Section15064.7). When developing these thresholds, and consistent with the December 2018 CEQA and Climate Change Advisory published by the California Office of Planning and Research (OPR 2018), the Guidelines allow lead agencies to develop their own significance threshold and/or to consider thresholds of significance adopted or recommended by other public agencies, or recommended by experts, provided that the thresholds are supported by substantial evidence. Individual lead agencies may also undertake a case-by-case approach for the use of significance thresholds for projects consistent with available guidance and current CEQA practice (OPR 2018).

As the County of Los Angeles has not established or adopted screening thresholds for GHG emissions and the 2045 Draft CAP has not been adopted at the time of this analysis, the analysis reviewed the applicable significance thresholds developed by the SCAQMD. The SCAQMD has adopted a significance threshold of 10,000 MT of CO_2e per year for industrial (stationary source) projects. The GHG CEQA Significance Threshold Stakeholder Working Group also recommended options for evaluating non-industrial projects, including a mass-based thresholds for residential and commercial projects of 3,000 MT CO_2e per year (SCAQMD 2008). The SCAQMD recommends that construction emissions associated with a project be amortized over the life of the project (typically assumed to be 30 years)[53]. Although the

[51] Los Angeles County Department of Regional Planning. *General Plan 2035 – Chapter 8 Air Quality Element.* Available at: https://case.planning.lacounty.gov/assets/upl/project/gp_final-general-plan-ch8.pdf

[52] CEQA Portal. 2015. Center for Biological Diversity v. Department of Fish and Wildlife. Available at: https://ceqaportal.org/ceqacase.cfm?cq_id=1612

[53] The 30-year project lifetime is generally based on the California Building Standards Code. The Energy Commission is required by law to adopt standards every three years that are cost effective for homeowners over the 30-year lifespan of a building. The proposed project would not include the construction of any buildings and proposed project features would

proposed Project is not residential or commercial project, the proposed Project would involve construction activities for a recreational land use. Therefore, the draft SCAQMD threshold of 3,000 MT CO_2e would be most applicable to the proposed Project. However, the SCAQMD has not adopted a threshold of significance consistent with SB 32 goals. To provide this additional information to put the Project generated GHG emissions in the appropriate statewide context, this analysis also reviewed guidelines used by other public agencies. For example, the Sacramento Metropolitan Air Quality Management District (SMAQMD) has identified an annual threshold of 1,100 MT CO_2e for the construction phase of projects (SMAQMD 2018). Although the SMAQMD recognizes that, although there is no known level of emissions that determines if a single project will substantially impact overall GHG emission levels in the atmosphere, a threshold must be set to trigger a review and assessment of the need to mitigate Project GHG emissions. The threshold set by the SMAQMD was developed to allow lead agencies to assess the consistency of proposed projects with the AB 32 and SB 32 reduction goals. Therefore, this analysis utilizes the 1,100 MT CO_2e threshold developed by SMAQMD for the construction phase of all project types for conservative purposes.

It is not the intent of this CEQA document to cause the adoption of these thresholds as mass emissions limits for this or other projects, but rather to provide this additional information to put the Project generated GHG emissions in the appropriate statewide context.

Impact Analysis

Would the project:

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

Construction and Operation

Less than Significant Impact. Construction-related and operational GHG emissions were estimated using the methodology discussed earlier under Section III, Air Quality. As shown in Table 3-7, construction of the proposed Project would generate approximately 327 metric tons (MT) of CO_2e in 2025 and 2,446 MT CO_2e in 2026. Operation of the proposed Project would result in approximately 49 MT CO_2e per year.

include outlets, concrete retaining walls, pump structures, boat ramp, and a viewing deck, which may last longer than 30 years. However, 30 years was used a conservative analysis. If project features are identified to have a longer lifetime, the annual amortized construction emissions would be lower.

Table 3-7. Construction and Operational GHG Emissions

Description	GHG Emissions (MT CO_2e)
Construction	
2025	327
2026	2,446
Total Construction GHG Emissions	2,773
Amortized Construction GHG Emissions [1]	92.43
Operations	
Energy	40.2
Area	<0.01
Water	2.0
Mobile (Staff Vehicle Trips and Water Patrols)	6.6
Total Operational GHG Emissions	**48.8**
Combined Construction and Operational GHG Emissions	**141.2**

[1] Since construction related GHG emissions would cease upon completion of construction, but GHG's have long atmospheric lifetimes, GHG emissions associated with construction of the proposed Project were amortized over the proposed Project lifetime. The assumed amortization period is 30 years, based on the typically assumed Project lifetime. The SCAQMND recommends amortization of construction related GHG emission so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies, as applicable (SCAQMND 2008).

As shown in Table 3-7, the amortized construction-related and operational emissions of the proposed Project would not exceed SCAQMD's draft threshold of 3,000 MT CO2e per year, nor the SMAQMD threshold of 1,100 MT CO2e. Therefore, construction and operation of the proposed Project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. This impact would be less than significant. No mitigation is required.

Mitigation Measures

No potentially significant impacts related to GHG emissions would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

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

Construction

Less-than-Significant Impact. CARB has developed a series of Climate Change Scoping Plans and Scoping Plan updates. While the Scoping Plan updates do include measures that would indirectly address GHG emissions associated with construction and operational activities, including the phasing in of cleaner technology for diesel engine fleets (including construction equipment) and Low Carbon Fuel Standard, successful implementation of these measures predominantly depends on the development of laws and policies at the state level. As such, none of these statewide plans or policies constitutes a regulation to adopt or implement a regional or local plan for reduction or mitigation of GHG emissions. Thus, it is assumed that any requirements or policies formulated under the mandate of AB 32, SB 32, and AB 1279 that would be applicable to the Project, either directly or indirectly, would be implemented consistent with statewide policies and laws.

As described previously, the 2045 Draft CAP builds on previous climate action work from the 2020 CCAP. The 2020 CCAP includes GHG reduction measures grouped into five strategy areas: green building and energy; land use and transportation; water conservation and wastewater; waste reduction, reuse, and recycling; and land conservation and tree planting. The waste reduction, reuse, and recycling strategy area includes SW-1: Waste Diversion Goal, which outlines a number of local recycling and composting initiatives that the County will implement in conjunction with waste service providers throughout the community. Consistent with SW-1, and as described in Chapter 2, Project Description, the proposed Project would incorporate source reduction techniques and recycling measures and maintain a recycling program to divert waste in accordance with County of Los Angeles and City of Arcadia construction and demolition debris recycling ordinances.

Thus, construction of the proposed Project would not conflict with the County of Los Angeles 2020 CCAP, Draft 2045 CAP, County Sustainability Plan, CARB Scoping Plans; or any other relevant plans, policies, or regulations for the purpose of reducing GHG emissions. This impact would be less than significant. No mitigation is required.

Operation

Less-than-Significant Impact. The land conservation and tree planting strategy area includes LC-2: Create New Vegetated Open Space, which is also an element included in the Los Angeles County Sustainability Plan (Action 43: Create and implement a community-informed Urban Forest Management Plan that incorporates equitable urban forest practices and prioritizes: Climate and watershed-appropriate and drought/pest-resistant vegetation). Consistent with LC-2 and Sustainability Plan Action 43, as described in Chapter 2, Project Description, the proposed Project addresses critical needs of the region of addressing climate change by reducing energy consumption and increasing carbon sequestration through tree plantings. Furthermore, one of the primary objectives of the proposed Project is to reduce potable water demand by lining the Lake to reduce water loss and increasing infiltration to reduce potable and imported water use. This is also consistent with strategies included in the 2020 CCAP (WAW-2: Recycled Water Use, Water Supply Improvement Programs, and Stormwater Runoff). Finally, the proposed Project would also enhance open space, habitat, and recreational features by increasing water depth and improving the ecosystem, and providing various recreational features, which is also consistent with goals included in the County's Sustainability Plan to have accessible parks and public spaces that create opportunities for respite, recreation, ecological discovery, and cultural activities.

Thus, operation of the proposed Project would not conflict with the County of Los Angeles 2020 CCAP, Draft 2045 CAP, County Sustainability Plan, CARB Scoping Plans; or any other relevant plans, policies, or regulations for the purpose of reducing GHG emissions. This impact would be less than significant. No mitigation is required.

Mitigation Measures

No potentially significant impacts related to conflict with an applicable plan, policy, or regulation adopted for the purposed of reducing the emissions of GHGs would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

Cumulative Impacts

The geographic scope of consideration for GHG emissions is on a global scale because such emissions contribute, on a cumulative basis, to global climate change. Given the nature of environmental consequences from GHGs and global climate change, CEQA requires that lead agencies evaluate the cumulative impacts of GHGs, even relatively small additions, on a global basis. By their nature, GHG evaluations under CEQA are a cumulative study. (See Center for Biological Diversity v. California Department of Fish and Wildlife (2015) 62 Cal.4th 204). The GHG emissions impact analysis above constitutes a cumulative analysis, in that it considers global, statewide, and regional projections of GHG emissions, as well as the contribution of the Project, to GHG emission impacts. Therefore, the significance conclusions reached above also constitute the significance conclusions with regard to cumulative GHG emissions impacts. This impact would be less than cumulatively considerable.

IX. Hazards and Hazardous Materials	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c. Emit hazardous emissions or involve handling 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 Section65962.5 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 area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f. Impair implementation of or physically interfere with an adopted emergency evacuation plan?	☐	☐	☐	☒
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fire?	☐	☐	☐	☒

Environmental Setting

The proposed Project site is located within the City of Arcadia in Los Angeles County. As shown on Figure 2-2, Project Location Map, adjacent to the Arboretum property to the northwest, north and south are residential land uses. Colorado Boulevard and the I-210 freeway are immediately north of Arboretum, and Baldwin Avenue is adjacent to the property on the east. The Santa Anita Racetrack, and Westfield Santa Anita Mall are located across Baldwin Avenue east and southeast of the Arboretum.

Hazardous Materials Records

Onsite

A Preliminary Environmental Site Screening (PESS)[54] was completed for the proposed Project in April 2023. The PESS included a site reconnaissance, review of aerial photographs and topographic maps, review of previous investigative reports, and searches of publicly available regulatory databases. Based on the available information reviewed and the Project's described scope of work, the results of the PESS did not identify significant potential environmental conditions impacting the property. However, the sediment study of the Pond conducted in July 2015[55], detected one instance of elevated lead concentrations. As part of the 2015 investigation, representative sediment samples from the Lake and Pond were collected and analyzed to determine proper sediment handling and disposal procedures during Project construction. Sediments were tested for Title 22 metals, total petroleum hydrocarbons, polycyclic aromatic hydrocarbons, polychlorinated biphenyls, and organochlorine pesticides. According to the report: "the sediment samples collected from the Lake did not contain contaminants at hazardous levels; however, a sediment sample collected from one (1) core in the Pond contained California hazardous concentrations of lead, and if sediment is removed, the sediment must be disposed of accordingly. Additionally, the lead concentrations in water should be monitored during sediment removal to evaluate pond and sediment dewatering treatment and disposal options."

While the PESS did not identify environmental conditions that would impact the proposed Project, the PESS does not preclude that contamination may exist in soils, sediment, and water at the Project site in areas that have not been identified as environmental concerns because: 1) contamination releases may not have been reported to the authorities; 2) contamination releases were not known to have occurred; 3) data gaps exist in the referenced databases, historical photographs, or maps; or 4) contamination may exist outside of the 2015 sediment characterization areas. There is also the possibility that site contamination may occur subsequent to the PESS.

Nearby Properties

The 2023 PESS included a site reconnaissance, review of aerial photographs and topographic maps, review of previous investigative reports, and searches of publicly available regulatory databases and did not identify significant potential environmental conditions impacting the Project site.

Schools

Hugo Reid Elementary School and Hugo Reid Primary School are the closest schools to the proposed Project site; both are located approximately 0.50 miles west of the Arboretum. Other schools in the area include the Holy Angels Schools, located approximately one mile to the southeast, Barnhart School, approximately one mile to the northeast, and Arcadia High School, approximately 1.5 miles southwest.

[54] *Preliminary Environmental Site Screening- Baldwin Lake and Tule Pond Restoration Project* (Project ID FCC0001341[Project No. EF16419003]). Los Angeles Public Works. April 3, 2023.
[55] *Draft Sediment Sampling Report: Los Angeles County Arboretum and Botanic Garden, Arcadia, California.* August 2015. Tetra Tech

Regulatory Setting

Federal

Federal Toxic Substances Control Act/Resource Conservation and Recovery Act/Hazardous and Solid Waste Act

The Federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA) established an EPA-administered program to regulate the generation, transport, treatment, storage, and disposal of hazardous waste. The RCRA was amended in 1984 by the Hazardous and Solid Waste Act, which affirmed and extended the "cradle to grave" system of regulating hazardous.

Cortese List

U.S. Code 65962.5 (commonly referred to as the Cortese List) includes Department of Toxic Substances Control (DTSC)-listed hazardous waste facilities and sites, Department of Health Services lists of contaminated drinking water wells, sites listed by the SWRCB as having underground storage tank leaks or a discharge of hazardous wastes or materials into the water or groundwater, and lists from local regulatory agencies of sites with a known migration of hazardous waste/material.

Department of Transportation Hazardous Materials Regulations (49 CFR 100–185)

U.S. Department of Transportation Hazardous Materials Regulations covers all aspects of hazardous materials packaging, handling, and transportation. Parts 107 (Hazard Materials Program), 130 (Oil Spill Prevention and Response), 172 (Emergency Response), 177 (Highway Transportation), would all apply to the proposed Project and/or surrounding uses.

State

California Health and Safety Code

DTSC, a department of Cal/EPA, is the primary agency in California for regulating hazardous waste, cleaning up existing contamination, and finding ways to reduce the amount of hazardous waste produced in California. DTSC regulates hazardous waste primarily under the authority of the Federal RCRA and the California Health and Safety Code (primarily Division 20, Chapters 6.5 through 10.6, and Title 22, Division 4.5). Division 20, Chapter 6.5 of the California Health and Safety Code deals with hazardous waste control through regulations pertaining to transportation, treatment, recycling, disposal, enforcement, and permitting of hazardous waste. Division 20, Chapter 6.10 contains regulations applicable to the cleanup of hazardous materials releases. Title 22, Division 4.5 contains the environmental health standards for the management of hazardous waste. This includes standards for identification of hazardous waste (Chapter 11) and standards applicable to transporters of hazardous waste (Chapter 13).

California Code of Regulations, Title 8—Industrial Relations

Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the workplace. The California Division of Occupational Safety and Health (Cal OSHA) and the federal Occupational Safety and Health Administration are the agencies responsible for assuring worker safety in the workplace. Cal OSHA assumes primary responsibility for developing and enforcing standards for safe workplaces and work practices. These standards would be applicable to both construction and operation of the Project. The standards included in the Cal OSHA's Title 8 include regulations pertaining to hazard control (including administrative and engineering

controls), hazardous chemical labeling and training requirements, hazardous exposure prevention, hazardous material management, and hazardous waste operations.

California Code of Regulations, Title 13, Section 1160 – 1167

CCR Title 13, Section 1160 – 1167 governs the regulation of transportation of hazardous materials on state public roads and works in conjunction with Federal Title 49 CFR, described above, and apply to the transportation of hazardous materials, and all persons transporting hazardous materials on public roads for commercial purposes, transportation by state or local governments, and private individuals.

California Labor Code (Division 5, Parts 1, and 7)

The California Labor Code is a collection of regulations that include the regulation of the workplace to ensure appropriate training on the use and handling of hazardous materials and the operation of equipment and machines that use, store, transport, or dispose of hazardous materials. Division 5, Part 1, Chapter 2.5 ensures employees that are in charge of the handling of hazardous materials are appropriately trained on, and informed of, the materials they are handling. Division 5, Part 7 ensures employees who work with volatile flammable liquids are outfitted in appropriate safety gear and clothing. Local

Operational Area Emergency Response Plan

Under the County of Los Angeles Office of Emergency Management, the Operational Area Emergency Response Plan addresses how the County of Los Angeles carries out centralized emergency management should an emergency go beyond day-to-day response capabilities. It ensures the successful coordination of the response and the initiation of recovery operations among County departments in response to incidents in the unincorporated areas and/or the incorporated areas of the County Operational Area. The Operational Area Emergency Response Plan also addresses interagency coordination of information, operations, and aid among the local governments within the Operational Area.

Impact Analysis

Would the project:

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

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

Construction and Operation

Less-than-Significant Impact. Materials and waste are generally considered hazardous if they are poisonous (toxicity), can be ignited by open flame (ignitability), corrode other materials (corrosivity), or react violently, explode, or general vapors when mixed with water (reactivity). The term "hazardous material" is defined in the State Health and Safety Code (Chapter 6.95, Section 2551[o]) as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to health and safety or to the environment. Hazardous waste is defined as any hazardous material that is abandoned, discarded, or recycled, as defined in the State Health and Safety Code (Chapter 6.95, Section 25125). The transportation, use, and disposal of hazardous materials,

as the potential releases of hazardous materials to the environment, are closely regulated through many state and federal laws.

Hazardous materials releases can occur if there are existing hazardous materials at the Project site that would be disturbed by Project construction or operation, or if Project construction or operation activities involve the handling of substantial amounts of hazardous materials with a potential to result in upset and accident conditions.

Construction of the proposed Project would be short-term and limited in nature and will involve excavation, grading and similar activities, during which time routine and limited transport, storage, use or disposal of hazardous materials would occur. Examples of hazardous materials that may be handled include contaminated groundwater, fuels, lubricating fluids, and solvents. Additionally, post-construction maintenance activities would also require the use of small amounts of fuels and oil (for maintenance equipment operation), along with any chemicals or pesticides related to the upkeep of the landscaping at the Project site; however, no hazardous material on-site storage is required. Excavation, treatment, and/or disposal of contaminated groundwater and contaminated soils would be conducted to the satisfaction of the applicable regulatory agencies, which include the California Department of Toxic Substances Control (DTSC), and Regional Water Quality Control Board (RWQCB). As previously described, the results of PESS screening did not identify significant potential environmental conditions related to hazardous materials impacting the Project site but did not preclude that other contaminants and/or contamination may exist in the soil and sediment. Further, the 2015 sediment study of the Lake and Pond detected one instance of elevated lead concentrations at the Pond. The 2015 study recommended the following to further identify the nature and extent of contamination in the sediment in order to determine the volume of material that would need to be potentially treated and/or disposed of as hazardous waste: 1) collection and analysis of additional sediment core samples from the Pond to laterally and vertically delineate the chemical composition prior to sediment removal, and/or 2)collect, analyze, and evaluate sediment samples from the sediment removed, and the dewatered stockpiles prior to disposal, to segregate and reduce the amount of material sent offsite for appropriate waste disposal.

It is anticipated that sediment removed from the Pond will be classified as California-hazardous waste and will need to be disposed of at a Class I landfill. Class I landfills are permitted to accept materials, such as contaminated soils. Contaminated soil would be appropriately containerized for safe transport to a licensed disposal facility. As described in Chapter 2, Project Description, the furthest, practicable Class I landfill is the US Ecology Nevada, Inc., facility near Beatty, Nevada[56], approximately 290 miles northeast of the Arboretum. The anticipated haul route to this facility from the Arboretum would be the I-210 east to I-15 north to SR-127 north to US-95 north.

It is anticipated that sediment removed from the Lake will be classified as contaminated, non-hazardous waste and will need to be disposed of at a Class III landfill. As described in Chapter 2, Project Description, the furthest, practicable Class III landfill is the Simi Valley Landfill and Recycling Center in Simi Valley, Ventura County, California [57], approximately 51 miles northwest of the Arboretum. The anticipated haul route from the Arboretum to the Simi Valley Landfill would utilized the westbound I-210 and westbound SR-118 freeways. Other potential Class III landfills that could be utilized include the Sunshine Canyon Landfill in Sylmar, California, approximately 33 miles northwest of the Arboretum,

[56] U.S. EPA. 2024. *US Ecology Nevada, Inc.* Available at: https://www.epa.gov/pcbs/us-ecology-nevada-inc
[57] CalRecycle. 2019. *Simi Valley Landfill & Recycling Center.* Available at: https://www2.calrecycle.ca.gov/SolidWaste/Site/Summary/3954

and the Chiquita Landfill in Castaic, California, approximately 46 miles northwest of the Arboretum. The anticipated haul routes from the Arboretum to these facilities would be the westbound I-210 to the northbound I-5 freeways.

Each load of contaminated material would be manifested for tracking purposes and transported to the appropriate facility by a licensed waste hauler in accordance with the federal, state, and local regulatory requirements. Construction of the proposed Project, including transport of hazardous materials will comply with existing federal, state and local regulation pertaining to routine transport, use, or disposal of hazardous materials and would not create a significant hazard to the public or environment.

Materials used in the maintenance of the proposed Project are not expected to represent the handling of acutely hazardous materials, and transport, use, and disposal must be compliant with applicable regulations as described under the regulatory setting section above. The Project will also return the Lake and Pond to its existing use, with improved function; thus, no ground disturbance would occur during operation. Therefore, impacts would be less than significant during construction and operation.

Mitigation Measures

No potentially significant impacts related to creation of a significant hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials, nor the creation of 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 as a result of the proposed Project. Therefore, no mitigation measures are required.

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

Construction

Less-than-Significant Impact. The handling or emission of hazardous materials near schools must consider potential health effects on children, who are considered sensitive receptors. The closest school to the Project site is Hugo Reid Elementary, 1000 Hugo Reid Drive, Arcadia, approximately one-half (0.5) mile southwest of the Project site. Hugo Reid Primary School, 1153 de Anza Place, Arcadia, is approximately 0.65 miles west of the Project site Further, there are no preschools or childcare facilities within 0.25 miles of the Project. As previously described in response IX. a., and IX. b., above, the sources of hazardous materials related to the proposed Project would be during construction activities and include excavation and grading similar activities, during which time routine and limited transport, storage, use or disposal of hazardous materials would occur. Examples of hazardous materials that may be handled include contaminated groundwater, fuels, lubricating fluids, and solvents.

Excavation and disposal of contaminated groundwater and contaminated soils would be conducted to the satisfaction of the applicable regulatory agencies, which include the California Department of Toxic Substances Control (DTSC), and Regional Water Quality Control Board (RWQCB). No contaminated soil will be treated onsite. All contaminated soil will be properly handled in accordance with all regulations and disposed of properly offsite. to a Class I landfill permitted to accept this waste (contaminated soil) The potential disposal facilities are described above; a 200-mile trip length was assumed for the purpose of CEQA. Truck access from the Project site would likely be Baldwin Avenue to access the I-210 freeway. The haul routes are in the opposite direction of Hugo Reid Elementary School and Hugo Reid

Primary School. Further, the transport, use, or disposal of hazardous materials would comply with existing federal, state and local regulation pertaining hazardous materials.

Given the limited extent and temporary nature of construction activities, and that the nearest school is more than one-quarter (0.25) mile from the Project site, the proposed Project would result in less than significant impacts related to hazardous emissions or the handling of hazardous materials within one-quarter (0.25) mile of a school. No mitigation is required.

Operation

Less-than-Significant Impact. Once construction is completed, post-construction maintenance activities would also require the use of small amounts of fuels and oil (for maintenance equipment operation), and routine chemicals and pesticides for landscape maintenance; however, no hazardous material on-site storage is required. During operation, the Project will also return to its existing use, with improved function; thus, no ground disturbance would occur.

Therefore, impacts would be less than significant during operation without mitigation.

Mitigation Measures

No potentially significant impacts related to hazardous emission or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

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, create a significant hazard to the public or the environment?

Construction and Operation

No Impact. As described previously, the 2023 PESS prepared for the Project did not identify the Project site as included on a list of hazardous materials sites compile pursuant to Government Code Section 65962.5. Further, the 2023 PESS did not identify significant potential environmental conditions impacting the property, nor did it identify environmental conditions that would impact the proposed Project. Therefore, construction and operation of the proposed Project would result in no impacts related to the Project site being included on a list of hazardous materials sites.

Mitigation Measures

No potentially significant impacts related to inclusion on a list of hazardous materials sites would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

e. For a project located within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

Construction and Operation

No Impact. The proposed Project is not located within an airport land use plan, is not within two miles of a public airport or public use airport, or in the vicinity of a private airstrip. The closest airport to the

Project site is the San Gabriel Valley Airport[58], 4233 North Santa Anita Avenue, El Monte, CA, located approximately 5.3 miles south. Thus, people at the Project site would not be at risk for aircraft safety hazards or exposed to excessive noise from aircraft operations. Further, the proposed Project does not propose features that could result in hazard impacts on aircraft safety or operation. No impacts would occur during construction and operation.

Mitigation Measures

No potentially significant impacts related to public or private airport safety hazards would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Construction and Operation

Less-than-Significant Impact As described in Section 2.0, Project Description, construction of the Project will occur within the Arboretum. However, local roadways will be utilized to transport construction equipment and material to and from the Arboretum, and by construction personnel when arriving to, and departing from the Project site. Construction will not require temporary or permanent closure of any local roadways, and access to surrounding roadways would be maintained throughout the construction period. The City of Arcadia has identified emergency access and evacuation routes in the vicinity, including the I-210 freeway and major north-south and east-west roadways in the City of Arcadia connecting to the freeway.[59] In addition, Los Angeles County Operational Area identifies freeways, highways, or arterial routes to be used as disaster and evacuation routes.[60] Both the City of Arcadia and Los Angeles County identify the I-210 freeway as a freeway disaster route and Los Angeles County includes Colorado Boulevard, Huntington Drive, and Las Tunas Drive as arterial disaster routes within the City of Arcadia. [61] Both the I-210 freeway and Colorado Boulevard are immediately north of the Arboretum property and are accessible from Baldwin Avenue which borders the Arboretum on the east. Further, Colorado Boulevard is accessible from Old Ranch Road on the west side of the Arboretum property (see Figure 2-2, Project Location Map). Identified emergency disaster and evacuation routes in the vicinity would not be affected during construction or operation.

The proposed Project would implemented consistent with all City of Arcadia and Los Angeles County Emergency Response Plans. Further, as described in Chapter 2, Project Description, construction management BMPs include providing notification to fire, police and emergency service providers, of construction activities such as road detours. Therefore, impacts related to emergency response plans, response times, and evacuation routes would be less than significant. No mitigation is required.

[58] Los Angeles County Public Works. *Noise Abatement: San Gabriel Valley Airport.* Available at: https://dpw.lacounty.gov/avi/airports/images/NoiseABatement/EMT%20Noise%20Pamphlet%20-%20Page%201.jpg
[59] City of Arcadia General Plan EIR. 2010. *Chapter 4.7: Hazards.* Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/eir/Hazards.pdf
[60] Los Angeles County Public Works. *The Disaster Routes for the Los Angeles County Operational Area.* Available at: https://pw.lacounty.gov/dsg/disasterroutes/.
[61] Los Angeles County Public Works. July 2008. *Disaster Route Map: City of Arcadia*. Available at: https://pw.lacounty.gov/dsg/disasterroutes/map/Arcadia.pdf

Mitigation Measures

No impacts related to adopted emergency response plans or emergency evacuation routes would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

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

Construction and Operation

No Impact. The proposed Project area is located in a densely developed area of Los Angeles County and is not located within or in the vicinity of wildland area. According to information obtained from the California Department of Forestry and Fire Protection (Cal Fire), the proposed Project site is not within a Cal Fire Very High Fire Hazard Severity Zones (VHFHSZ)[62]. Therefore, no impacts would occur.

Mitigation Measures

No impacts related to wildland fires would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

Cumulative Impacts

There are no related projects within a 0.5-mile radius, as identified in Chapter 2, Project Description. As discussed above, Project-level potential impacts resulting from the routine transport, use, or disposal of hazardous materials would be less than significant, and no active releases of hazardous materials were identified in the project vicinity. Although the proposed project would likely involve the use of fuels, solvents, and other hazardous materials in support of short-term construction activities, the potentially adverse environmental effects associated with the release of hazardous materials usually are site-specific, remediated on-site and generally do not combine with similar effects that could occur with other projects in the vicinity. Thus, the incremental effect of the proposed Project related to the routine transport, use, disposal, and accidental release of hazardous materials would not be cumulatively considerable.

No Project-level impacts related to private airstrips impacts, interference of an adopted emergency response plan or emergency evacuation plan, or wildland fire impacts were identified. Thus, the Project would have no incremental effect related to private airstrips, emergency response plans, or wildland fires, and impacts would not be cumulatively considerable.

[62] California Department of Forestry and Fire Protection. June 2023. *Fire Hazard Severity Zone Viewer.* Available at: https://osfm.fire.ca.gov/media/5801/arcadia.pdf

X. Hydrology and Water Quality	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
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 site 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?	☐	☐	☐	☒

Environmental Setting

Hydrology

The Project site, and the City of Arcadia, is located within the watershed of the Los Angeles River which is hydraulically connected to the San Gabriel River Watershed by the Rio Hondo tributary[63]. Run off from the San Gabriel Mountains and the urban environment flows through the City along five major washes, including the Arcadia Wash which is adjacent to the Project site. The Pond acts as a pre-settling

[63] City of Arcadia. 2010. General Plan EIR Chapter 4.8, Hydrology. Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/eir/Hydrology.pdf

basin to the Lake fed by urban and stormwater runoff from the residential areas northwest and west of the Arboretum. During storm events the Lake overflows into Arcadia Wash which discharges into the Rio Hondo River, and eventually to the San Gabriel River.

Groundwater

The City of Arcadia is underlain by the Main San Gabriel and the Raymond groundwater basins. The Raymond Fault acts as a hydrological barrier between the two basins. Based on a review of the state Seismic Hazard Zone Report (described previously in Section VII, Geology and Soils), the historic groundwater level in the vicinity of the Project ranged between 5 and 20 feet below ground surface (bgs). However, urbanization which has heavy demands on groundwater and frequent drought conditions, makes the historic groundwater level data is generally not reliable enough to base design and construction remediations on. Sediment sampling conducted at the Lake and Pond in 2015 noted that groundwater was encountered between 17 and 27 feet bgs[64]. The 2023 Geotechnical Investigation included an evaluation of ground water conditions around the Lake and Pond in order to assess the potential impacts of groundwater on the design and construction of the Project. As indicated in the 2023 report, monthly groundwater level monitoring between April 2022 and April 2023 found groundwater levels around the Lake and Pond have ranged from approximately 12 to 34 feet bgs. The 2023 report further noted that the Pond is dry outside of the rainy season which requires that water be continuously pumped into the Lake to maintain the water level. This indicated that either there is no shallow groundwater source flowing into the two water bodies and therefore the water dissipates during the dry periods without pumping supplied water; or due to the heavy sedimentation of the two water bodies, a possible shallow groundwater table does exist just below the sediment mud line and there is a possibility that perched water would fill the Lake and Pond if sediment was removed.

Floodplains

Per the Federal Emergency Management Agency's (FEMA) National Flood Insurance Rate Map, the Project site is not located within a 100-year flood hazard area. The Project site is mapped as being within "Zone X,"[65] which is defined as an area outside the 0.2% annual chance floodplain, or areas of minimal flood hazards.

Water Quality

Under Section 303(d) of the Clean Water Act, the SWRCB is required to submit lists of impaired waters. These are waters that are too polluted or otherwise degraded to meet water quality standards. The law requires that the states establish priority rankings for waters on the lists and develop TMDLs for these waters. The Project site drains to Arcadia Wash, Rio Hondo and the San Gabriel River. The Rio Hondo River and San Gabriel River are listed as impaired by the SWRCB (State Water Resources Control Board 2018).[66]

[64] TetraTech. 2015. *Draft Sediment Sampling Report Los Angeles County Arboretum and Botanic Garden.*
[65] FEMA's National Flood Hazard Layer Viewer. 2008.*FIRM Panels: 06037C1400F.* Available at: https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd&extent=-118.08727433582412,34.11649416020132,-118.00850906763173,34.1547092484533
[66] California Water Boards. *Final California 2018 Integrated Report (303[d]).* Available at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2018state_ir_reports_final/apx_c_state_factsheets/02847.shtml

Impact Analysis

Would the project?

a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Construction and Operation

Less-than-Significant Impact. Project construction activities, such as sediment removal the Lake and Pond, site clearing and grading, and landscaping could temporarily affect water quality into receiving waters or other water bodies. Contaminants from construction vehicles and equipment and sediment from soil erosion could increase the pollutant load in runoff being transported to storm drains or receiving waters during construction, which would be a potentially significant impact. Construction stormwater discharges in Los Angeles County are regulated under a SWRCB Water Quality Adopted Order 2022-0057-DWQ (As amended by 2010-0014-DWQ and 2012-006-DWQ (Construction General Permit). The proposed Project would implement measures to minimize and contain erosion and sedimentation, minimize runoff flows into storm drains. The Project would include a number of BMPs to ensure impacts from erosion and sediment, non-stormwater discharges and hazardous spills are minimized and in compliance with applicable laws. Standard BMPs, as described in Chapter 2, Project Description, would be followed during construction to avoid the spill or leakage of fuels from construction equipment into storm drains, receiving waters, and potential infiltration to groundwater.

Given the uncertainty of groundwater and Lake water level fluctuations, dewatering provisions may be necessary. If dewatering is necessary in areas where groundwater is encountered within the planned depth of sediment removal at the Lake and Pond, depending on surface and groundwater levels at the time of construction, a permit for discharge of the extracted groundwater may be obtained from the Regional Water Quality Control Board (RWQCB). This discharge shall be consistent with the RWQCB requirements and as such would not result in a violation of water quality standards or waste discharge requirements. Therefore, impacts related to water quality standards, waste discharge requirements, or otherwise degrade water quality would be less than significant. No mitigation is required.

Operation

Less-than-Significant Impact. Once construction is completed, operation would be similar to existing conditions. The proposed Project would not result in an increase in impervious surface area resulting in an increase in the rate and volume of stormwater runoff from the site. Operation of the proposed Project would not violate water quality standards or waste discharge requirements. As described above in Chapter 2, Project Description, the objectives of the proposed Project are to improve water quality by treating stormwater runoff, increase stormwater detention, reduce water loss and infiltrate stormwater and low flow runoff. By improving water quality, the proposed Project would reduce the amounts of metals, bacteria, nutrients, and trash being discharged into Arcadia Wash, the Rio Hondo River, and eventually the Los Angeles River. Improvements at the Pond include Project design features to improve flood control and water quality. These design features include installation of in-line water treatment systems such as HDS units to treat runoff for trash, sediment, and oils, and media filtration systems to treat any additional sediment, debris, free-floating oil, heavy metals, and phosphorus not captured by the HDS units. Additional design features proposed to support the HDS units and media filtration systems include the use of phytoremediation plants such as sedges (Figure 2-5, Tule Pond Proposed

Improvements) which can assist in removing toxic compounds from water.[67] As also shown on Figure 2-5, flow-reduction boulders are proposed within the Pond to stabilize the shoreline against erosion, reduce flow velocity and additional debris flow. Once operational, the proposed Project will improve water quality. Therefore, operational impacts related to water quality standards, waste discharge requirements and degradation of water quality would be less than significant. No mitigation is required.

Mitigation Measures

No potentially significant impacts related to the violation of water quality standards, waste discharge requirements, nor would the Project substantially degrade surface ground water quality would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

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

Construction

Less-than-Significant Impact. As described above in Chapter 2, Project Description, the proposed Project addresses critical needs of the greater Los Angeles County regions by improving water supply as stormwater will be collected and percolated into the groundwater table to provide groundwater recharge and potentially augment the Main San Gabriel Basin and the Raymond Basin water supply.

During construction, if dewatering is necessary in areas where groundwater is encountered within the planned depth of sediment removal at the Lake and Pond, depending on surface and groundwater levels at the time of construction, a permit for discharge of the extracted groundwater may be necessary from the Regional Water Quality Control Board (RWQCB). This discharge shall be consistent with the RWQCB requirements and follow construction BMPs as described in Chapter 2, Project Description, and as such would not result in a violation of water quality standards or waste discharge requirements. Therefore, the proposed Project would not interfere substantially with groundwater recharge and impacts would be less than significant. No mitigation is required.

Operation

Less-than-Significant Impact. The Project will remove accumulated sediment from the Pond to achieve the Pond's historical capacity improving stormwater percolation. Additionally, the Project will not install features that would extract groundwater. Therefore, the proposed Project would not interfere substantially with groundwater recharge and impacts would be less than significant. No mitigation is required.

Mitigation Measures

No potentially significant impacts related to groundwater supplies or groundwater recharge would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

[67] Sanjay Mishra, Ashutosh Tripathi, Durgesh Kumar Tripathi, Devendra Kumar Chauhan. "Role of sedges (Cyperaceae) in wetlands, environmental cleaning and as food material," in Plant-Environment Interaction: Responses and Approaches to Mitigate Stress, ed. Mohamed Mahgoub Azooz, Parvais Ahmed (Hoboken, NJ: John Wiley & Sons, Ltd, 2016), pages 327-338. https://doi.org/10.1002/9781119081005.ch18

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?

Construction

Less-than-Significant Impact. Construction of the proposed Project would not substantially alter the existing drainage pattern in the Project area. Project construction activities could temporarily alter existing drainage patterns and could result in local (on site) and temporary erosion and siltation. However, erosion control BMPs would be implemented during the construction phase to minimize temporary impacts of erosion and siltation associated with construction activities. As identified in this Section X. a., Hydrology and Water Quality, construction activities will comply with construction BMPs, as described in Chapter 2, Project Description, to minimize and contain erosion and sedimentation. Construction of the proposed Project is not anticipated to alter the existing drainage pattern of the site or area in a manner that would result in substantial on- or off-site erosion or siltation. Therefore, impacts from construction would be less than significant. No mitigation is required.

Operation

Less-than-Significant Impact. The existing stormwater infrastructure at the Pond receives storm flows from the surrounding residential areas and provides infiltration to the groundwater basin, with the Pond acting as a pre-settling basin to the Lake. The current drainage pattern, as shown on Figure 2-3: Site Location Map, includes storm drains on the west side of the Arboretum property that discharge runoff in the Pond. This water enters the Lake upstream, and during large storm events will discharge into an outlet structure on the eastern shore which flows into Arcadia Wash. Although proposed Project improvements include reconfiguration and realignment of the existing flood control features, these improvements will not change the existing drainage patterns of the Pond and Lake. Once construction is completed, an improvement over existing conditions is anticipation because diversion of stormwater runoff from surrounding areas would improve as would the Pond's function as a pre-settling basin, reducing the potential for stormwater to result in substantial erosion or siltation on-site or off-site. Implementation of the proposed Project would not substantially alter the existing drainage pattern of the site or area in a manner that would result in substantial on-site or off-site erosion. Therefore, impacts during operation would be less than significant. No mitigation is required.

Mitigation Measures

No potentially significant impacts related to existing drainage patterns would occur as a result of construction and operation of the proposed Project. Therefore, no mitigation measures are required.

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

Construction

Less-than-Significant Impact. Construction of the proposed Project will not substantially alter existing drainage patterns of the site, or substantially increase surface runoff that would result in flooding on- or off-site. Construction of the proposed Project may negligibly increase surface runoff due to the water used for construction activities such as equipment maintenance, and dust control as these activities may result in ponding. However, construction does not include the addition of impervious surfaces, therefore

any ponding of water would be temporary as the water would either evaporate or infiltrate the ground. Construction BMPs as described in Chapter 2, Project Description, will minimize surface runoff that would result in flooding on- or off-site during Project construction. Therefore, impacts would be less than significant. No mitigation is required.

Operation

Less-than-Significant Impact. Although the proposed Project involves improvements to the Lake and Pond, once construction is complete, the drainage pattern of these existing water bodies will not be altered. Proposed Project features include removing sediment and increasing the depths of both the Lake and Pond, to up to 14 feet and 12 feet, respectively. This improvement will increase the volume potential of each of these water bodies to provide more capacity for runoff and stormwater. Project features such as flow reduction boulders (Figure 2-5: Tule Pond Proposed Improvements) will limit uncontrolled runoff during storm events, and replacement of the historic cobblestone retaining wall will reduce erosion, both of which can contribute to increases in surface runoff and flooding. Implementation of these stormwater features ultimately would reduce the potential for moderate localized flooding and ponding in areas throughout the Project site and, therefore, is not expected to substantially alter the rate or amount of surface runoff on the Project site such that on- or off-site flooding would occur. Therefore, impacts would be less than significant. No mitigation is required.

Mitigation Measures

No potentially significant impacts related to existing drainage patterns would occur as a result of construction and operation of the proposed Project. Therefore, no mitigation measures are required.

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?

Construction

Less-than-Significant Impact The proposed Project includes improvements to the existing storm drains that discharge into the Pond and eventually the Lake. These improvements will increase stormwater detention, provide better infiltration of stormwater and address low flow runoff at the Pond.

The proposed Project is not anticipated to create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems. In addition to providing water quality improvements at the Pond and Lake, reconstruction and realignment of existing storm drains will improve removal of runoff from the surrounding residential areas which is the source of runoff that discharges into the Pond. Project design features such as the in-line treatment systems including diversion structures, HDS units, and media filtration systems will treat runoff for trash, sediments, oils, heavy metals, phosphorus and other debris. Phytoremediation plants, such as sedges, at the Pond (see Figure 2-5: Tule Pond: Proposed Improvements) will further help treat polluted runoff.

Implementation of construction BMPs, as described in Chapter 2, Project Description, will minimize surface runoff that would result in flooding on- or off-site; therefore, impacts would be less than significant.

Operation

Impact. Operation of the proposed Project is not anticipated to create or contribute excess runoff water and is not anticipated to have an adverse effect on the capacity of existing stormwater drainage systems or provide additional sources of polluted runoff. During future heavy storm events, the proposed improvements to the existing stormwater system, along with sediment removal of the Pond and Lake to increase water depth will provide improve stormwater drainage. Therefore, no impacts would occur. No mitigation is required.

Mitigation Measures

No potentially significant impacts related to exceeding stormwater runoff capacity, or contributing additional sources of stormwater runoff would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

iv) Impede or redirect flood flows?

Construction and Operation

No Impact. A 100-year flood is a flood defined as having a 1.0 percent change of occurring in any given year. Per the FEMA National Flood Insurance Rate Map, the Project site is not located within a 100-year flood hazard area. The Project site is mapped as being with "Zone X,"[68] which is defined as an area outside the 0.2% annual chance floodplain or areas of minimal flood hazards. No impact related to the alteration of the existing drainage pattern resulting in impeding or redirection flood flows would occur.

Mitigation Measures

No potentially significant impacts related to water quality would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

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

Construction and Operation

No Impact. As discussed above, in Section X (c)(iv), the proposed Project is not located within a 100-year flood hazard zone, and there would be no impacts related to food hazards. Tsunami (seismic sea waves) hazards are not present for the City of Arcadia due to the City of Arcadia's distance from the ocean. Therefore, the proposed Project site would not be subject to tsunami hazards.

As previously described, the Project site is not with a CGS landslide area and would not be at risk for slope instability that would result in inundation by mudflows.

Seiche is the formation of large wave oscillations in enclosed water bodies such as a lake or reservoir due to seismic activity or extremely high winds. During an earthquake, a seiche can occur and potentially cause major flooding and water inundation damage. The Project site is within the inundation area of the Morris S. Jones Reservoir. However, this reservoir was constructed to guard against failure to seismic activity, both from structural failure and internal wave action that could be generated by an

[68] FEMA's National Flood Hazard Layer Viewer. 2008.*FIRM Panels: 06037C1400F.* Available at: https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd&extent=-118.08727433582412,34.11649416020132,-118.00850906763173,34.1547092484533

earthquake and through compliance with applicable local and State seismic design requirements.[69] Therefore, the Project site is not at risk due to seiche. Construction and operation of the proposed Project will not contribute to inundation by seiche, tsunami, or mudflow. No impacts would occur.

Mitigation Measures

No potentially significant impacts related to flood hazards, or inundation by seiche, or tsunami would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Construction and Operation

No Impact. As previously discussed, a Project-specific SWPPP would be developed and implemented to control pollutants in stormwater discharges during construction activities. Operation of the proposed Project would not create runoff, in excess of, or in varying quality to existing conditions. The Project would not substantially deplete groundwater supplies. Therefore, the Project would not obstruct implementation of a water quality control plan or sustainable groundwater management plan. As such, no impact would occur.

Mitigation Measures

No potentially significant impacts related to flood flows would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

Cumulative Impacts

The cumulative discussion for hydrology and water quality considers the related projects within a 0.5-mile radius. The geographic scope for cumulative impacts on hydrology and water quality includes the Rio Hondo/San Gabriel River Watershed. The proposed Project would be implemented consistent with all applicable laws, permits, ordinances and plans which would reduce incremental effects to hydrology and water quality. The proposed Project would not result in an increase of impervious surfaces within the watershed and is required to include pervious surfaces to retain storm water drainage on-site.

The proposed Project would implement post-construction BMPs including periodic visual monitoring and removal of trash and debris, as required by the MS4 Permit which will reduce surface runoff and pollutant loadings compared to the existing condition and ensure optimal water quality and service life. After construction, the proposed Project is anticipated to improve stormwater quality in the Project area. Implementation of the proposed Project is anticipated to reduce existing impacts to water quality and aid in meeting TMDL compliance. As a result, the proposed Project would have a positive net benefit to hydrology and water quality.

The areas surrounding the proposed Project area are of similar urban pervious nature, and any future development would include compliance with of all required laws, permits, ordinances and plans, such as the MS4 Permit requirements in order to meet runoff requirements. The majority of the future development projects would occur within already developed areas and would not significantly

[69] City of Arcadia General Plan. 2010. *Safety Element.* Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/general%20plan/Safety.pdf

contribute to increased runoff as result of increases in impervious surfaces. Other future developments within the urban and developed watershed would have similar effects as the proposed Project. However, the past, current, and reasonably foreseeable future projects in the watershed would be required to implement similar measures when obtaining relevant permits, including compliance with the MS4 requirements and implementation construction BMPs. This would help reduce impacts to water quality and retain runoff, and as well as reduce the incremental, cumulative effects of individual projects.

Overall, potential impacts to hydrology and water quality associated with future development in the watershed and the region would not be cumulatively considerable with implementation consistent with all applicable laws, permits, ordinances and plans. Furthermore, implementation of the proposed Project would result in a reduction to cumulative impacts associated with pollutant loading in the watershed due to the fact that the proposed Project would implement BMPs that would be maintained and operated to meet design performance standards and the efficiencies needed to help meet the waste load reductions in accordance with the Rio Hondo/San Gabriel River Enhanced Watershed Management Plan (EWMP)[70]. Therefore, the incremental effect of the proposed Project related to hydrology and water quality would not be cumulatively considerable.

[70] California Water Boards – Rio Hondo/San Gabriel River Watershed Management Group. 2019. *Approved Revised Watershed Management Program.* Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/san_gabriel/rio_hondo/index.html

XI. Land Use and Planning	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
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 mitigation an environmental effect.	☐	☐	☐	☒

Environmental Setting

The Project site is within the grounds of an existing public facility, within an urbanized area in the City of Arcadia, California. The surrounding area is developed with a variety of land uses, including very low density residential, low density residential, public, and east of the Arboretum, across Baldwin Avenue, land uses are primarily regional commercial and horse racing. According to the City of Arcadia General Plan Land Use map, the Project site is zoned for Open Space – Outdoor Recreation uses[71]

Impact Analysis

Would the project:

a. Physically divide an established community?

Construction and Operation

No Impact. The proposed Project would be located on the Arboretum property, an area designated and zoned as Open Space - Recreation. The proposed Project would not physically divide an established community. Thus, no impacts would occur.

Mitigation Measures

No potentially significant impacts related to the physical division of an established community would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

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?

Construction and Operation

No Impact. The proposed Project would not conflict with applicable land use plan, policy or regulation of an agency with jurisdiction over the Project adopted for the purpose of avoiding or mitigating an environmental effect. The City of Arcadia has zoned the Arboretum as Open Space -Outdoor Recreation. Implementation of the proposed Project will not require a change in zoning designation of the Arboretum. In addition to restoration of the Lake and Pond, the proposed Project includes design

[71] City of Arcadia. 2010. *General Plan – Land Use Element.* Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/general%20plan/Land%20Use%20Element%20Update%20Final_updated%202018.pdf

features such as native landscaping and water quality improvements that support and improve the Lake and Pond wildlife habitat. These improvements comply with the City of Arcadia General Plan Land Use Policy Goal LU-9 to preserve existing natural and recreation-oriented open space area.[72]

In addition, the City of Arcadia General Plan considers the Arboretum as a Special Use Park, recreational facilities designed for a unique purpose[73] and also recognized the Arboretum as a unique cultural and historic venue[74]. The proposed Project and Project design features such as restoration of the Lake's historic cobblestone retaining wall support the General Plan's Parks, Recreation, and Community Resources Element Goal PR-9 to provide retention and stewardship of historical and cultural resources, specifically Policy PR-9.1, to encourage the maintenance and preservation of historically, culturally, and/or architecturally significant structures and sites in the community.[75]

No potentially significant impacts would occur related to any applicable land use plan, policy or agency regulation as a result of the proposed Project. Thus, no impacts would occur, and no further analysis is required.

Mitigation Measures

No potentially significant impacts related to any land use policy would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

Cumulative Impacts

As discussed above, the proposed Project would have no potentially significant impacts related to land use. No Project-level impacts would occur related to the physical division of an established community; potential conflict with land use plans, policies, or regulations; or potential conflict with an applicable habitat conservation plan or natural community conservation plan. Thus, the proposed Project would have no incremental effect related to land use and planning, and impacts would not be cumulatively considerable.

[72] City of Arcadia. 2010. *General Plan – Land Use Element.* Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/general%20plan/Land%20Use%20Element%20Update%20Final_updated%202018.pdf

[73] City of Arcadia. 2010. *General Plan – Parks, Recreation, Community Resources Element.* Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/general%20plan/Parks%20Recreation%20and%20Community%20Resources.pdf

[74] City of Arcadia. 2010. *General Plan – Parks, Recreation and Community Resources Element.* Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/general%20plan/Parks%20Recreation%20and%20Community%20Resources.pdf

[75] City of Arcadia. 2010. *General Plan – Parks, Recreation, Community Resources Element.* Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/general%20plan/Parks%20Recreation%20and%20Community%20Resources.pdf

XII. Mineral Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

Environmental Setting

Mineral resources are naturally occurring chemicals, elements, or compounds formed by inorganic processes or organic substances. These resources include bituminous rock; gold; sand; grave; clay; crushed stone; limestone; diatomite; salt; borate; potash; and geothermal, petroleum, and natural gas resources. Construction aggregate, another mineral resource, refers to sand and gravel (natural aggregates) and crushed stone (rock) that are used as Portland-cement-concrete (PCC) aggregate, asphaltic-concrete aggregate, road base, railroad ballast, riprap, fill, and the production of other construction materials.

The Surface Mining and Reclamation Act of 1975 required the State Geologist to initiate mineral land classification to help identify and protect mineral resources in areas within the state. In accordance with guidelines established by the State Mining and Geology Board, mineral deposits within the State have been classified into mineral resource zones (MRZ) based on the availability of mineral resources. Accordingly, the Project site and surrounding area is classified as MRZ-3[76] because the significance of mineral deposits cannot be determined from the available data.

The City of Arcadia General Plan does not identify any ongoing mining operations (including oil, gas, or geothermal resources) within the City of Arcadia, or mineral resource zones within the vicinity of the proposed Project site.[77] The Project site is not used for mineral extraction.

[76] City of Arcadia. 2010. *General Plan EIR – Section 4.10 Minerals*. Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/eir/MineralResources.pdf
[77] City of Arcadia. 2010. *General Plan EIR – Section 4.10 Minerals*. Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/eir/MineralResources.pdf

Impact Analysis

Would the project:

a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

Construction and Operation

No Impact. As described above, there are no known mineral resources that would be of value to the region and residents of the state, including oil, gas, or geothermal resources within the Project area, or the City of Arcadia. In addition, no mining operations are currently ongoing in the City of Arcadia.

Thus, construction and operation of the proposed Project would not result in the loss of a locally important mineral resource recovery site, as delineated on a local general plan, specific plan, or other land use plan. No construction or operational impact related to the loss of availability of a locally important mineral resource recovery site delineated in a general plan would occur. Therefore, no impacts would occur.

Mitigation Measures

No potentially significant impacts related to the loss of availability of a known mineral resource nor would implementation of the proposed Project result in potentially significant impacts related to the loss of availability of a locally important mineral resource recovery site. Therefore, no mitigation measures are required.

Cumulative Impacts

As discussed above, the proposed Project would have no impacts related to mineral resources. No Project-level impacts would occur related to the loss of availability of mineral resources of value locally, regionally, or to the state. Thus, the proposed Project would have no incremental effect related to mineral resources, and impacts would not be cumulatively considerable.

XIII. Noise	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project result in:				
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 a local general plan or noise ordinance or applicable standards of other agencies?	☐	☒	☐	☐
b. Generation of excessive ground borne vibration or ground borne 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 Noise Environment

The Project site is within the Los Angeles County Arboretum and Botanic Garden, which is bounded by Colorado Boulevard and Interstate 210 (I-210) on the north, Baldwin Avenue on the east, single-family residences and Hugo Reid Drive/Old Ranch Road on the south, and single-family residences and Golden West Avenue/Tallac Drive on the west. The closest airport to the Project site is the San Gabriel Valley Airport, located at 4233 North Santa Anita Avenue, El Monte, CA, approximately 5.3 miles south of the Project. The nearest noise-sensitive land uses are single- and multi-family residences west and southwest of Arboretum. The primary source of existing noise affecting the Project vicinity is assumed to be traffic noise from the surrounding roadways. Other notable sources of noise likely include traffic on I-210 freeway, intermittent landscaping activities, and bird calls. The Noise Modeling, Inputs, and Assumptions used in this analysis are in Appendix E.

Noise Monitoring

Existing ambient noise levels within the Project area were estimated based on U.S. Environmental Protection Agency (EPA) and Federal Transit Administration (FTA) noise guidance, which account for proximity to major noise sources as well as population density. The City of Arcadia in which the Project is located has a population density of approximately 5,187 people per square mile, suggesting a day-night noise level (L_{dn}) within the range of 55-60 dBA. The nearest major noise source to the Project area is I-210 freeway, approximately 1,840 feet to the north of the studied noise sensitive receptors. Due to the distance of I-210 freeway to these receptors, it is unlikely to significantly contribute to existing noise levels in the area. Therefore, an existing ambient noise level of 55 dBA L_{dn} is assumed to be adequately conservative for the evaluation of noise impacts. This is equivalent to a continuous sound level of 48.6 dBA across a 24-hour period.

Regulatory Setting

Federal Regulations

No federal regulations are applicable to the CEQA analysis for the proposed Project.

State Regulations

Noise

California requires each local government entity to perform noise studies and implement a noise element as part of its general plan. The purpose of the noise element is to limit the exposure of the community to excessive noise levels; the noise element must be used to guide decisions concerning land use. In addition, the State provides these guidelines[78] as a means for evaluating the compatibility of various land uses as a function of community noise exposure.

Vibration

The FTA Transit Noise and Vibration Impact Assessment Manual provides guidance for evaluating the potential for damage to buildings in the Project's vicinity due to construction activities, as well as the potential for annoyance to land uses in the Project's vicinity. The sensitive receptors in the Project area most likely to receive vibration impacts due to Project construction are single-family residences to the northwest of the Project site. FTA guidance suggests construction vibration levels (dB) be limited to 72 VdB at vibration-sensitive uses and peak-particle velocities (PPV) be limited to 0.2 inches per second (in/sec) at non-engineered timber and masonry structures.

Local (County) Regulations

Operational Noise

Exterior noise standards for community noise (i.e., noise generated on one property and propagating to another) are provided in Section 12.08.390 of the Los Angeles County Code. The noise limits depend on a number of factors, including the noise zone of the receptor, the time of day, and the duration of the noise. These standards are summarized in Table 3-8.

[78] California Office of Planning and Research. N.D. Appendix D: Noise Element Guidelines. Available at: https://opr.ca.gov/docs/OPR_Appendix_D_final.p

Table 3-8. County of Los Angeles Exterior Noise Standards

Noise Zone Land Use of Receptor Property	Time of Day	Noise Level (dBA) that May Not Be Exceeded for More than… 30 min/ hour (L_{50})	15 min/ hour (L_{25})	5 min/ hour ($L_{8.3}$)	1 min/ hour ($L_{1.7}$)	Anytime (L_{max})
Noise Zone I— Noise-sensitive areas	Anytime	45	50	55	60	65
Noise Zone II— Residential properties	7 a.m. to 10 p.m. (daytime)	50	55	60	65	70
	10 p.m. to 7 a.m. (nighttime)	45	50	55	60	65
Noise Zone III— Commercial properties	7 a.m. to 10 p.m. (daytime)	60	65	70	75	80
	10 p.m. to 7 a.m. (nighttime)	55	60	65	70	75
Noise Zone IV— Industrial properties	Anytime	70	75	80	85	90

Notes:
1. In the event that the corresponding ambient noise level (L_{50}, L_{25}, etc.) exceeds the specified standard, then the ambient noise level becomes the noise standard.
2. If the measurement location is on a boundary property between two different zones, the exterior noise standard will be the arithmetic mean of the standards of the two subject zones.
3. For any source of sound that emits a pure tone or impulsive noise, the noise standards will be reduced by 5 dB.

dBA = A-weighted sound level; L_{xx} = percentile-exceeded sound level; L_{max} = maximum sound level.

The Arboretum would be considered a commercial land use and the closest noise-sensitive receptors are residential properties. As noted in Table 3-8, if the measurement location is on a boundary property between two different zones, the exterior noise standard is the arithmetic mean of the standards of the two subject zones. Therefore, the relevant noise standard for operational noise propagating from the park to adjacent homes would be based on the arithmetic mean of the commercial and residential standards, as summarized in Table 3-9.

Table 3-9. Applicable Exterior Noise Standards at Adjacent Homes

Time of Day	Noise Level (dBA) that May Not Be Exceeded for More than… 30 min/ hour (L_{50})	15 min/ hour (L_{25})	5 min/ hour ($L_{8.3}$)	1 min/ hour ($L_{1.7}$)	Anytime (L_{max})
7 a.m. to 10 p.m. (daytime)	55	60	65	70	75
10 p.m. to 7 a.m. (nighttime)	50	55	60	65	70

Notes:
1. In the event that the corresponding ambient noise level (L_{50}, L_{25}, etc.) exceeds the specified standard, then the ambient noise level becomes the noise standard.
2. For any source of sound that emits a pure tone or impulsive noise, the noise standards will be reduced by 5 dB.

Construction

Construction noise is addressed in Section 12.08.440 of the Los Angeles County Code, which places limits both on the permitted hours of construction activities and on the maximum noise levels that may

affect nearby properties. Construction activities are not permitted during the evening/nighttime hours of 7 p.m. to 7 a.m. or at any time on Sundays or holidays, where they would create a noise disturbance across a residential or commercial real property line. The City of Arcadia Municipal Code also requires that all mobile or stationary internal combustion engine–powered equipment or machinery must be equipped with suitable exhaust and air-intake silencers in proper working order. The Project will be exempt from 12.08.

Project construction activities are expected to occur exclusively during daytime hours. However, some construction activities, such Pond dewatering, may require 24-hour operation of drain pumps and associated generators.

Local (City) Regulations

Noise

The City of Arcadia Municipal Code imposes limits exclusively on amplified noise sources (e.g., concerts or personal sound systems). Therefore, the County Noise Ordinance which is contained in the Los Angeles Code, and are described above, are used for this impact assessment.

Impact Analysis

Would the project result in:

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?

Construction

Less-than-Significant with Mitigation Incorporated. Two types of short-term noise impacts could occur during construction of the proposed Project.

- Off-site construction noise would occur from commuting workers and haul trucks transporting equipment and materials on local access roads. There would be notable single-event noise level associated with haul truck pass-by which could cause an intermittent noise nuisance. However, the effect on longer-term ambient noise levels (e.g., the daily average noise levels considered in the State's general plan guidelines) would be minimal. Therefore, short-term construction-related impacts associated with transporting equipment to the Project site would be less than significant.

- On-site construction noise during sediment removal of the Lake and Pond, removal of contaminated material and sediment, installation of new equipment, Staging Area equipment loading and unloading, and other Project elements would generally occur between the hours of 7 a.m. and 4 p.m., Monday through Friday. All internal combustion engine-powered equipment and machinery would be equipped with appropriate exhaust and air-intake silencers that would be in proper working condition. Equipment and trucks operating within the Staging Area would be equipped with white noise reverse signal alarms to be least impactful with regards to noise. The Project will construct temporary 8 to 10-foot-tall sound barriers along the western edge of the Staging Area. For purposes of conservativism, these barriers were not included in the

prediction of construction noise from the Staging Area. On-site construction phases and anticipated construction equipment are summarized in Table 3-10.

- Construction-related noise was analyzed using calculations and data from the Federal Highway Administration's Roadway Construction Noise Model[79] which predicts average and maximum noise levels at nearby receptors based on the type of equipment, the distance from source to receptor. The source-to-receptor distances used in the analyses of average noise levels (L_{eq}) were the distances between the center of the relevant construction area (e.g., Baldwin Lake, Tule Pond, or Staging Area) and the nearest noise-sensitive receptor (e.g., residential structure). Average noise levels were calculated for the worst-case construction phases, which includes all phases featuring two dozers, which are the loudest pieces of equipment proposed for Project construction, as well as the Mobilization phase, which includes the highest amount of construction activity at the Staging Area. All other phases are assumed to be quieter than phases not featuring a pair of dozers. It is noted that, per the Los Angeles County Municipal Code, a sensitive receptor for construction noise is considered to be the façade of the residential building. Details of the analysis are provided in Appendix E and summarized in Table 3-11.

[79] Federal Highway Administration. 2020. Construction Noise Model. Available at: https://www.fhwa.dot.gov/ENVIRonment/noise/construction_noise/rcnm/rcnm.cfm

Table 3-10 Construction Phasing and Equipment

Construction Phase	Duration	Equipment Type (Number of Items)
Lake and Pond Draining	3 to 4 weeks	Several water pumps (quantity unknown)
Drying Period of Lake and Pond	1 month	N/A
Mobilization	1 month	Equipment below to staging area, Trailer, barricades/delineators at closures, trucks for relocations of wildlife Work Trucks (5) Various flatbed trucks delivering Large Excavation Equipment (3 to 6)
Clear and Grub Lake and Pond	4 weeks	Excavators (3) Haul Trucks (10 to 15) Work Trucks (5) Loaders (3) Dozers (2) Backhoes (3)
Remove reinforced concrete, existing inlets and outlets	4 weeks	Excavators (3) Haul Trucks (5 to 10) Work Trucks (5) Loaders (3) Dozers (2)
Dewatering of Lake and Pond	34-38 weeks	Several water pumps (quantity unknown) Groundwater treatment system Work Trucks (1)
Excavate, transport, and dispose hazardous waste sediment from Pond	4 weeks	Excavators (3) Heavy-duty End Dump Trucks (20 to 25) Work Trucks (5) Loaders (3) Dozers (2)
Excavate, transport and dispose contaminated sediment from Lake	10-14 weeks	Excavators (3) Heavy-duty Super 10 Dump Trucks (30-35) Work Trucks (5) Loaders (3) Dozers (2
Build new structures and place reinforced concrete pipes	12 weeks	Backhoes (3) Concrete Trucks (3) Work Trucks (5)
Install river rock, water quality systems, and liner	3 weeks	Backhoes (3) Work Trucks (5)
Install landscaping hardscape, electrical systems	12 weeks	Backhoes (3) Concrete Trucks (3) Work Trucks (5)
Install signage, benches, lighting	3 weeks	Backhoes (3) Work Trucks (5)
Final inspections	2 weeks	Work Trucks (2)

Table 3-11. Construction Noise Levels and Resulting Increases in Ambient Noise

Construction Phase	Project Site Closest to Receiver(s)	L_{eq}	County Limit	Impact?	Mitigation Required
Mobilization	Staging Area	74	75	No	0
Clear and Grub Lake and Pond	Tule Pond	69	75	No	0
	Baldwin Lake	65	75	No	0
Remove reinforced concrete, existing inlets and outlets	Tule Pond	69	75	No	0
	Baldwin Lake	65	75	No	0
Remove all contaminated material and haul to approved facility	Tule Pond	69	75	No	0
	Baldwin Lake	65	75	No	0
Remove sediment from both lakes	Tule Pond	69	75	No	0
	Baldwin Lake	65	75	No	0

The results in Table 3-11 indicate that construction noise levels would be below the County's daytime construction noise level limits.

The Lake and Pond draining phase would require the operation of pumps and generators that would operate up to 24-hours per day.

Operation

Less-than-Significant Impact. Once operational, the associated new infrastructure (pump systems and pipelines) would be located underground. Regular maintenance would not be a major source of noise and would occur infrequently. This level of activity would be negligible compared to the existing ambient noise environment. Therefore, the operational noise impact of the Project would be less than significant. No mitigation is required.

The other source of noise associated with the Project would be activities at the upgraded arboretum. Most of this noise would represent a direct continuation of existing activities and, as such, would not constitute an impact. Therefore, the noise impact of operational activities at the improved arboretum would be less than significant. No mitigation is required.

Mitigation Measures

MM NOISE-1. Control of construction noise to the extent feasible through the following (or combination thereof) from the pump and generator system use for pond/lake draining activities:

1. Both the pump and generator shall be located as far away from noise-sensitive land uses as practicable.

b. Expose persons to or generate excessive ground-borne vibration or ground-borne noise levels?

Construction and Operation

Less-than-Significant Impact. Project construction can generate varying degrees of ground-borne vibration, depending on the construction procedure and the construction equipment used. These vibrations spread through the ground and diminish in amplitude with distance from the source. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low

rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels. Ground-borne vibrations from construction activities rarely reach levels that damage structures.

Construction of the proposed Project would require the use of heavy construction equipment such as a backhoe, loader, and dozer. At times, this equipment would operate within 135 feet of existing residences adjacent to the arboretum. At this distance, ground-borne vibration would be perceptible but below the annoyance threshold of 72 VdB. Vibration levels would also not be high enough to cause damage to buildings. Vibration at any specific receptor would be temporary and would diminish rapidly with distance as work moved farther away. As shown on Table 3-9, no pile driving equipment would be used. Ground-borne vibration from construction would be limited to the permitted daytime construction hours of 7 a.m. to 4 p.m., Monday through Friday and would not occur during the evening or nighttime hours when people are typically resting or sleeping. Therefore, construction vibration impacts would be less than significant. No mitigation is required.

Once operational, the Project would not include any vibration-generating features. Therefore, there would be no impact with respect to ground-borne vibration from Project operation. No mitigation is required.

Mitigation Measures

No potentially significant impacts related to ground-borne vibrations during construction and operation would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

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?

Construction and Operation

No Impact. The proposed Project is not located within an airport land use plan, within 2 miles of a public airport or public use airport or in the vicinity of a private airstrip. The nearest major public airport is the Burbank Hollywood Airport over 18 miles northwest of the Project site. The closest airport to the Project site is the San Gabriel Valley Airport, located at 4233 North Santa Anita Avenue, El Monte, CA, approximately 3 miles south. Aircraft overflights may be audible at the Project site, but the project site is well outside the 65 dB CNEL noise contour associated with existing aviation noise from operations at the San Gabriel Airport. [80]

As a result, people at the Project site would not be exposed to excessive noise from aircraft and no impact would occur.

Mitigation Measures

The Project site is not located in the vicinity of any public or private airstrip. In addition, the proposed Project would have no effect on operations at any airstrip and would not cause any change related to existing aircraft noise levels. Therefore, no impact would occur.

[80] County of Los Angeles. 2022. A-NET. L.A. County's Airport Land Use Commission Site. Available at: https://lacounty.maps.arcgis.com/apps/webappviewer/index.html?id=acf2e87194a54af9b266bf07547f240a.

Cumulative Impacts

The primary factor for cumulative noise impact analysis is the consideration of future traffic volumes. Non-transportation noise sources (e.g., Project operation) and construction noise impacts are typically project specific and highly localized. As there are no related projects within 0.5 mile of the Project site, the low traffic volumes associated with construction of the proposed project would produce very low noise levels, which would be negligible when compared to the existing or future traffic noise in the area. In addition, construction and operation activities associated with the proposed Project would not contribute temporarily or permanently to the noise or ground borne vibration levels in the cumulative noise environment. Therefore, the incremental effect of the proposed Project related to operational traffic noise would not be cumulatively considerable. Thus, the incremental effect of the proposed Project related to on-site operational noise would not be cumulatively considerable.

XIV. Population and Housing	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Induce substantial unplanned 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 a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Environmental Setting

The City of Arcadia has a total area of 11 square miles and is developed with single- and multi-family residences as well as both commercial and industrial uses. The community's population experienced very little growth from 2010 to 2020, as it grew less than 1% over that time period, and since 2020 the population has decreased approximately 3 percent.[81]

Impact Analysis

Would the project:

a. Induce substantial unplanned 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 a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?

Construction and Operation

No Impact. The proposed Project would be located at the Arboretum, an area designated and zoned for open space within the City of Arcadia and the proposed Project is consistent with the existing open space uses. The proposed Project will improve existing features at the Arboretum. These proposed improvements do not include the addition of new homes or businesses, displacement of housing units and people, nor require replacement housing. Therefore, no impacts would occur.

Mitigation Measures

No potentially significant impacts related to substantial population growth, displacement of existing housing units nor the displacement of people would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

[81] United States Census. 2022. *Quick Facts Arcadia city, California.* Available at: https://www.census.gov/quickfacts/fact/table/arcadiacitycalifornia

Cumulative Impacts

As discussed above, the proposed Project would have no impacts related to population and housing. No Project-level impacts were identified related to substantial population growth, displacement of housing units, or displacement of people. Thus, the proposed Project would have no incremental effect related to population and housing, and impacts would not be cumulatively considerable.

XV. Public Services	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
1. Fire protection?	☐	☐	☐	☒
2. Police protection?	☐	☐	☐	☒
3. Schools?	☐	☐	☐	☒
4. Parks?	☐	☐	☐	☒
5. Other public facilities?	☐	☐	☐	☒

Environmental Setting

Public services in the Project vicinity include police and fire facilities, Hugo Reid Elementary School and Hugo Reid Primary School and Hugo Reid Park. The City of Arcadia maintains its own fire and emergency medical services, and police departments. The nearest City of Arcadia Fire Department station to the Project site is Station 106, located at 630 South Baldwin Avenue, approximately one mile south. The Arcadia Police Department is located approximately 2 miles east of the Project site, at 250 West Huntington Drive. Two Arcadia Unified School District Schools are less than one-half mile each from the Project site: Hugo Reid Primary School, 1153 De Anza Place, and Hugo Reid Elementary School, 1000 Hugo Reid Drive. Hugo Reid Park is adjacent to Hugo Reid Primary School. The City of Arcadia and the Arcadia Unified School District have a joint-use agreement to allow use of recreational facilities on school property.[82] The Arcadia Public Library is approximately 1.5-miles southeast of the Project site at 20 West Duarte Road. The Los Angeles County Library – Live Oak Branch is over 3 miles from the Project site at 4153 East Live Oak Avenue. Other public facilities include the City of Arcadia operated Ruth and Charles Gilb Museum of Arcadia Heritage at 380 West Huntington Drive, approximately one mile southeast of the Project site. Adjacent to the Gilb Museum is the City of Arcadia Community Center/Senior Center, at 365 Campus Drive. Also, the Arcadia Community Regional Park is within one mile of the Project site, at 405 South Santa Anita Avenue. This facility is operated and maintained by DPR.

[82] City of Arcadia General Plan. 2010. *Parks, Recreation, and Community Resources Element.* Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/general%20plan/Parks%20Recreation%20and%20Community%20Resources.pdf

The Arboretum is zoned Open Space – Recreation and the City of Arcadia General Plan considers the Arboretum to be a *Special Use* park facility which are recreational facilities designed for a unique purpose that meets specialized community needs.[83]

Impact Analysis

Would the project?

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

1. Fire protection?

2. Police protection?

Construction and Operation

No Impact. The proposed project does not include new housing or non-residential development that would increase the residential or employee populations in the area resulting in population growth; thus, the demand for fire and police protection would not increase. The proposed Project would involve improvements to existing water features at the Arboretum and would not require the construction of new or expanded fire and police services or facilities. No habitable structures would be constructed as part of the Project. As such, the proposed Project would not require the construction of additional fire or police protection facilities or expansion of existing facilities. Therefore, the proposed Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered fire or police protection facilities, or the need for new or physically altered police protection facilities. No impacts would occur.

Mitigation Measures

No potentially significant impacts related to fire and police services would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

3. Schools?

Construction and Operation

No Impact. As described above, one school is located within 0.50 miles of the Project site. However, the demand for new or expanded school facilities is generally associated with an increase in housing or population. The proposed Project does not include development of any residential uses, so no direct increase in residential population would occur. Construction workers are anticipated to be drawn from the existing regional workforce. As such, construction of the proposed Project would not generate new permanent residents that would increase the demand for schools. Additionally, the proposed Project improves existing features of the Arboretum and would not directly or indirectly induce population

[83] City of Arcadia General Plan. 2010. *Parks, Recreation, and Community Resources Element.* Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/general%20plan/Parks%20Recreation%20and%20Community%20Resources.pdf

growth. Therefore, the proposed Project would not result in substantially adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools. No impact would occur.

Mitigation Measures

No potentially significant impacts related to schools would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

4. Parks?

Construction

Less-Than-Significant Impact. While the proposed Project would be located within a facility zoned for open space and recreation and classified as a type of park facility by the City of Arcadia, construction activities would not result in substantial adverse physical impacts to the facility. It is anticipated that the Arboretum will remain open to the public during construction. However, access around the Pond and Lake, including lawns, walking paths and seating areas would be removed from service. Screening would be utilized to minimize views of construction activities, staging, and storage areas and this may block views of the Pond and Lake. As construction would primarily occur when the Arboretum is open to the public, construction noise may be heard by visitors. Therefore, construction of the proposed Project could temporarily limit the full usage of the Arboretum as construction would prevent access to areas of the Arboretum typically available to visitors. However, this limited access is not anticipated to increase demand and use on other parks and recreational resources in the Project area. Construction of the proposed Project would be temporary, and impacts would be less than significant. No mitigation is required.

Operation

Less-Than-Significant Impact. The proposed Project is expected to accommodate existing Arboretum visitors. As described, in Chapter 2, Project Description, Arboretum attendance is anticipated to remain at approximately 700,000 visitors annually. Recent improvements at the Arboretum[84] which includes parking, supports the anticipated annual visitors. The proposed Project will provide substantial improvements to well-known cultural and historical features of the Arboretum that will enhance the visitor experience. The Project would not directly induce population growth, and operational impacts are not expected to result in substantial adverse physical impacts related to new or physically altered parks or recreational facilities. Therefore, operation of the proposed Project would result in less than significant impacts. No mitigation is required.

Mitigation Measures

No potentially significant impacts related to parks would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

[84] Los Angeles County Arboretum and Botanic Garden. 2023. *Visitor Plaza Opens.* Available at: https://www.arboretum.org/the-visitor-plaza-campaign/

5. Other public facilities?

Construction and Operation

No Impact. The proposed Project would not result in impacts on other public facilities. Physical impacts on public services are usually associated with population changes, which can change the demand and funding for facilities. The proposed Project involves improvements to existing water features at an existing public facility and does not include any development that would lead to population growth. Additionally, as previously described, construction and operation of the proposed Project would not general new permanent residents that would increase the demand for other public facilities. Therefore, the proposed Project would not result in an increased demand requiring new or physically altered public facilities; no construction or operational impact would occur.

Mitigation Measures

No potentially significant impacts related to public services would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

Cumulative Impacts

There are no related Projects within a 0.5-mile radius of the proposed Project site. The proposed Project would have a negligible impact on public services. Thus, the incremental effect of the proposed Project related to public services would not be cumulatively considerable.

XVI. Recreation	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. 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. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

Environmental Setting

The City of Arcadia has several park facilities within 1 mile of the proposed Project site, which provide recreational and community services. Table 3-12 provides an overview of these facilities.

Table 3-12. Recreational Resources within 1 Mile of the Project Site

Park/Recreation Resource	Location	Description	Location Relative to the Project
Hugo Reid Park	Michilinda Ave & Hugo Reid Dr (adjacent to Hugo Reid Primary School)	A 6.79-acre park that includes a baseball field, batting cage, concession stand, play area, tennis courts, and restrooms.	0.50 mile west
Orange Grove Park	Corner of Baldwin Ave. & Orange Grove Ave.	A 2.66-acre park with tennis courts and picnic tables	0.95 mile north
Forest Avenue Park	132 Forest Ave.	A .26-acre mini park with barbecues and picnic tables.	0.99 mile northwest
Tripolis Friendship Park	Goldenwest Ave. & Fairview Ave	A .34-acre mini park with barbecues, picnic tables, and play area	0.75 mile west
Fairview Avenue Park	542 Fairview Ave.	A .91-acre mini park with barbecues and picnic tables.	0.75 mile south
Arcadia Community & Senior Center	365 Campus Dr.	A 4.98-acre city facility that offers recreation classes, rentable ballrooms, bike racks, senior services and restrooms.	0.91 mile southeast
Civic Center Field	240 W. Huntington Dr.	A 2.24-acre athletic field with lights and restrooms.	0.90 mile east

Source: City of Arcadia General Plan

Impact Analysis

Would the project:

a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?

Construction and Operation

No Impact. As described above in Section XV, Public Services, the closest recreational park to the Project site is Hugo Reid Park, 0.50-miles west at Michilinda Avenue and Hugo Reid Drive. The proposed Project would not impact Hugo Reid Park, or any other recreational facilities. The proposed Project involves improvements to existing water features, the Lake and Pond, at the Arboretum with no permanent increase in water supply. Construction workers are anticipated to be largely drawn from the existing regional workforce, and no additional workers would be required for operation of the proposed Project. Neither construction nor operation of the proposed Project would generate new permanent residents that would increase the use of existing parks and recreational facilities. Therefore, the proposed Project would not 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 would occur.

Mitigation Measures

No potentially significant impacts related to physical deterioration of the recreational resources would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

b. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

Construction and Operation

No Impact. The proposed Project does not include construction or expansion of recreational facilities. Although the proposed Project is located within an existing public facility, it involves improvements to existing water features, the Lake and the Pond, on the facility grounds. These water features support habitat, provide storm drain infiltration, and cultural and educational context at the Arboretum. While there are numerous recreational walking paths and benches around these water features that allow visitors to enjoy the views and observe wildlife, no recreational water activities are permitted nor would be permitted once the Project is completed. Construction activities will temporarily impact access to the walking paths and benches adjacent the Lake and Pond, however, access would be restored once the Project is completed.

The proposed Project is not intended to substantially or permanently increase the number of annual visitors to the Arboretum and would not induce growth that could require the construction or expansion of recreational facilities. No impact would occur.

Mitigation Measures

No potentially significant impacts related to recreational resources would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

Cumulative Impacts

As discussed above, the proposed Project would have no potentially significant impacts related to recreational facilities. No Project-level impacts were identified related to increased use of the Arboretum other recreational facilities in the area. In addition, no Project-level impacts were identified related to the inclusion, construction, or expansion of recreational facilities. The improvements will improve existing features to improve habitat and water quality and are not intended to draw in substantially more new users to the Arboretum or directly induce population growth in the area. Thus, the proposed Project would have no incremental effect related to recreation, and impacts would not be cumulatively considerable.

XVII. Transportation and Traffic	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
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 Section15064.3, 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?	☐	☐	☒	☐

Environmental Setting

The Project site is located in the City of Arcadia, California. The roadways in the Project vicinity include principal travel corridors such as Baldwin Avenue and Huntington Drive, secondary travel corridors such as Colorado Boulevard, with I-210 being a key regional travel corridor. Principal travel corridors are typically four travel lanes in each direction (with the exception of Huntington Drive, which is eight lanes) and have the capacity to carry the highest volumes of vehicles, between 22,000 to 35,000 daily[85]. Secondary travel corridors are two to four travel lanes and have the capacity to carry volumes of 10,000 to 18,000 vehicles daily.[86]

Bus service in the Project vicinity is provided by Los Angeles Metropolitan Transportation Authority (Metro) and Foothill Transit. Metro Local Line 268 runs along Baldwin Avenue; two bus stops are located on Baldwin Avenue just south of I-210, and two are located further south on Baldwin Avenue at the Gate 7 entrance to Santa Anita Park racetrack.[87] Foothill Transit Line 187 runs along Huntington Drive just south of the Arboretum.[88] In addition to regional bus service, the City of Arcadia operates Arcadia Transit[89] which provides Fixed Route Service and Dial-A-Ride Service. The Fixed Route Service provides general public transit service on three bus lines of which the Green Line operates along Huntington Drive and Baldwin Avenue with a stop at the Arboretum.

[85] City of Arcadia. 2010. *General Plan 2035 – Circulation and Infrastructure Element.* Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/general%20plan/Circulation%20and%20Infrastructure.pdf

[86] City of Arcadia. 2010. *General Plan 2035 – Circulation and Infrastructure Element.* Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/general%20plan/Circulation%20and%20Infrastructure.pdf

[87] Los Angeles Metropolitan Transportation Authority. 2023. *268 Metro Local Line.* Available at: https://www.metro.net/riding/schedules/?line=268-13168

[88] Foothill Transit. 2023. *Line 187: Azusa -Arcadia – Pasadena.* Available at: https://www.foothilltransit.org/line/187

[89] City of Arcadia. 2023. *Arcadia Transit.* Available at: https://www.arcadiaca.gov/shape/development_services_department/transportation_services/arcadia_transit.php

No bicycle lanes are included along the principal or secondary corridors within the Project area[90]. Several streets within the residential area directly west of the Arboretum are classified as Class III bike lanes or streets[91] however, neither Baldwin Avenue, Colorado Boulevard, Old Ranch Road nor Vaquero Road, are designated bicycle streets.

Sidewalks are present along the entire extent of Baldwin Avenue. A pedestrian crosswalk is located at the intersection of Baldwin Avenue and Gate 7. There are no sidewalks along Colorado Street, Old Ranch Road or Vaquero Road.

The Arboretum provides off-street surface parking lots for visitors and employees; these lots are accessible only from Baldwin Avenue.

Impact Analysis

Would the project:

a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Construction and Operation

Less-than-Significant Impact. The Arcadia Transit Green Line Bus route has a stop at the Arboretum, and Metro Bus Line 268 has four stops along Baldwin Avenue from the I-120 south to the Gate 7 Entrance of Santa Anita Park racetrack. The streets adjacent to the Arboretum are not designated bicycle streets, and sidewalks and signalized crosswalks are limited to Baldwin Avenue.

As described in Chapter 2, Project Description, and shown on Figure 2-6 Construction Staging Area and Haul Route, a temporary construction staging and laydown area will be located on a 1-acre site on Arboretum property and will be accessed from the south side of the Arboretum. As shown on Figure 2-6, Construction Staging Area and Haul Route, movement of construction equipment, personnel, and materials from the staging area to the Pond and Lake will occur on the paved road within the Arboretum. No closures of residential streets adjacent to the Arboretum would be required during construction. There are several designated truck routes within the City of Arcadia in the vicinity of the Project site including Baldwin Avenue, Santa Anita Avenue, Foothill Boulevard (east of Santa Anita Avenue), Colorado Street/Colorado Place, and Huntington Drive.[92] It is anticipated that construction vehicles will utilize the I-210 freeway and principal and secondary travel corridors such as Baldwin Avenue, Huntington Drive and Colorado Street/Colorado Place to access the I-210 freeway. Because these streets are designated truck routes and accommodate large volumes of traffic, the temporary increase in truck traffic would not increase vehicle capacity beyond current capacity. As described in Section IX, Hazards and Hazardous Materials, construction of the proposed Project will require the transport of hazardous and non-hazardous sediment and non-hazardous construction waste to area landfills, via local and regional freeways, and would comply with all federal, state, regional and local

[90] City of Arcadia. 2010. *General Plan 2035 – Circulation and Infrastructure Element.* Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/general%20plan/Circulation%20and%20Infrastructure.pdf

[91] City of Arcadia. 2010. *General Plan 2035 – Circulation and Infrastructure Element.* Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/general%20plan/Circulation%20and%20Infrastructure.pdf

[92] City of Arcadia. 2010. *General Plan 2035 Program EIR – Section 4.15 Transportation.* Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/eir/Transportation.pdf

requirements for the transport of hazardous materials. In addition, construction of the proposed Project would not impact existing transit facilities such as bus stops, bike lanes, or sidewalks. Although full road closures are not anticipated during construction, as described in Chapter 2, Project Description, as part of construction management BMPs, reasonable advance notification (e.g., flyers) will be provided to fire, police, and emergency medical services, local residences, homeowners and businesses adjacent to, and within areas potentially affected by the proposed Project of any road and parking restrictions in their vicinity. These disruptions would be temporary and relatively short-term and would not represent a conflict with an applicable plan, ordinance, or policy addressing the circulation system. In addition, a traffic management plan (TMP) would be implemented during the construction phase.

Following Project completion, all roads would return to pre-construction conditions, and operation of the proposed Project would require only periodic maintenance activities, which would not represent a conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Impacts related to planned circulation systems would be less than significant during construction and operation of the proposed Project. No mitigation is required.

Mitigation Measures

No potentially significant impacts related to a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Therefore, no mitigation measures are required.

b. Conflict or be inconsistent with CEQA Guidelines Section15064.3, subdivision (b)?

Construction and Operation

No Impact. CEQA Guidelines Section15064.3 (b) establishes vehicle miles traveled (VMT) as the most appropriate measure of transportation impacts. VMT refers to the amount and distance of automobile travel attributable to a Project. The Los Angeles County Transportation Impact Analysis Guidelines[93] establish instructions and standards for preparation of transportation assessment for District projects. The VMT assessment is intended to focus on the long-term, permanent transportation impacts related to the generation of automobile trips and the opportunities for alternative modes of transportation (public transit, walking, bicycling) associated with a development project. Due to the temporary and relatively low-level nature of traffic generated by the Project's construction, VMT assessments are not relevant for the Project, especially because there would be no increase in post-construction operation trips. In addition, a traffic management plan would be implemented during the construction phase. As such, neither construction nor operation of the proposed Project would generate additional VMT, and the proposed Project would not conflict with applicable congestion management programs or be inconsistent with CEQA Guidelines 15064.3 (b). No impacts would occur.

Mitigation Measures

No potentially significant impacts related to conflict with CEQA Guidelines Section15064.3 (b) would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

[93] Los Angeles County. 2020. *Transportation Impact Analysis Guidelines.* Available at: https://pw.lacounty.gov/traffic/docs/Transportation-Impact-Analysis-Guidelines-July-2020-v1.1.pdf

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

Construction and Operation

Less-than-Significant Impact. The proposed Project would not include any new or altered roadways. Construction activities would result in short-term impacts to traffic flow on adjacent streets such as Old Ranch Road and Vaquero Road for haul trucks, delivery of equipment, and Project personnel access to the Arboretum but road closures during construction are not anticipated. As described in Section XVII, a, above, as part of construction management BMPs, prior to construction, reasonable advance notification (e.g., flyers) will be provided to fire, police, and emergency medical services, local residences, homeowners and businesses adjacent to, and within areas potentially affected by the proposed Project of any road and parking restrictions in their vicinity. In addition, a traffic management plan would be implemented during the construction phase. Once construction is completed, traffic flow on these specific streets would be similar to existing conditions. Impacts would be less than significant. No mitigation is required.

Mitigation Measures

No potentially significant impacts related to hazards due to a geometric design feature or incompatible uses would occur. Therefore, no mitigation measures are required.

d. Result in inadequate emergency access?

Construction

Less-than-Significant Impact. Construction of the proposed Project would not result in inadequate emergency access. No road closures or road detours are anticipated during Project construction. However, emergency access along Baldwin Avenue could potentially be impacted during construction as this is the primary street that will be used by construction trucks, equipment and personnel to access the Project site. A traffic management plan will be implemented during the construction phase as part of the Project. As described previously, as part of construction management BMPs, reasonable advance notification (e.g., flyers) will be provided to fire, police, and emergency medical services, local residences, homeowners and businesses adjacent to, and within areas potentially affected by the proposed Project of any road and parking restrictions in their vicinity to reduce traffic flow disruptions including emergency access during construction and would ensure impacts related to emergency access would be less than significant. No mitigation is required.

Operation

No Impact. Once construction is completed, traffic flow and access on Old Ranch Road and Vaquero Road would be returned to pre-construction condition and emergency access would not be restricted. No impacts would occur.

Mitigation Measures

During construction, impacts related to emergency access would be less than significant. Additionally, upon construction completion, no impacts to emergency access occur as a result of the proposed Project. Therefore, no mitigation measures are required.

Cumulative Impacts

There are no related projects within a 0.5-mile radius, as identified in Chapter 2, Project Description. The County of Los Angeles Traffic Impact Analysis Report Guidelines identify thresholds, above which a project-specific traffic analysis is required. Because the proposed Project would not generate trips in excess of these thresholds, and therefore would not warrant a detailed traffic analysis, the contribution of the proposed Project to existing and future congestion levels would be minor. Thus, the incremental effect of the proposed Project related to traffic operations would not be cumulatively considerable.

No Project-level impacts related to traffic patterns, hazards due to geometric design features (e.g., sharp curves, dangerous intersections), incompatible transportation uses, or transit, bicycle, or pedestrian facilities would occur. Less than significant impacts to traffic flow on surround streets may occur during construction of the Project due to construction equipment movement and personnel access. However, construction level BMPs include a Traffic Management Plan which will notify residents and local emergency services of local road and parking restrictions. Therefore, the incremental effect of the proposed Project would not be cumulatively considerable.

The proposed Project, and other past, present, and reasonably foreseeable future projects, are responsible for generating vehicle trips on roadways that are also used by emergency service providers. Given that the proposed Project would contribute a small number of vehicle trips during peak commute hours such that no Project-specific analysis was required pursuant to the County of Los Angeles Traffic Impact Analysis Report Guidelines, the incremental effect of the proposed Project related to emergency access would not be cumulatively considerable.

XVIII. Tribal Cultural Resources	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section Section21074 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.	☐	☒	☐	☐

Environmental Setting

The information in this section is from the Cultural Resources Assessment prepared for the Project (Appendix C), and Native American consultations by the District and Native American tribes in accordance with Assembly Bill 52 (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. Results of the AB 52 consultation for the Project is provided in Appendix D.

As of July 1, 2015, California Assembly Bill 52 (AB 52) was enacted and expanded CEQA by establishing a formal consultation process for California tribes within the CEQA process. The bill specifies that any Project may affect or cause a substantial adverse change in the significance of a tribal cultural resources would require a lead agency to "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." Section 21047 of AB 52 also defines a new category of resources under CEQA called "tribal cultural resources." Tribal cultural resources are defined as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and is either listed on or eligible for the California Register of Historical Resources or a local historic register, or if the lead agency chooses to treat the resources as a tribal cultural resource.

On February 19, 2016, the California Natural Resources Agency proposed to adopt and amend regulations as part of AB 52 implementing Title 14, Division 6, Chapter 3 of the CCR, CEQA Guidelines, to include consideration of impacts to tribal cultural resources pursuant to Government Code Section

11336.6. On September 27, 2016, the California Office of Administrative Law approved the amendments to Appendix G of the CEQA Guidelines and these amendments are addressed within this environmental document.

The Project site lies within the historic territory of the Native American group known as the Gabrieleño. Following the Spanish custom of naming local tribes after nearby missions, these people were called the Gabrieleño, Gabrieliño, or San Gabrieleño in reference to Mission San Gabriel Arcángel. Gabrieleño consist of a number of bands, some of whom refer to themselves as *Tongva*, and others who refer to themselves as *Kizh*. The Gabrieleño territory included the Los Angeles Basin (including the watersheds of the Los Angeles, San Gabriel, and Santa Ana Rivers), the coast from Aliso Creek in the south to Topanga Creek in the north, and three Channel Islands. The Gabrieleño followed a hunting and gathering subsistence and maintained permanent villages along the major streams in the area. Nine important ethnohistoric villages were located within the San Gabriel Valley, with the Gabrieliño community *Aleupkinga* located on the grounds of the Rancho Santa Anita which today is the site of the Arboretum.

In compliance with AB 52, AECOM contacted the NAHC on behalf of the District on June 15, 2023, requesting a search of the SLF and a listing of potentially interested Native American groups and individuals. The NAHC responded on July 17, 2023, stating that a search of the SLF was positive and to contact the Gabrieleño Band of Mission Indians – Kizh Nation.

On September 7, 2023, Project notification letters with invitations to consult on the Project per AB 52 were sent by email with delivery confirmation to representatives of the following tribes:

- Chumash Band of Mission Indians
- Fernandeño Tataviam Band of Mission Indians
- Gabrieleño Band of Mission Indians–Kizh Nation
- Gabrielino-Tongva Indians of California
- Gabrielino/Tongva Nation
- Gabrielino-Tongva Tribe
- Gabrieleno-Tongva San Gabriel Band of Mission Indians
- San Manuel Band of Mission Indians
- Santa Rosa Band of Cahuilla Indians
- Soboba Band of Luiseño
- Tejon Indian Tribe

In accordance with PRC Section 21080.3.1(b)(2), the tribes were provided 30 days to request consultation. The request to consult response window closed on October 8, 2023.

During that time, written responses were received from Chairman Andrew Salas of the Gabrieleño Band of Mission Indians—Kizh Nation; Jamie Nord of the San Manuel Band of Mission Indians; Sarah Brunzell of the Fernandeño Tataviam Band of Mission Indians; and Christina Conley of the Gabrielino-Tongva Indians of California.

The San Manuel Band of Mission Indians declined consultation in an email dated September 18, 2023, and the Fernandeño Tataviam Band of Mission Indians declined consultation in an email dated September 19, 2023.

The Gabrieleño Band of Mission Indians—Kizh Nation (Kizh Nation), Mr. Andrew Salas and Ms. Christina Swindall Martinez, received the formal notification and AB 52 consultation request letter on September 13, 2023. On September 15, 2023, the Kizh Nation requested formal consultation in an email. The District began consultation coordination with the Kizh Nation via e-mail starting on September 28, 2023, through October 10, 2023, and received confidential information regarding tribal cultural resources at the proposed Project site over e-mail on October 12, 2023. On November 16, 2023, the District continued the email consultation with additional District representatives and DPR) representatives and scheduled a follow-up teleconference for November 28, 2023. Due to a schedule conflict for the Kizh Nation, the meeting was rescheduled and the teleconference was held on November 29, 2023, with the Kizh Nation, the District, and DPR. On June 18, 2024, the District shared draft mitigation measures for the Project to the Kizh Nation via email; subsequently, the Kizh Nation responded on June 19, 2024, with a number of requested edits to the mitigation measures to safeguard their tribal cultural resources. The District responded with edits on June 25, 2024, and the Tribe called and left a voicemail to state their emails were down, but they received the email and would get back to the District soon. The Kizh Nation and the District exchanged additional emails on June 26 through August 6, 2024, with minor edits to the mitigation measure language to clarify the tribal monitors will be invited prior to any ground-disturbing activities on soils and describing the distinction between the archaeological element and the tribal cultural resources element. In the District's email on August 6, 2024, the District also clarified that mitigation measures are not Tribe specific, and we refer to the Native American Heritage Commission to determine the Most Likely Descendent per PRC Section 5097.98, if Native American human remains and/or associated grave goods are discovered at the Project site. On August 6, 2024, the Kizh Nation responded via email restating the mitigation measures do not adequately protect their tribal cultural resources and attached the same mitigation measure language that was shared on November 28, 2023. The District has considered all information provided by the Kizh Nation during the consultation for the Project, but after acting in good faith and in consideration of the Tribe's requests and multiple rounds of emails and edits to the draft mitigation measures, the District concludes that a reasonable effort has been put forth and the District and the Tribe have been unable to reach a mutual agreement regarding the mitigation measure language (PRC Section 21080.3.2(b)). A letter was sent via certified mail to Mr. Andrew Salas of the Gabrieleño Band of Mission Indians—Kizh Nation on October 28, 2024, concluding consultation pursuant to PRC Section 21080.3.2(b). The AB 52 consultation with the Gabrieliño Band of Mission Indians – Kizh Nation was closed on October 28, 2024.

The Gabrielino-Tongva Indians of California, Ms. Christina Conley, received the formal notification and AB 52 consultation request letter on September 15, 2024, and responded to the District via email on October 1, 2023 expressing the need for a Native American Monitor to be present at the Project site. The District followed up with the Tribe via email on November 16, 2023 to inform them that mitigation measures, including a tribal monitor, will be incorporated in the Project for ground disturbing events. The District followed up with the Tribe via email from January 29 to February 27, 2024, and on February 27, 2024, the Tribe responded via email restating a monitor is required. The District followed

up with the Tribe on February 29, 2024 to schedule the consultation via teleconference or email. Additional emails and phone calls were exchanged by the District and the Tribe from March 11, 2024, through April 18, 2024, to coordinate the consultation and exchange of additional information. On April 18, 2024, the Tribe responded via email to schedule a call the following week. After additional voicemails and emails (April 23 and 25, 2024), the Tribe and the District held a teleconference with Ms. Christina Conley (Gabrielino-Tongva Indians of California) and Grace Komjakraphan-Tek (District) to discuss the Project and cultural significance of the site to the Tribe. There were additional coordination emails sent on May 10 and 23, 2024, and on June 18, 2024, and the District shared draft mitigation measures for the Project to the Gabrielino-Tongva Indians of California via email; subsequently, the Tribe responded on the same day stating no additional comments on the mitigation measures. On July 3, 2023, the District emailed an updated set of mitigation measures with revisions to MM TCR-1 to the Tribe and did not hear back on the revised language. A letter was sent via certified mail to Ms. Christina Conley of the Gabrielino-Tongva Indians of California on October 28, 2024, concluding consultation pursuant to PRC Section 21080.3.2(b). The AB 52 consultation with the Gabrielino-Tongva Indians of California was closed on October 28, 2024.

Impact Analysis

Would the project:

a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of 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

Construction

Less-than-Significant Impact with Mitigation Incorporated. Tribal cultural resources include sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe. As discussed previously in Section V(a)(b), based on the assessment of historical resources in relation to the Project APE, there would be no adverse change in the significance of a historical resource, including those eligible for listing in the CRHR or a local registrar.

As previously described in Section V, Cultural Resources, the Project area sits on land known to be associated with prehistoric Native American village, and multiple excavations have produced Native American artifacts. Further, the Project site meets the cultural resources eligibility criteria for listing in the CRHR, which includes tribal cultural resources. Therefore, the Project area is considered potentially sensitive for tribal cultural resources. While the Cultural Resources Assessment for this Project did not identify any new, previously unknown cultural resources, including tribal cultural resources at the Project site, that does not preclude tribal cultural resources being encountered during construction activities. Implementation of MM TCR-1, MM TCR-2 and MM TCR-3, impacts to a listed or eligible resource under CRHR or a local register as defined under PRC Section 5020.1(k) which includes tribal resources would reduce impacts to less than significant.

Operation

Less-than-Significant Impact. As described previously in Section V, Cultural Resources, upon completion, operation of the Project would require periodic maintenance of the filtration equipment, regular removal of surface debris from the Lake and Pond, and regular maintenance of surrounding landscape and vegetation, all of which are similar to on-going maintenance activities of the Arboretum. Although the Project involves installing new filtration equipment that was not in place previously and will require periodic maintenance, it is not anticipated that maintenance of the new filtration equipment, or any other maintenance activities that result from Project implementation would result a substantial adverse change to any tribal cultural resource beyond what currently exists during routine maintenance activities at the Arboretum. Therefore, operational impacts to TCRs as defined in PRC Section21074, that is listed or eligible for listing in the CRHR, or local historical register as defined in PRC Section 5020.1(k) is less than significant. No mitigation is required.

Mitigation Measures

MM TCR-1: P W shall invite a Native American monitor from Tribe(s) that have engaged in consultation and requested monitoring prior to the commencement of any ground-disturbing activity in native soils, in conjunction with a U.S. Secretary of Interior (SOI) qualified archaeologist and will provide compensation for the Native American monitor for their time spent. The Native American monitor(s) should be members of the Tribe(s) they represent. A monitoring agreement between each of the monitoring tribe(s) and P W will be prepared prior to ground-disturbing activities in native soils.

The Native American monitor(s) will work with the Project's qualified archaeologist during ground-disturbing activities, identify potential Native American Tribal Cultural Resources (TCRs), and communicate concerns regarding TCRs directly to PW and DPR). Additionally, the tribal representatives shall attend the preconstruction cultural resources awareness meeting and will be given the opportunity to provide TCR awareness training to all Project personnel, in cooperation with the qualified archaeologist prior to the start of construction.

The Native American monitor(s) shall maintain ongoing collaborative consultation with the qualified archaeologist during ground-disturbing activities. Ground-disturbing activities include, but are not limited to, clearing, grubbing, grading, potholing, tree removal, boring, drilling, demolition, pavement removal, excavation, trenching and, in certain circumstances, auguring work in native soils. As designated by the qualified archaeologist, Native American monitoring will not be required for augering depths, which have no potential for yielding tribal cultural resources. Native American monitoring will not be required for augering depths, as designated by the qualified archaeologist, which have no potential for yielding tribal cultural resources. Native American monitoring will not be required for work activities that include the demolition and removal of hardscaping material such as existing concrete, asphalt pavement, and pavement base layers.

The Native American monitor(s) will complete daily monitoring logs that will provide descriptions and locations of relevant ground-disturbing activities, construction activities performed, soil types, cultural-related materials, and any other facts, conditions, materials, or discoveries of significance to the Tribe(s). The monitoring logs will identify and describe any discovered TCRs and/or Native American human remains and burial goods and will be provided to P W and DPR at the end of ground-disturbing activities. Monitoring logs will be kept confidential with the Project records.

The Native American monitor(s) shall have the ability to notify and coordinate with the qualified archaeologist, who has the authority to temporarily stop work and identify a stop work radius, if they find a cultural resource that may require further identification, recordation, and evaluation. If the cultural resource is determined to be of Native American origin, the monitoring Tribe(s) will assess and develop appropriate handling and treatment measures. Ground-disturbing activity within the stop work radius will remain on hold until the discovered TCR has been fully assessed by the Native American Tribe(s) and authorization to resume work has been granted by the qualified archaeologist. Work may continue on other parts of the Project outside of the stop work zone while consultation and treatment are conducted.

On-site tribal monitoring shall conclude when the Tribe(s) and qualified archeologist determine and provide written confirmation that all ground-disturbing activities with the potential to impact TCRs on the Project site or in connection with the Project are complete.

MM TCR-2: A Tribal Cultural Resource (TCR) is a site, feature, place, cultural landscape, sacred place or object, which is of cultural value to a Tribe(s) AND either: On or eligible for the California Historic Register or other local historic register, OR the lead agency, at its discretion, chooses to treat the resource as a TCR. See: PRC 21074(a)(1)(A)-(B).

Upon discovery of any TCR or potential TCR, all construction activities in the immediate vicinity of the discovery shall cease within a radius deemed appropriate by the SOI qualified archaeologist and Native American monitor(s). If the qualified archaeologist in consultation with the Native American monitor(s), as appropriate, determines that the find does not represent a potentially significant cultural resource, work may resume immediately and no agency notifications are required. If the cultural resource is determined to be a TCR, the qualified archaeologist, in cooperation with the Native American monitor(s) and other authorized staff, shall use flagging tape, rope, or some other means to delineate the area of the find plus a 50-foot no-work buffer zone. The qualified archaeologist, in consultation with the Native American monitor(s), shall have the authority to modify the no-work radius as appropriate, using professional judgement. If potential human remains are observed, MM TCR-3 and MM CR-7 will take effect.

Any discovery of cultural resources must be kept confidential and secure to prevent unauthorized access of sensitive information. There shall be no publicity regarding any TCRs discovered or recovered. However, discoveries will be documented and included in a confidential cultural resources monitoring report prepared by the qualified archaeologist, in consultation with the Native American monitor(s), as necessary, and will be submitted to the P W and DPR, the South Central Coastal Information Center (SCCIC), and the NAHC.

If the resource is considered to be a TCR, as result of the resource evaluation and tribal consultation process, treatment measures will be developed with input from consulting Tribe(s). All collected cultural objects shall be cleaned and cataloged. Final disposition, which may include permanent curation at an appropriate institution, repatriation, or, if curation is infeasible, reburial in a secure on-site location, will be determined in consultation with PWs and DPR, the consulting Tribe(s), and the qualified archaeologist.

MM TCR-3: If Native American human remains and/or grave goods are discovered or recognized on the Project site, then California PRC Section 5097.9 and Health and Safety Code Section 7050.5 shall be followed, in addition to procedures outlined in MM CR-7. PRC 5097.98(d)(1) defines Native American

human remains as an inhumation or cremation in any state of decomposition or skeletal completeness. Funerary objects, also called associated grave goods in PRC 5097.98, and human remains shall be treated alike per PRC Section 5097.98 (d)(1) and (2). Any discovery of Native American human remains/grave goods shall be kept confidential.

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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

Construction

Less-than-Significant with Mitigation Incorporated. As described in Section V Cultural Resources, although no new, previously unknown cultural resources including tribal cultural resources were identified at the Project site, the NAHC SLF search was positive. Additionally, the District consulted with, in no particular order, the Gabrieleño Band of Mission Indians—Kizh Nation and the Gabrielino-Tongva Indians of California, under AB 52 for the Project. The Tribes expressed their concerns about potential of encountering tribal cultural resources at the Project site as described above; therefore, the District will incorporate and implement MM TCR-1, MM TCR-2, and MM TCR-3 to reduce potential adverse impacts on tribal resources to less-than-significant.

Operation

Less-than-Significant Impact. As described above in Section XVIII, a, i, and previously in Section V, Cultural Resources, upon completion, operation of the Project would require periodic maintenance of the filtration equipment, regular removal of surface debris from the Lake and Pond, and regular maintenance of surrounding landscape and vegetation, all of which are similar to on-going maintenance activities of the Arboretum. Although the Project involves installing new filtration equipment that was not in place previously and will require periodic maintenance, it is not anticipated that maintenance of the new filtration equipment, or any other maintenance activities that result from Project implementation would result a substantial adverse change to any tribal cultural resource beyond what currently exists during routine maintenance activities at the Arboretum. Therefore, operational impacts to TCRs as defined in PRC Section 5024.1 are less than significant. No mitigation is required.

Mitigation Measures

MM TCR-1: P W shall invite retain a Native American monitor from Tribe(s) that have engaged in consultation and requested monitoring prior to the commencement of any ground-disturbing activity in native soils, in conjunction with a U.S. Secretary of Interior (SOI) qualified archaeologist and will provide compensation for the Native American monitor for their time spent. The Native American monitor(s) should be members of the Tribe(s) they represent. A monitoring agreement between each of the monitoring tribe(s) and PW will be prepared prior to ground-disturbing activities in native soils.

The Native American monitor(s) will work with the Project's qualified archaeologist during ground-disturbing activities, identify potential Native American Tribal Cultural Resources (TCRs), and communicate concerns regarding TCRs directly to P W and DPR. Additionally, the tribal representatives shall attend the preconstruction cultural resources awareness meeting and will be given the opportunity to provide TCR awareness training to all Project personnel, in cooperation with the qualified archaeologist prior to the start of construction.

The Native American monitor(s) shall maintain ongoing collaborative consultation with the qualified archaeologist during ground-disturbing activities. Ground-disturbing activities include, but are not limited to, clearing, grubbing, grading, potholing, tree removal, boring, drilling, demolition, pavement removal, excavation, trenching and, in certain circumstances, auguring work in native soils. As designated by the qualified archaeologist, Native American monitoring will not be required for augering depths, which have no potential for yielding tribal cultural resources. Native American monitoring will not be required for augering depths, as designated by the qualified archaeologist, which have no potential for yielding tribal cultural resources. Native American monitoring will not be required for work activities that include the demolition and removal of hardscaping material such as existing concrete, asphalt pavement, and pavement base layers.

The Native American monitor(s) will complete daily monitoring logs that will provide descriptions and locations of relevant ground-disturbing activities, construction activities performed, soil types, cultural-related materials, and any other facts, conditions, materials, or discoveries of significance to the Tribe(s). The monitoring logs will identify and describe any discovered TCRs and/or Native American human remains and burial goods and will be provided to PW and DPR at the end of ground-disturbing activities. Monitoring logs will be kept confidential with the Project records.

The Native American monitor(s) shall have the ability to notify and coordinate with the qualified archaeologist, who has the authority to temporarily stop work and identify a stop work radius, if they find a cultural resource that may require further identification, recordation, and evaluation. If the cultural resource is determined to be of Native American origin, the monitoring Tribe(s) will assess and develop appropriate handling and treatment measures. Ground-disturbing activity within the stop work radius will remain on hold until the discovered TCR has been fully assessed by the Native American Tribe(s) and authorization to resume work has been granted by the qualified archaeologist. Work may continue on other parts of the Project outside of the stop work zone while consultation and treatment are conducted.

On-site tribal monitoring shall conclude when the Tribe(s) and qualified archeologist determine and provide written confirmation that all ground-disturbing activities with the potential to impact TCRs on the Project site or in connection with the Project are complete.

MM TCR-2:

A Tribal Cultural Resource (TCR) is a site, feature, place, cultural landscape, sacred place or object, which is of cultural value to a Tribe(s) AND either: On or eligible for the CA Historic Register or other local historic register, OR the lead agency, at its discretion, chooses to treat the resource as a TCR. See: PRC 21074(a)(1)(A)-(B).

Upon discovery of any TCR or potential TCR, all construction activities in the immediate vicinity of the discovery shall cease within a radius deemed appropriate by the SOI qualified archaeologist and Native American monitor(s). If the qualified archaeologist in consultation with the Native American monitor(s), as appropriate, determines that the find does not represent a potentially significant cultural resource, work may resume immediately and no agency notifications are required. If the cultural resource is determined to be a TCR, the qualified archaeologist, in cooperation with the Native American monitor(s) and other authorized staff, shall use flagging tape, rope, or some other means to delineate the area of the find plus a 50-foot no-work buffer zone. The qualified archaeologist, in consultation with the Native American monitor(s), shall have the authority to modify the no-work radius as appropriate, using

professional judgement. If potential human remains are observed, MM TCR-3 and MM CR-7 will take effect.

Any discovery of cultural resources must be kept confidential and secure to prevent unauthorized access of sensitive information. There shall be no publicity regarding any TCRs discovered or recovered. However, discoveries will be documented and included in a confidential cultural resources monitoring report prepared by the qualified archaeologist, in consultation with the Native American monitor(s), as necessary, and will be submitted to P W, DPR, the South Central Coastal Information Center (SCCIC), and the NAHC.

If the resource is considered to be a TCR, as result of the resource evaluation and tribal consultation process, treatment measures will be developed with input from consulting Tribe(s). All collected cultural objects shall be cleaned and cataloged. Final disposition, which may include permanent curation at an appropriate institution, repatriation, or, if curation is infeasible, reburial in a secure on-site location, will be determined in consultation with P W and DPR, the consulting Tribe(s), and the qualified archaeologist.

MM TCR-3: If Native American human remains and/or grave goods are discovered or recognized on the Project site, then California PRC Section 5097.9 and Health and Safety Code Section 7050.5 shall be followed, in addition to procedures outlined in MM CR-7. PRC 5097.98(d)(1) defines Native American human remains as an inhumation or cremation in any state of decomposition or skeletal completeness. Funerary objects, also called associated grave goods in PRC 5097.98, and human remains shall be treated alike per PRC Section 5097.98 (d)(1) and (2). Any discovery of Native American human remains/grave goods shall be kept confidential.

Cumulative Impacts

There are no related projects within a 0.5-mile radius, as identified in Chapter 2, Project Description. The above-referenced mitigation measures (MM TCR-1, MM TCR-2 and MM TCR-3) would reduce the Project's impacts to less than significant. In addition, the related projects would also be required to follow state law related to tribal resources. Therefore, the incremental effect of the proposed Project related to tribal resources would not be cumulatively considerable.

XIX. Utilities and Service Systems	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
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 statutes and regulations related to solid waste?	☐	☐	☐	☒

Environmental Setting

The Project site is currently a 127-acre public garden. The Arboretum contains landscaping and minimal lighting. The City of Arcadia is the sole provider of water and sewer conveyance services[94]. Southern California Edison is the electricity provider, Southern California Gas Company is the natural gas provider, and Waste Management is the refuse collector.[95] Wastewater management is provided by the Los Angeles County Sanitation District; the City of Arcadia is part of Sanitation District 15.[96]

[94] City of Arcadia. 2022. Public Works Services: Water & Sewer. Available at: https://www.arcadiaca.gov/shape/public_works_services_department/water___sewer_services/water_sewer.php
[95] City of Arcadia. 2010. *General Plan EIR: Section 4.16 Utilities and Service Systems.* Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/eir/Utilities.pdf
[96] Los Angeles County Sanitation District. 2014. *Sanitation Districts Service Area.* Available at: https://www.lacsd.org/home/showpublisheddocument/5842/637666294269530000

Impact Analysis

Would the project:

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 telecommunication facilities, the construction or relocation of which could cause significant environmental effects?

Construction

No Impact. The proposed Project would involve improvements to existing water features, the Lake and Pond to improve water quality, increase stormwater detention, and restore the aquatic ecosystem. The construction and operation of the proposed Project would not result in the need for additional water or wastewater treatment facilities.

During construction, water would be required for activities such as dust control. However, these activities are limited and temporary and would not require large amounts of water that would require construction of new water treatment facilities. Sanitary waste related to the temporary increase in on-site workforce during Project construction would be handled through the use of portable chemical toilets, the waste from which would be removed by a private contractor and disposed of at an approved off-site location that would comply with the wastewater treatment requirements of the RWQCB. All drainage flows would be routed through existing storm infrastructure serving the Project site and surrounding areas. The proposed Project would comply with the stormwater requirements of the MS4 Permit issued by the applicable RWQCB.

Furthermore, use of electric power during construction would be provided by generators. Construction of the proposed Project would not result in the need for additional electric service.

Therefore, construction of the proposed Project would not require relocation or construction of new or expanded water, wastewater treatment, electric power, natural gas, or telecommunication facilities during construction. No impacts would occur.

Operation

No impact. The proposed Project would involve improvements to existing water features, the Lake and Pond to improve water quality, increase stormwater detention, and restore the aquatic ecosystem. As discussed in Section X. e, Hydrology and Water Quality, the proposed Project would enhance the existing drainage capacity of the surrounding area by diverting stormwater flows to the Pond and Lake for infiltration and would improve water quality in the Project area because pollutants would also be diverted and removed through pre-treatment processes. As a result, pollutant loads would be diverted from the existing storm drain network and storm water flows would be improved over existing conditions. Additionally, the Project does not propose components that will require additional water, wastewater, electricity, natural gas, or telecommunication facilities. Therefore, the proposed Project would not require new or expanded water, wastewater treatment, electric power, natural gas, or telecommunication facilities when in operation. No impacts would occur.

Mitigation Measures

No potentially significant impacts related to wastewater treatment requirements would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Construction and Operation

No Impact. Construction of the proposed Project would require a limited quantity of water for dust control, excavation, and other construction-related activities. Existing water resources would be sufficient to meet those needs. Once completed, the proposed would not require new water supplies or increase the demand for water use. No impact would occur.

Mitigation Measures

No potentially significant impacts related to water supplies would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

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

Construction and Operation

No Impact. The proposed Project includes improvements to the Arboretum and does not include the construction of facilities or amenities at the Arboretum that will require additional wastewater service. Additionally, during construction, it is anticipated that workers would come from the existing regional workforce and would not increase demand on existing wastewater treatment capacity. Once completed, the proposed Project does not require a substantial increase in employees at the Arboretum. As previously described in Chapter 2, Project Description, average annual attendance at the Arboretum is anticipated to remain consistent. Therefore, the proposed Project would not result in a determination by the wastewater treatment provider which serves or may serve the Project that it has inadequate capacity to serve the Project's projected demand in addition to existing commitments. No impacts would occur.

Mitigation Measures

No potentially significant impacts related to wastewater treatment capacity would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

d. Generate solid waste in excess of state or local standards, or in excess of the future capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

Construction

Less-than-Significant Impact. Construction activities could include excavation of soil and demolition of some existing infrastructure, which would produce solid waste requiring disposal in the nearest practicable landfill. As described in Chapter 2, Project Description, the largest potential source of solid waste during construction would be approximately 65,000 CY of excavated sediment combined from the Lake and Pond. As described above in Chapter 2.0, Project Description, and Section IX, Hazards and Hazardous Materials, it is anticipated that sediment removed from the Pond will be classified as California-hazardous waste and will need to be disposed of at a Class I hazardous waste landfill. The nearest, practicable Class I landfill is the US Ecology Nevada, Inc., facility near Beatty, Nevada, approximately 290 miles northeast of the Project site. The current capacity of this facility is 8.6 million

CY. As previously described, the anticipated haul route to this location would be the I-210 east, to I-15 north, to SR-127 north to US-95 north. Contaminated, non-hazardous sediment from the Lake and other construction debris will need to be disposed of at a Class III facility. As previously described, the furthest practicable Class III facility is the Simi Valley Landfill and Recycling Center in Simi Valley, Ventura County, California, approximately 51 miles northwest of the Arboretum. The anticipated haul route to this facility would be the westbound I-210 and westbound SR-118 freeways. The remaining capacity of the Simi Vally Landfill is 8.3 million CY. Other potential Class III landfills that could be utilized include the Sunshine Canyon Landfill in Sylmar, California, approximately 33 miles northwest of the Arboretum, and the Chiquita Landfill in Castaic, California, approximately 46 miles northwest of the Arboretum. The remaining capacity of the Sunshine Canyon Landfill and Chiquita Landfill are 64 million CY and 58 million CY, respectively. The anticipated haul routes from the Arboretum to these facilities would be the westbound I-210 to the northbound I-5 freeways.

As described in Section IX, Hazards and Hazardous Materials, each load of contaminated material will be manifested for tracking purposes and will comply with existing federal, state, and local regulations pertaining to routine transport, use, and disposal of hazardous materials.

As described in Chapter 2, Project Description, during construction a total of 65,000 CY of sediment will be excavated. Given the remaining capacities of the landfills anticipated to the utilized for disposal, the proposed Project will not generate excess solid waste that would exceed the capacities of landfills.

In the event that a significant quantity of waste produced by construction activities would need to be disposed of at a landfill, as described above, the most practicable disposal facilities to the Arboretum have sufficient capacity to accept additional construction waste. In addition, construction management BMPs, as described in Chapter 2, Project Description would ensure construction impacts remain less than significant. No mitigation is required.

Operation

Less-than-Significant Impact. Operation of the proposed Project would result in an insignificant generation of solid waste and therefore would not exceed state or local standards, or in excess of the capacity of local landfills, or otherwise impact the attainment of solid waste reduction goals. As such, operational impacts would be less than significant. No mitigation is required.

Mitigation Measures

No potentially significant impacts related to generation of solid waste in excess of state or local standards, or excess of the future capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

e. Comply federal, state, and local management and reduction statutes and regulations related to solid waste?

No Impact. The proposed Project would comply with federal, state, and local statutes and regulations regarding solid waste. As discussed in Section XVIII(d) above, construction debris would be recycled or disposed of according to local and regional standards. No impacts would occur.

Mitigation Measures

No potentially significant impacts related to federal, state, and local management and reduction statutes and regulations related to solid waste would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

Cumulative Impacts

There are no related projects within a 0.5-mile radius, as identified in Chapter 2, Project Description. Population growth in Los Angeles County has been anticipated by the utility service providers, and conservation, management, and expansion strategies are being implemented to ensure adequate capacity for meeting the demands of this growth. As such, it is not anticipated that the development of the proposed Project would result in significant cumulative impacts related to utilities and service systems. As discussed above, the proposed Project would not result in any potentially significant impacts on utilities and service systems. The proposed Project would not require or result in the construction of new water, wastewater treatment, or stormwater drainage facilities or the expansion of existing facilities. The proposed Project would have adequate water supplies available, and it would be served by landfills with sufficient permitted capacity to accommodate its solid waste disposal needs. Therefore, the incremental effect of the proposed Project related to utilities and service systems would not be cumulatively considerable.

XX. 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. a. Substantially impair an adopted emergency evacuation plan?	☐	☐	☒	☐
b. 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. 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 on going impacts to the environment?	☐	☐	☒	☐
d. d. Expose people or structures to significant risks, including down slope or downstream flooding or landslides, as a result of runoff, post-fire instability or drainage changes?	☐	☐	☐	☒

Environmental Setting

Wildland fires are fires where vegetation (grass, brush, trees) is the primary fire fuel and involve very few or no structures. Wildland/urban interface fires are fires where the fire fuel includes both structures and vegetation. The defining characteristic of the wildland/urban interface is that structures, typically residences, are built in or immediately adjacent to areas that are subject to wildland fires due to continuously high vegetative fuel loads. When wildland fires occur in such areas, they tend to spread quickly due to the high vegetative fuel loads, and structures can become an additional fuel source. Within the City of Arcadia, as elsewhere in California, land use development patterns include structures being built in the wildland/urban interface resulting in high fire and life safety risks for structures and occupants within these areas, and other structures in the surrounding area.

CGC Section 51178[97] and PRC Section 4202[98]requires that the State Fire Marshal identify areas in the state, including state responsibility areas, as moderate, high, and very high fire hazard severity zones based on consistent statewide criteria and based on the severity of fire hazard that is expected to prevail in those areas. The criteria is based on fire history, potential fuel loading, slope, terrain, predicted flame length, blowing embers, and fire weather including areas where winds have been identified by the Office

[97] CA Govt Code § 51178 (2021). *Chapter 6.8 – Moderate, High, and Very High Fire Hazard Severity Zones.* Available at: https://law.justia.com/codes/california/2021/code-gov/title-5/division-1/part-1/chapter-6-8/section-51178/
[98] Public Resources Code §4202 (2021). *Article 9 – Fire Hazard Severity Zones.* Available at: https://law.justia.com/codes/california/2021/code-prc/division-4/part-2/chapter-1/article-9/section-4202/#:~:text=%C2%A7%204202%20(2021)-,4202.,into%20fire%20hazard%20severity%20zones.

of the State Fire Marshal as a major cause of wildfire spread. It is important to note that Fire Hazard Severity Zone maps evaluate "hazard," not "risk." Similar to flood zone maps that describe areas in terms of the probability of a particular area being inundated by floodwaters, fire hazard severity is based on the physical conditions that create the likelihood of an event along with expected fire behavior over a 30-to-50-year period without considering fuel reduction efforts, recent wildfire events, and home hardening (e.g., defensible space, building materials). Risk is the potential damage a fire can have to an area under existing conditions, accounting for fuel reduction projects, defensible space, and ignition resistant building construction[99].

According to the City of Arcadia General Plan[100], wildfires are a threat to the hillside areas of the City of Arcadia. Based on the General Plan Safety Element *Fire Hazard Zones Map*[101] the Project site is not within a Fire Hazards Severity Zone (FHSZ), nor within a Fire Protection State Responsibility Area (SRA), or a Federal Responsibility Area (FRA). The most recent (2023) California Department of Forestry and Fire Protection (Cal Fire) FHSZ Maps indicate that the Project site is not within any FHSZ[102,103].

Impact Analysis

Would the project:

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?

Construction and Operation

Less-than-Significant Impact. The Project site is located within an urban area of the City of Arcadia and is not located within or near lands classified as Very High Fire Hazard Severity Zones (VHFHSZ) within a Local Responsibility Area or State Responsibility Area.[104] However, Los Angeles County maintains disaster routes which are freeways, highways, and arterial routes pre-identified for use during times of crisis. These routes are utilized to bring in emergency personnel, equipment, and supplies to impacted areas in order to save lives, protect property and minimize impacts to the environment[105]. These are not evacuation routes, which are used to move population out of an affected area. However, an emergency may warrant a road to be used as both a disaster and evacuation route. Within the City of Arcadia, Los Angeles County Operational Area designates the I-210 freeway, Colorado Boulevard, and Huntington

[99] California Department of Forestry and Fire Protection. 2022. *FAQS: 2022 Fire Hazard Severity Zones.* Available at: https://osfm.fire.ca.gov/media/winfmowp/2022-fhsz-faqs-dec-2022-_final.pdf
[100] City of Arcadia. 2010. *General Plan Safety Element.* Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/general%20plan/Safety.pdf
[101] City of Arcadia. 2010. *General Plan Safety Element Figure S-6: Fire Hazard Zones*. Available at: https://cms9files.revize.com/arcadia/Shape%20Arcadia/Development%20Services/general%20plan/Safety.pdf
[102] California Department of Forestry and Fire Protection. 2023. *Los Angeles County - State Responsibility Area Fire Hazard Severity Zones.* Available at: https://osfm.fire.ca.gov/media/1hxhnkbu/fhsz_county_sra_11x17_2022_losangeles_2.pdf
[103] California Department of Forestry and Fire Protection. 2023. *FHSZ Viewer (Online Map Viewer).* Available at: https://egis.fire.ca.gov/FHSZ/
[104] State of California and the Department of Forestry and Fire Protection (CAL FIRE), Very High Fire Hazard Severity Zone Map, Available at: https://osfm.fire.ca.gov/media/5830/los_angeles.pdf.
[105] Los Angeles County Public Works.2023. *Disaster Routes Los Angeles County Operational Area.* Available at: https://dpw.lacounty.gov/dsg/DisasterRoutes

Boulevard as Disaster Routes.[106] As shown on Figure 2-2, Project Location Map, the I-210 freeway and Colorado Boulevard are immediately north of the Arboretum and Colorado Boulevard is accessible from Old Ranch Road, the street that construction equipment and trucks would utilize for ingress and egress to the Arboretum. Further, east and west bound ramps to the I-210 freeway are located on Baldwin Avenue and can be accessed via Colorado Boulevard. Given the amount of construction equipment to be used, and the number of construction-related truck trips anticipated for the Project, should an emergency event occur during the construction period that would warrant the use of the I-210 freeway and Colorado Street as disaster routes, it is anticipated that movement of construction equipment and trucks to and from the Project site would be reduced or temporarily halted.

Therefore, construction and operational impacts that substantially impair an adopted emergency response plan or emergency evacuation plan would be less than significant. No mitigation is required.

Mitigation Measures

No potentially significant impacts related to an adopted emergency response plan or emergency evacuation plan would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

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?

Construction and Operation

Less-than-Significant Impact. The Project site is located in a flat, urban area of the City of Arcadia and as such the potential for wildland fire hazards in the immediate Project vicinity are extremely limited. While vegetation is a prominent feature of the Arboretum, construction and operation of the proposed Project do not present a unique or increased fire risk. The nearest fire station to the Project site is City of Arcadia Fire Department Station 106, located at 630 South Baldwin Avenue, approximately one mile from the Project site. During construction of the proposed Project, safe handling of flammable products would be required, and construction crews would have fire-suppression equipment available on-site to respond to an accidental ignition of a fire. As such, construction of the proposed Project would not exacerbate wildfire risks. Following construction, the Project site would operate similar to existing conditions and is not expected to increase wildfire risk. Impacts would be less than significant. No mitigation is required.

Mitigation Measures

No potentially significant impacts from construction or operation of the proposed Project related to slope, prevailing winds or other factors would exacerbate wildfire risks that expose Project occupant to pollutant concentrations from wildfire or uncontrolled spread of wildfire would occur. Therefore, no mitigation measures are required.

c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may

[106]Los Angeles County Public Works.2023. *Disaster Routes Los Angeles County Operational Area*. Available at: https://dpw.lacounty.gov/dsg/DisasterRoutes/map/Arcadia.pdf

exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.

Construction and Operation

Less-t-than-Significant Impact. The proposed Project includes installation of electrical components necessary to run the filtration systems at the Lake and Pond. However, it is expected that this equipment will utilize the existing power infrastructure and as such will not require installation of new power lines, towers or poles. During construction, crews would have fire-suppression equipment available on-site to respond to an accidental ignition of a fire. Further, the nearest fire station to the Project site is City of Arcadia Fire Department Station 106, located at 630 South Baldwin Avenue, approximately one mile from the Project site. Following construction, the Project site would operate similar to existing conditions and would not require the construction of additional fire protection facilities or expansion of existing facilities. As such, impacts related to the installation or maintenance of fire associated infrastructure would be less than significant. No mitigation is required.

Mitigation Measures

No potentially significant impacts related to the installation or maintenance of associated infrastructure that may exacerbate fire risk or result in temporary or ongoing impacts to the environment would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

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?

Construction and Operation

No Impact. The Project site is located within a flat, urban area within the City of Arcadia, and as described previously, is not located within or near a FHSZ or VHFHSZ within a Local Responsibility Area or State Responsibility Area. Further, as described in Section VIII, Geology, the Project site is not in a state designated area susceptible to landslides. No impacts would occur.

Mitigation Measures

No potentially significant impacts related exposing people or structures to significant risks would occur from construction and operation of the proposed Project, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes would occur as a result of the proposed Project. Therefore, no mitigation measures are required.

Cumulative Impacts

The geographic area considered for the analysis of cumulative impacts pertaining to wildfire is the local Project vicinity. As described above, the Project site is in a highly urbanized area and is not within a Fire Hazards Severity Zone (FHSZ), nor within a Fire Protection State Responsibility Area (SRA), or a Federal Responsibility Area (FRA). The most recent (2023) California Department of Forestry and Fire Protection (Cal Fire) FHSZ Maps indicate that the Project site is not within any FHSZ. There are no related projects within a 0.5-mile radius, as identified in Chapter 2, Project Description, which would combine with the proposed Project to result in cumulative impacts with respect to wildfires. Therefore, the incremental effect of the proposed Project related to wildfire would not be cumulatively considerable.

XXI. 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, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
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 that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Environmental Analysis

Impact Analysis

Would the project?

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?

Construction

Less-than-Significant with Mitigation Incorporated. As discussed in Chapter 3, Section IV, Biological Resources, the database search indicated an historic record of numerous special-status wildlife and plant species identified around the Project area. The field survey evaluated habitat within the BSA for each species identified in the database search and nine special-status species were determined to have potential to occur due to suitable, available habitat. Further, during the field survey, only two special-status plant species were determined to have the potential to occur within the BSA; however, these species are not considered to be naturally occurring but are instead components of the actively managed botanical gardens within the Arboretum. No native or sensitive vegetation communities, and no federal or state-listed plant species, were identified within the BSA during the field survey. Further, there is

potential for nesting birds and raptors to be present on and near the Project site; therefore, mitigation has been provided. No USFWS-designated Critical Habitat for any special-status wildlife or plant species coincides with the BSA. As discussed in Section IV, Biological Resources, a single CDFW species of special concern was identified in the BSA but is presumed to not be naturally occurring. Further, as discussed Section IV, Biological Resources an individual member of a federal candidate for listing species, and an individual member of a state candidate endangered species were directly observed during the field survey. These individuals were presumed to be migrating and foraging as documented wintering and roosting areas for the federal candidate species do not overlap with the BSA, and suitable nesting opportunities for the state candidate species was not identified in the BSA. Additionally, the proposed Project is anticipated to result in the removal of trees along the Lake shoreline to construct the new retaining wall. No County protected trees would be removed as part of the proposed Project; however, MM BIO-2 requires preparation and approval of a tree preservation plan or written concurrence that no tree protection plan is required.

Construction activities including sediment removal of the Lake and Pond, removal of vegetation, as well as noise, vibration, dust, and increased human presence could result in significant direct and indirect impacts. Implementation of MM BIO-1 through BIO-6 during construction would reduce potential temporary direct and indirect impacts to fish, wildlife and plants to less than significant levels. The proposed Project would not degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number of, or restrict the range of a rare or endangered plant or animal.

As discussed in Chapter 3, Section V, Cultural Resources, and Section XVIII, Tribal Cultural Resources, and as determined through the AB 52 consultation process, no construction impacts would occur to known historic, archaeological, tribal cultural, and/or paleontological resources. Potential impacts to unknown archaeological resources and human remains discovered during Project-related activities that involve ground disturbance would be less than significant with incorporation of MM CR-1 through CR-7, and MM TCR-1 through TCR-3. Therefore, construction of the Project does not the potential to eliminate important examples of the major periods of California history or prehistory.

Incorporation of MM BIO -1 through BIO-6, and MM CR -1 through CR -7, MM PR-1, and MM TCR -1 through TCR-3 would reduce impacts related to degradation of the environment, habits of fish or wildlife species or plant species, populations of fish, wildlife and plants, along with examples of the major periods of California history or prehistory. Therefore, impacts would be less than significant.

Operation

Less-than-Significant Impact. Upon Project completion, operational of the Project would require periodic maintenance of the filtration equipment, regular removal of surface debris from the Lake and Pond, and regular maintenance of surrounding landscape and vegetation, all of which are similar to on-going maintenance activities of the Arboretum. As described in Chapter 2, Project Description, once operational the flood control features, newly installed water quality components, and other maintenance and landscaping maintenance would be implemented under the 1954 Transfer Resolution between the County and DPR, including the Maintenance and Use Agreement, DPR's existing Lake Management Plan, and an Operations and Maintenance Plans prepared for the newly installed water quality components. Therefore, it is not anticipated that periodic maintenance of the Pond, Lake, and the new filtration equipment would degrade or impact sensitive biological resources. Once operational, the Project represents facility upgrades and would achieve multiple benefits, including water quality

improvements, water conservation, education and outreach. Therefore, operational impacts related to the degradation of the quality of the environment would be less than significant. No mitigation measures are required.

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.)

Cumulative impacts are an evaluation of the proposed Project's potential impacts combined with impacts from other related projects. Related projects are projects that are located within the area surrounding the proposed Project site that are proposed, or in progress that, when considered with the proposed Project, could result in cumulative environmental impacts. Analysis of the proposed Project's cumulative effects during construction and operation are discussed below.

Construction

Less-than-Significant Impact. As discussed in Chapter 2, Related Projects, there are no development projects planned or currently known to the County within a 0.5-mile radius of the proposed Project. As described in the analysis in Chapter 3, Sections I - XX, the Project would result in only construction-period impacts, a cumulative considerable impact could only occur if construction of a development project in the Project vicinity was constructed at the same time as the Project, which would be implemented in phases over an approximately 18-month period. All Project construction related impacts would be avoided or minimized as a result of construction BMPs, that are included as Project features in Chapter 2, Project Descriptions, or would be less than significant, or mitigated to a less than significant level as described in Chapter 3, Environmental Analysis. As indicated in Sections I – XXII, the proposed Project would have less than significant individual impacts and would not contribute to, or result in, cumulatively considerable impacts.

Operation

No Impact. As shown in the analysis in Chapter 3, Sections I - XX, there would be no long-term operation impacts because the Project consists of improvements to existing water features of the Arboretum and these features would continue operating in a similar manner to existing conditions. There are no projects planned, or under construction within 0.5-miles of the proposed Project. Therefore, the proposed project would not result in a cumulatively considerable impact on any resource area. Therefore, impacts would be less than significant.

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

Construction

Less-than-Significant Impact with Mitigation. As shown in the analysis in Chapter 3, Sections I - XX, construction of the proposed Project could cause adverse aesthetics and noise effects to humans. Opaque fencing around active construction areas and construction staging areas would limit views of the landscape and features such as the historic Queen Anne Cottage. Construction equipment, including the operation of pumps and generators would operate up to 24-hours per day. While these impacts are limited to construction of the Project and therefore temporary in nature, potential adverse short-term impacts related to aesthetic and noise impacts would be reduced to a less than significant levels with

implementation of MM AES-1, and MM NOISE-1. The proposed Project would include the construction of water quality and provide water conservation measures in a public facility. As discussed throughout Chapter 3 of this IS/MND, the impacts related to the proposed Project would be temporary in nature, driven by construction activities. While construction will remove public access to the Lake and Pond, the Arboretum itself will remain open to the public. As such, the proposed Project would not result in potentially significant long-term impacts to the environment that would result in substantial adverse effects on human beings, either directly or indirectly. The impacts from the proposed Project are anticipated to be reduced to less than significant levels through the use of standard regulatory requirements that will reduce and avoid impacts and/or the implementation of mitigation measures. Therefore, during construction the proposed Project would not have environmental effects that would cause substantial adverse effects on human beings. Impacts would be less than significant. No mitigation is required.

Operation

No Impact. The proposed Project, once operational, will improve existing features at the Arboretum and these water features will continue operating in a similar manner to existing conditions. Once operational, areas around the Lake and Pond that were closed to the public for construction would be reopened and accessible to the public as they were prior to construction. In addition to improved water quality of the Lake and Pond, Project features include improvements to landscaping and repair of the existing shoreline of the Lake and Pond. Operation of the proposed Project will improve existing Arboretum features and provide an enhanced experience for visitors. Therefore, operation of the proposed Project would not cause substantial adverse effects on humans. No impacts would occur.

Chapter 4
List of Preparers

Los Angeles County Flood Control District

Grace Komjakraphan-Tek	Project Manager
Ariana Villanueva	Project Manager

AECOM

Shannon Ledet	Project Manager
Lori Keller	Deputy Project Manager
Suzanne McFerran	Air Quality; Energy; Greenhouse Gases
Paola Peña	Air Quality; Energy; Greenhouse Gases
Emma Fraser	Biological Resources
Vanessa Tucker	Biological Resources
Samantha Lorenz	Cultural Resources
Monica Wilson	Architectural Historian
Evan Mackall	Architectural Historian
Chris Kaiser	Noise and Vibration
George Hitterman	Noise and Vibration
Jang Seo	GIS/Graphics

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Baldwin Lake and Tule Pond Restoration Project Detailed Report

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1.1. Basic Project Information

Data Field	Value
Project Name	Baldwin Lake and Tule Pond Restoration Project
Construction Start Date	4/1/2025
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	0.50
Precipitation (days)	24.4
Location	301 N Baldwin Ave, Arcadia, CA 91007, USA
County	Los Angeles-South Coast
City	Arcadia
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	4971
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.28

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Recreational	1.00	User Defined Unit	5.40	0.00	2.40	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.15	4.04	84.7	55.0	0.39	1.82	21.7	23.5	1.72	6.59	8.31	—	58,005	58,005	2.84	8.32	122	60,677
Mit.	4.19	1.54	73.7	54.5	0.39	0.88	21.7	22.6	0.87	6.59	7.46	—	58,005	58,005	2.84	8.32	122	60,677
% Reduced	41%	62%	13%	1%	—	51%	—	4%	50%	—	10%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.12	3.91	87.0	54.1	0.39	1.82	21.7	23.5	1.72	6.59	8.31	—	57,944	57,944	2.84	8.32	3.17	60,496
Mit.	4.16	1.52	76.0	53.6	0.39	0.88	21.7	22.6	0.87	6.59	7.46	—	57,944	57,944	2.84	8.32	3.17	60,496
% Reduced	42%	61%	13%	1%	—	52%	—	4%	50%	—	10%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.92	1.14	22.1	16.7	0.10	0.48	5.91	6.39	0.45	1.65	2.10	—	14,167	14,167	0.68	1.94	12.6	14,775
Mit.	1.10	0.49	19.8	16.7	0.10	0.21	5.91	6.13	0.21	1.65	1.86	—	14,167	14,167	0.68	1.94	12.6	14,775
% Reduced	43%	57%	11%	> -0.5%	—	55%	—	4%	54%	—	12%	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.35	0.21	4.04	3.04	0.02	0.09	1.08	1.17	0.08	0.30	0.38	—	2,345	2,345	0.11	0.32	2.09	2,446
Mit.	0.20	0.09	3.61	3.05	0.02	0.04	1.08	1.12	0.04	0.30	0.34	—	2,345	2,345	0.11	0.32	2.09	2,446
% Reduced	43%	57%	11%	> -0.5%	—	55%	—	4%	54%	—	12%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	4.88	4.04	37.0	44.9	0.07	1.44	9.81	11.2	1.32	3.01	4.33	—	9,549	9,549	0.41	0.41	9.87	9,690
2026	7.15	3.92	84.7	55.0	0.39	1.82	21.7	23.5	1.72	6.59	8.31	—	58,005	58,005	2.84	8.32	122	60,677
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	6.86	3.91	78.4	50.7	0.33	1.82	19.3	21.2	1.72	5.94	7.66	—	49,897	49,897	2.28	6.90	2.81	52,013
2026	7.12	3.90	87.0	54.1	0.39	1.82	21.7	23.5	1.72	6.59	8.31	—	57,944	57,944	2.84	8.32	3.17	60,496
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.73	0.57	5.78	6.10	0.01	0.20	2.11	2.31	0.19	0.42	0.61	—	1,924	1,924	0.09	0.15	1.30	1,974
2026	1.92	1.14	22.1	16.7	0.10	0.48	5.91	6.39	0.45	1.65	2.10	—	14,167	14,167	0.68	1.94	12.6	14,775
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.13	0.10	1.05	1.11	< 0.005	0.04	0.38	0.42	0.03	0.08	0.11	—	319	319	0.01	0.03	0.21	327
2026	0.35	0.21	4.04	3.04	0.02	0.09	1.08	1.17	0.08	0.30	0.38	—	2,345	2,345	0.11	0.32	2.09	2,446

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.43	1.26	24.2	43.7	0.07	0.25	9.81	10.1	0.24	3.01	3.25	—	9,549	9,549	0.41	0.41	9.87	9,690
2026	4.19	1.54	73.7	54.5	0.39	0.88	21.7	22.6	0.87	6.59	7.46	—	58,005	58,005	2.84	8.32	122	60,677
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	3.72	1.37	65.4	49.1	0.33	0.77	19.3	20.1	0.76	5.94	6.70	—	49,897	49,897	2.28	6.90	2.81	52,013
2026	4.16	1.52	76.0	53.6	0.39	0.88	21.7	22.6	0.87	6.59	7.46	—	57,944	57,944	2.84	8.32	3.17	60,496
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.28	0.21	4.01	5.91	0.01	0.05	2.11	2.16	0.05	0.42	0.47	—	1,924	1,924	0.09	0.15	1.30	1,974
2026	1.10	0.49	19.8	16.7	0.10	0.21	5.91	6.13	0.21	1.65	1.86	—	14,167	14,167	0.68	1.94	12.6	14,775
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.05	0.04	0.73	1.08	< 0.005	0.01	0.38	0.39	0.01	0.08	0.09	—	319	319	0.01	0.03	0.21	327
2026	0.20	0.09	3.61	3.05	0.02	0.04	1.08	1.12	0.04	0.30	0.34	—	2,345	2,345	0.11	0.32	2.09	2,446

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.02	0.01	0.01	0.15	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	0.00	293	293	0.03	< 0.005	0.12	295
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.02	0.01	0.01	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	0.00	291	291	0.03	< 0.005	< 0.005	293

Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.01	0.01	0.01	0.10	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	0.00	281	281	0.03	< 0.005	0.04	283
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	46.5	46.5	< 0.005	< 0.005	0.01	46.8

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02	0.01	0.01	0.15	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	39.9	39.9	< 0.005	< 0.005	0.12	40.5
Area	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
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	241	241	0.02	< 0.005	—	243
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	12.0	12.0	< 0.005	< 0.005	—	12.1
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.02	0.01	0.01	0.15	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	0.00	293	293	0.03	< 0.005	0.12	295
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02	0.01	0.01	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	38.2	38.2	< 0.005	< 0.005	< 0.005	38.7
Area	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	241	241	0.02	< 0.005	—	243
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	12.0	12.0	< 0.005	< 0.005	—	12.1
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.02	0.01	0.01	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	0.00	291	291	0.03	< 0.005	< 0.005	293
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	0.01	0.01	0.01	0.10	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	27.6	27.6	< 0.005	< 0.005	0.04	28.0
Area	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
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	241	241	0.02	< 0.005	—	243
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	12.0	12.0	< 0.005	< 0.005	—	12.1
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	0.01	0.01	0.10	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	0.00	281	281	0.03	< 0.005	0.04	283
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.57	4.57	< 0.005	< 0.005	0.01	4.64
Area	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
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	39.9	39.9	< 0.005	< 0.005	—	40.2
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	1.98	1.98	< 0.005	< 0.005	—	2.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	46.5	46.5	< 0.005	< 0.005	0.01	46.8

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02	0.01	0.01	0.15	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	39.9	39.9	< 0.005	< 0.005	0.12	40.5
Area	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
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	241	241	0.02	< 0.005	—	243
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	12.0	12.0	< 0.005	< 0.005	—	12.1
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.02	0.01	0.01	0.15	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	0.00	293	293	0.03	< 0.005	0.12	295
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	0.02	0.01	0.01	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	38.2	38.2	< 0.005	< 0.005	< 0.005	38.7
Area	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	241	241	0.02	< 0.005	—	243
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	12.0	12.0	< 0.005	< 0.005	—	12.1
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.02	0.01	0.01	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	0.00	291	291	0.03	< 0.005	< 0.005	293
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.01	0.01	0.01	0.10	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	27.6	27.6	< 0.005	< 0.005	0.04	28.0
Area	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
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	241	241	0.02	< 0.005	—	243
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	12.0	12.0	< 0.005	< 0.005	—	12.1
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	0.01	0.01	0.10	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	0.00	281	281	0.03	< 0.005	0.04	283
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.57	4.57	< 0.005	< 0.005	0.01	4.64
Area	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
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	39.9	39.9	< 0.005	< 0.005	—	40.2
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	1.98	1.98	< 0.005	< 0.005	—	2.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	46.5	46.5	< 0.005	< 0.005	0.01	46.8

3. Construction Emissions Details

3.1. Remove Concrete and In/Outlets (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.77	3.17	29.9	29.8	0.05	1.25	—	1.25	1.15	—	1.15	—	5,065	5,065	0.21	0.04	—	5,082
Demolition	—	—	—	—	—	—	1.25	1.25	—	0.19	0.19	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.85	1.86	< 0.005	0.19	0.19	—	13.6	13.6	< 0.005	< 0.005	0.04	14.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.18	1.72	1.71	< 0.005	0.07	—	0.07	0.07	—	0.07	—	291	291	0.01	< 0.005	—	292
Demolition	—	—	—	—	—	—	0.07	0.07	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.10	0.10	< 0.005	0.01	0.01	—	0.78	0.78	< 0.005	< 0.005	< 0.005	0.81
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.31	0.31	< 0.005	0.01	—	0.01	0.01	—	0.01	—	48.2	48.2	< 0.005	< 0.005	—	48.4
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.13	0.13	< 0.005	< 0.005	< 0.005	0.13
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.48	0.43	0.43	6.96	0.00	0.00	1.31	1.31	0.00	0.31	0.31	—	1,383	1,383	0.06	0.05	5.06	1,403
Vendor	0.02	0.01	0.36	0.18	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	317	317	0.01	0.04	0.87	332
Hauling	0.05	0.01	0.85	0.33	< 0.005	0.01	0.19	0.19	0.01	0.05	0.06	—	693	693	0.04	0.11	1.61	728
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.03	0.36	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	76.5	76.5	< 0.005	< 0.005	0.13	77.5
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	18.3	18.3	< 0.005	< 0.005	0.02	19.1
Hauling	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	39.9	39.9	< 0.005	0.01	0.04	41.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.7	12.7	< 0.005	< 0.005	0.02	12.8
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.02	3.02	< 0.005	< 0.005	< 0.005	3.16
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.60	6.60	< 0.005	< 0.005	0.01	6.92

3.2. Remove Concrete and In/Outlets (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.63	0.63	16.9	28.1	0.05	0.20	—	0.20	0.19	—	0.19	—	5,065	5,065	0.21	0.04	—	5,082
Demolition	—	—	—	—	—	—	1.25	1.25	—	0.19	0.19	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.85	1.86	< 0.005	0.19	0.19	—	13.6	13.6	< 0.005	< 0.005	0.04	14.1

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.97	1.62	< 0.005	0.01	—	0.01	0.01	—	0.01	—	291	291	0.01	< 0.005	—	292
Demolition	—	—	—	—	—	—	0.07	0.07	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.10	0.10	< 0.005	0.01	0.01	—	0.78	0.78	< 0.005	< 0.005	< 0.005	0.81
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.18	0.30	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	48.2	48.2	< 0.005	< 0.005	—	48.4
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.13	0.13	< 0.005	< 0.005	< 0.005	0.13
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.48	0.43	0.43	6.96	0.00	0.00	1.31	1.31	0.00	0.31	0.31	—	1,383	1,383	0.06	0.05	5.06	1,403
Vendor	0.02	0.01	0.36	0.18	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	317	317	0.01	0.04	0.87	332
Hauling	0.05	0.01	0.85	0.33	< 0.005	0.01	0.19	0.19	0.01	0.05	0.06	—	693	693	0.04	0.11	1.61	728
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.03	0.36	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	76.5	76.5	< 0.005	< 0.005	0.13	77.5

Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	18.3	18.3	< 0.005	< 0.005	0.02	19.1
Hauling	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	39.9	39.9	< 0.005	0.01	0.04	41.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.7	12.7	< 0.005	< 0.005	0.02	12.8
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.02	3.02	< 0.005	< 0.005	< 0.005	3.16
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.60	6.60	< 0.005	< 0.005	0.01	6.92

3.3. Mobilization (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.42	0.36	3.41	3.69	0.01	0.14	—	0.14	0.13	—	0.13	—	615	615	0.02	< 0.005	—	618
Dust From Material Movement	—	—	—	—	—	—	0.43	0.43	—	0.22	0.22	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.85	1.86	< 0.005	0.19	0.19	—	13.6	13.6	< 0.005	< 0.005	0.04	14.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	38.8	38.8	< 0.005	< 0.005	—	38.9

Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	0.86	0.86	< 0.005	< 0.005	< 0.005	0.89
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.42	6.42	< 0.005	< 0.005	—	6.44
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.15
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.13	2.09	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	415	415	0.02	0.01	1.52	421
Vendor	0.02	0.01	0.36	0.18	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	317	317	0.01	0.04	0.87	332
Hauling	0.02	< 0.005	0.34	0.13	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	277	277	0.02	0.04	0.64	291
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	25.1	25.1	< 0.005	< 0.005	0.04	25.5
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.0	20.0	< 0.005	< 0.005	0.02	20.9
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	17.5	17.5	< 0.005	< 0.005	0.02	18.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.16	4.16	< 0.005	< 0.005	0.01	4.22

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.31	3.31	< 0.005	< 0.005	< 0.005	3.46
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.89	2.89	< 0.005	< 0.005	< 0.005	3.03

3.4. Mobilization (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.08	2.13	3.58	0.01	0.02	—	0.02	0.02	—	0.02	—	615	615	0.02	< 0.005	—	618
Dust From Material Movement	—	—	—	—	—	—	0.43	0.43	—	0.22	0.22	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.85	1.86	< 0.005	0.19	0.19	—	13.6	13.6	< 0.005	< 0.005	0.04	14.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.13	0.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38.8	38.8	< 0.005	< 0.005	—	38.9
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	0.86	0.86	< 0.005	< 0.005	< 0.005	0.89

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.42	6.42	< 0.005	< 0.005	—	6.44
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.15
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.13	2.09	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	415	415	0.02	0.01	1.52	421
Vendor	0.02	0.01	0.36	0.18	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	317	317	0.01	0.04	0.87	332
Hauling	0.02	< 0.005	0.34	0.13	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	277	277	0.02	0.04	0.64	291
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	25.1	25.1	< 0.005	< 0.005	0.04	25.5
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.0	20.0	< 0.005	< 0.005	0.02	20.9
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	17.5	17.5	< 0.005	< 0.005	0.02	18.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.16	4.16	< 0.005	< 0.005	0.01	4.22
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.31	3.31	< 0.005	< 0.005	< 0.005	3.46
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.89	2.89	< 0.005	< 0.005	< 0.005	3.03

3.5. Lake and Pond Draining (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.72	0.59	4.77	3.15	0.01	0.19	—	0.19	0.18	—	0.18	—	623	623	0.03	0.01	—	625
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.27	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	35.8	35.8	< 0.005	< 0.005	—	36.0
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.93	5.93	< 0.005	< 0.005	—	5.96

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.13	2.09	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	415	415	0.02	0.01	1.52	421
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	23.0	23.0	< 0.005	< 0.005	0.04	23.3
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.80	3.80	< 0.005	< 0.005	0.01	3.85
Vendor	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
Hauling	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

3.6. Lake and Pond Draining (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.72	0.59	4.77	3.15	0.01	0.19	—	0.19	0.18	—	0.18	—	623	623	0.03	0.01	—	625
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.27	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	35.8	35.8	< 0.005	< 0.005	—	36.0
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.93	5.93	< 0.005	< 0.005	—	5.96
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.13	2.09	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	415	415	0.02	0.01	1.52	421
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	23.0	23.0	< 0.005	< 0.005	0.04	23.3
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.80	3.80	< 0.005	< 0.005	0.01	3.85
Vendor	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
Hauling	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

3.7. Clear and Grub (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	4.25	3.57	34.1	36.9	0.06	1.41	—	1.41	1.30	—	1.30	—	6,154	6,154	0.25	0.05	—	6,175
Dust From Material Movement	—	—	—	—	—	—	4.26	4.26	—	2.19	2.19	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.85	1.86	< 0.005	0.19	0.19	—	13.6	13.6	< 0.005	< 0.005	0.04	14.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	0.21	1.96	2.12	< 0.005	0.08	—	0.08	0.07	—	0.07	—	354	354	0.01	< 0.005	—	355
Dust From Material Movement	—	—	—	—	—	—	0.25	0.25	—	0.13	0.13	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.10	0.10	< 0.005	0.01	0.01	—	0.78	0.78	< 0.005	< 0.005	< 0.005	0.81
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.36	0.39	< 0.005	0.01	—	0.01	0.01	—	0.01	—	58.6	58.6	< 0.005	< 0.005	—	58.8
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.13	0.13	< 0.005	< 0.005	< 0.005	0.13
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.48	0.43	0.43	6.96	0.00	0.00	1.31	1.31	0.00	0.31	0.31	—	1,383	1,383	0.06	0.05	5.06	1,403
Vendor	0.02	0.01	0.36	0.18	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	317	317	0.01	0.04	0.87	332
Hauling	0.13	0.03	2.04	0.79	0.01	0.02	0.44	0.47	0.02	0.12	0.14	—	1,663	1,663	0.09	0.26	3.86	1,746
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.03	0.36	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	76.5	76.5	< 0.005	< 0.005	0.13	77.5
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	18.3	18.3	< 0.005	< 0.005	0.02	19.1
Hauling	0.01	< 0.005	0.12	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	95.7	95.7	0.01	0.02	0.10	100
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.7	12.7	< 0.005	< 0.005	0.02	12.8
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.02	3.02	< 0.005	< 0.005	< 0.005	3.16
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.8	15.8	< 0.005	< 0.005	0.02	16.6

3.8. Clear and Grub (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	0.80	21.3	35.8	0.06	0.22	—	0.22	0.21	—	0.21	—	6,154	6,154	0.25	0.05	—	6,175

Dust From Material Movement	—	—	—	—	—	—	4.26	4.26	—	2.19	2.19	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.85	1.86	< 0.005	0.19	0.19	—	13.6	13.6	< 0.005	< 0.005	0.04	14.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.05	1.23	2.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	354	354	0.01	< 0.005	—	355
Dust From Material Movement	—	—	—	—	—	—	0.25	0.25	—	0.13	0.13	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.10	0.10	< 0.005	0.01	0.01	—	0.78	0.78	< 0.005	< 0.005	< 0.005	0.81
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.22	0.38	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	58.6	58.6	< 0.005	< 0.005	—	58.8
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.13	0.13	< 0.005	< 0.005	< 0.005	0.13
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.48	0.43	0.43	6.96	0.00	0.00	1.31	1.31	0.00	0.31	0.31	—	1,383	1,383	0.06	0.05	5.06	1,403

Vendor	0.02	0.01	0.36	0.18	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	317	317	0.01	0.04	0.87	332
Hauling	0.13	0.03	2.04	0.79	0.01	0.02	0.44	0.47	0.02	0.12	0.14	—	1,663	1,663	0.09	0.26	3.86	1,746
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.03	0.36	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	76.5	76.5	< 0.005	< 0.005	0.13	77.5
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	18.3	18.3	< 0.005	< 0.005	0.02	19.1
Hauling	0.01	< 0.005	0.12	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	95.7	95.7	0.01	0.02	0.10	100
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.7	12.7	< 0.005	< 0.005	0.02	12.8
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.02	3.02	< 0.005	< 0.005	< 0.005	3.16
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.8	15.8	< 0.005	< 0.005	0.02	16.6

3.9. Dewatering (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	1.86	1.86	< 0.005	0.19	0.19	—	18.6	18.6	< 0.005	< 0.005	0.04	19.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	1.86	1.86	< 0.005	0.19	0.19	—	18.6	18.6	< 0.005	< 0.005	< 0.005	19.5
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.91	0.91	< 0.005	0.09	0.09	—	9.74	9.74	< 0.005	< 0.005	0.01	10.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.17	0.17	< 0.005	0.02	0.02	—	1.61	1.61	< 0.005	< 0.005	< 0.005	1.69
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.10. Dewatering (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	1.86	1.86	< 0.005	0.19	0.19	—	18.6	18.6	< 0.005	< 0.005	0.04	19.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	1.86	1.86	< 0.005	0.19	0.19	—	18.6	18.6	< 0.005	< 0.005	< 0.005	19.5

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.91	0.91	< 0.005	0.09	0.09	—	9.74	9.74	< 0.005	< 0.005	0.01	10.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.17	0.17	< 0.005	0.02	0.02	—	1.61	1.61	< 0.005	< 0.005	< 0.005	1.69
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	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
Vendor	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
Hauling	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

3.11. Remove Contaminated Material (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.77	3.17	29.9	29.8	0.05	1.25	—	1.25	1.15	—	1.15	—	5,065	5,065	0.21	0.04	—	5,082
Dust From Material Movement	—	—	—	—	—	—	4.26	4.26	—	2.19	2.19	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.85	1.86	< 0.005	0.19	0.19	—	13.6	13.6	< 0.005	< 0.005	< 0.005	14.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.47	0.47	< 0.005	0.02	—	0.02	0.02	—	0.02	—	79.3	79.3	< 0.005	< 0.005	—	79.6
Dust From Material Movement	—	—	—	—	—	—	0.07	0.07	—	0.03	0.03	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	0.22
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.1	13.1	< 0.005	< 0.005	—	13.2
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.04	0.04	< 0.005	< 0.005	< 0.005	0.04
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.47	0.42	0.48	5.90	0.00	0.00	1.31	1.31	0.00	0.31	0.31	—	1,311	1,311	0.06	0.05	0.13	1,327
Vendor	0.02	0.01	0.38	0.18	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	317	317	0.01	0.04	0.02	331
Hauling	2.59	0.31	47.6	14.8	0.28	0.56	11.8	12.4	0.56	3.24	3.80	—	43,191	43,191	2.00	6.76	2.66	45,259
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	20.8	20.8	< 0.005	< 0.005	0.03	21.1
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.97	4.97	< 0.005	< 0.005	0.01	5.19
Hauling	0.04	< 0.005	0.76	0.23	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	676	676	0.03	0.11	0.69	709
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.45	3.45	< 0.005	< 0.005	0.01	3.49
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.82	0.82	< 0.005	< 0.005	< 0.005	0.86
Hauling	0.01	< 0.005	0.14	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	112	112	0.01	0.02	0.11	117

3.12. Remove Contaminated Material (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.63	0.63	16.9	28.1	0.05	0.20	—	0.20	0.19	—	0.19	—	5,065	5,065	0.21	0.04	—	5,082
Dust From Material Movement	—	—	—	—	—	—	4.26	4.26	—	2.19	2.19	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.85	1.86	< 0.005	0.19	0.19	—	13.6	13.6	< 0.005	< 0.005	< 0.005	14.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.26	0.44	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	79.3	79.3	< 0.005	< 0.005	—	79.6
Dust From Material Movement	—	—	—	—	—	—	0.07	0.07	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	0.22
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	0.05	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.1	13.1	< 0.005	< 0.005	—	13.2
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.04	0.04	< 0.005	< 0.005	< 0.005	0.04
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.47	0.42	0.48	5.90	0.00	0.00	1.31	1.31	0.00	0.31	0.31	—	1,311	1,311	0.06	0.05	0.13	1,327
Vendor	0.02	0.01	0.38	0.18	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	317	317	0.01	0.04	0.02	331
Hauling	2.59	0.31	47.6	14.8	0.28	0.56	11.8	12.4	0.56	3.24	3.80	—	43,191	43,191	2.00	6.76	2.66	45,259
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	20.8	20.8	< 0.005	< 0.005	0.03	21.1
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.97	4.97	< 0.005	< 0.005	0.01	5.19
Hauling	0.04	< 0.005	0.76	0.23	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	676	676	0.03	0.11	0.69	709
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.45	3.45	< 0.005	< 0.005	0.01	3.49
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.82	0.82	< 0.005	< 0.005	< 0.005	0.86
Hauling	0.01	< 0.005	0.14	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	112	112	0.01	0.02	0.11	117

3.13. Remove Contaminated Material (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.59	3.02	27.8	28.6	0.05	1.14	—	1.14	1.05	—	1.05	—	5,067	5,067	0.21	0.04	—	5,084
Dust From Material Movement	—	—	—	—	—	—	4.26	4.26	—	2.19	2.19	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.85	1.86	< 0.005	0.19	0.19	—	13.4	13.4	< 0.005	< 0.005	< 0.005	13.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	1.14	1.18	< 0.005	0.05	—	0.05	0.04	—	0.04	—	208	208	0.01	< 0.005	—	209
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.09	0.09	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	0.55	0.55	< 0.005	< 0.005	< 0.005	0.57
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.21	< 0.005	0.01	—	0.01	0.01	—	0.01	—	34.5	34.5	< 0.005	< 0.005	—	34.6

Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.09
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.42	0.37	0.44	5.51	0.00	0.00	1.31	1.31	0.00	0.31	0.31	—	1,284	1,284	0.06	0.05	0.12	1,300
Vendor	0.02	0.01	0.36	0.17	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	312	312	0.01	0.04	0.02	326
Hauling	2.31	0.31	45.7	14.3	0.28	0.56	11.8	12.4	0.56	3.24	3.80	—	42,405	42,405	2.00	6.76	2.53	44,473
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.02	0.24	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	53.6	53.6	< 0.005	< 0.005	0.08	54.3
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.8	12.8	< 0.005	< 0.005	0.01	13.4
Hauling	0.09	0.01	1.91	0.59	0.01	0.02	0.48	0.50	0.02	0.13	0.15	—	1,743	1,743	0.08	0.28	1.72	1,829
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.87	8.87	< 0.005	< 0.005	0.01	8.99
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.12	2.12	< 0.005	< 0.005	< 0.005	2.22
Hauling	0.02	< 0.005	0.35	0.11	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	289	289	0.01	0.05	0.28	303

3.14. Remove Contaminated Material (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.63	0.63	16.9	28.1	0.05	0.20	—	0.20	0.19	—	0.19	—	5,067	5,067	0.21	0.04	—	5,084
Dust From Material Movement	—	—	—	—	—	—	4.26	4.26	—	2.19	2.19	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.85	1.86	< 0.005	0.19	0.19	—	13.4	13.4	< 0.005	< 0.005	< 0.005	13.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.69	1.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	208	208	0.01	< 0.005	—	209
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.09	0.09	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	0.55	0.55	< 0.005	< 0.005	< 0.005	0.57
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.13	0.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	34.5	34.5	< 0.005	< 0.005	—	34.6
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.09
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.42	0.37	0.44	5.51	0.00	0.00	1.31	1.31	0.00	0.31	0.31	—	1,284	1,284	0.06	0.05	0.12	1,300
Vendor	0.02	0.01	0.36	0.17	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	312	312	0.01	0.04	0.02	326
Hauling	2.31	0.31	45.7	14.3	0.28	0.56	11.8	12.4	0.56	3.24	3.80	—	42,405	42,405	2.00	6.76	2.53	44,473
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.02	0.24	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	53.6	53.6	< 0.005	< 0.005	0.08	54.3
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.8	12.8	< 0.005	< 0.005	0.01	13.4
Hauling	0.09	0.01	1.91	0.59	0.01	0.02	0.48	0.50	0.02	0.13	0.15	—	1,743	1,743	0.08	0.28	1.72	1,829
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.87	8.87	< 0.005	< 0.005	0.01	8.99
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.12	2.12	< 0.005	< 0.005	< 0.005	2.22
Hauling	0.02	< 0.005	0.35	0.11	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	289	289	0.01	0.05	0.28	303

3.15. Remove sediment (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	3.59	3.02	27.8	28.6	0.05	1.14	—	1.14	1.05	—	1.05	—	5,067	5,067	0.21	0.04	—	5,084
Dust From Material Movement	—	—	—	—	—	—	4.26	4.26	—	2.19	2.19	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.85	1.86	< 0.005	0.19	0.19	—	13.4	13.4	< 0.005	< 0.005	0.04	13.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.59	3.02	27.8	28.6	0.05	1.14	—	1.14	1.05	—	1.05	—	5,067	5,067	0.21	0.04	—	5,084
Dust From Material Movement	—	—	—	—	—	—	4.26	4.26	—	2.19	2.19	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.85	1.86	< 0.005	0.19	0.19	—	13.4	13.4	< 0.005	< 0.005	< 0.005	13.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.70	0.59	5.41	5.57	0.01	0.22	—	0.22	0.20	—	0.20	—	986	986	0.04	0.01	—	989
Dust From Material Movement	—	—	—	—	—	—	0.83	0.83	—	0.43	0.43	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.34	0.34	< 0.005	0.03	0.03	—	2.60	2.60	< 0.005	< 0.005	< 0.005	2.69
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	0.13	0.11	0.99	1.02	< 0.005	0.04	—	0.04	0.04	—	0.04	—	163	163	0.01	< 0.005	—	164
Dust From Material Movement	—	—	—	—	—	—	0.15	0.15	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.45
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.42	0.37	0.39	6.46	0.00	0.00	1.31	1.31	0.00	0.31	0.31	—	1,355	1,355	0.06	0.05	4.58	1,375
Vendor	0.02	0.01	0.34	0.17	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	312	312	0.01	0.04	0.84	326
Hauling	3.12	0.53	56.1	19.7	0.34	0.67	14.2	14.9	0.67	3.88	4.56	—	51,258	51,258	2.57	8.18	117	53,877
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.42	0.37	0.44	5.51	0.00	0.00	1.31	1.31	0.00	0.31	0.31	—	1,284	1,284	0.06	0.05	0.12	1,300
Vendor	0.02	0.01	0.36	0.17	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	312	312	0.01	0.04	0.02	326
Hauling	3.09	0.51	58.3	19.8	0.34	0.67	14.2	14.9	0.67	3.88	4.56	—	51,267	51,267	2.57	8.18	3.03	53,772
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.12	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	254	254	0.01	0.01	0.39	257
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	60.7	60.7	< 0.005	0.01	0.07	63.4
Hauling	0.60	0.10	11.5	3.84	0.07	0.13	2.73	2.86	0.13	0.75	0.88	—	9,971	9,971	0.50	1.59	9.76	10,468
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.02	0.20	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	42.0	42.0	< 0.005	< 0.005	0.06	42.5
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.0	10.0	< 0.005	< 0.005	0.01	10.5
Hauling	0.11	0.02	2.10	0.70	0.01	0.02	0.50	0.52	0.02	0.14	0.16	—	1,651	1,651	0.08	0.26	1.62	1,733

3.16. Remove sediment (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.63	0.63	16.9	28.1	0.05	0.20	—	0.20	0.19	—	0.19	—	5,067	5,067	0.21	0.04	—	5,084
Dust From Material Movement	—	—	—	—	—	—	4.26	4.26	—	2.19	2.19	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.85	1.86	< 0.005	0.19	0.19	—	13.4	13.4	< 0.005	< 0.005	0.04	13.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.63	0.63	16.9	28.1	0.05	0.20	—	0.20	0.19	—	0.19	—	5,067	5,067	0.21	0.04	—	5,084
Dust From Material Movement	—	—	—	—	—	—	4.26	4.26	—	2.19	2.19	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.85	1.86	< 0.005	0.19	0.19	—	13.4	13.4	< 0.005	< 0.005	< 0.005	13.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.12	3.28	5.47	0.01	0.04	—	0.04	0.04	—	0.04	—	986	986	0.04	0.01	—	989

Dust From Material Movement	—	—	—	—	—	—	0.83	0.83	—	0.43	0.43	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.34	0.34	< 0.005	0.03	0.03	—	2.60	2.60	< 0.005	< 0.005	< 0.005	2.69
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.60	1.00	< 0.005	0.01	—	0.01	0.01	—	0.01	—	163	163	0.01	< 0.005	—	164
Dust From Material Movement	—	—	—	—	—	—	0.15	0.15	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.45
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.42	0.37	0.39	6.46	0.00	0.00	1.31	1.31	0.00	0.31	0.31	—	1,355	1,355	0.06	0.05	4.58	1,375
Vendor	0.02	0.01	0.34	0.17	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	312	312	0.01	0.04	0.84	326
Hauling	3.12	0.53	56.1	19.7	0.34	0.67	14.2	14.9	0.67	3.88	4.56	—	51,258	51,258	2.57	8.18	117	53,877
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.42	0.37	0.44	5.51	0.00	0.00	1.31	1.31	0.00	0.31	0.31	—	1,284	1,284	0.06	0.05	0.12	1,300
Vendor	0.02	0.01	0.36	0.17	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	312	312	0.01	0.04	0.02	326
Hauling	3.09	0.51	58.3	19.8	0.34	0.67	14.2	14.9	0.67	3.88	4.56	—	51,267	51,267	2.57	8.18	3.03	53,772
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.09	1.12	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	254	254	0.01	0.01	0.39	257
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	60.7	60.7	< 0.005	0.01	0.07	63.4

Hauling	0.60	0.10	11.5	3.84	0.07	0.13	2.73	2.86	0.13	0.75	0.88	—	9,971	9,971	0.50	1.59	9.76	10,468
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.02	0.20	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	42.0	42.0	< 0.005	< 0.005	0.06	42.5
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.0	10.0	< 0.005	< 0.005	0.01	10.5
Hauling	0.11	0.02	2.10	0.70	0.01	0.02	0.50	0.52	0.02	0.14	0.16	—	1,651	1,651	0.08	0.26	1.62	1,733

3.17. New Structures and Pipes (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.45	0.38	3.87	7.16	0.01	0.13	—	0.13	0.12	—	0.12	—	1,089	1,089	0.04	0.01	—	1,093
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.85	1.86	< 0.005	0.19	0.19	—	13.4	13.4	< 0.005	< 0.005	0.04	13.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.06	0.65	1.20	< 0.005	0.02	—	0.02	0.02	—	0.02	—	182	182	0.01	< 0.005	—	183
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.29	0.29	< 0.005	0.03	0.03	—	2.23	2.23	< 0.005	< 0.005	< 0.005	2.31
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.01	0.12	0.22	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	30.1	30.1	< 0.005	< 0.005	—	30.2
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	0.37	0.37	< 0.005	< 0.005	< 0.005	0.38
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.15	0.16	2.58	0.00	0.00	0.52	0.52	0.00	0.12	0.12	—	542	542	0.02	0.02	1.83	550
Vendor	0.04	0.01	0.55	0.27	< 0.005	0.01	0.14	0.14	< 0.005	0.04	0.04	—	499	499	0.02	0.07	1.35	522
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.03	0.39	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	87.1	87.1	< 0.005	< 0.005	0.13	88.3
Vendor	0.01	< 0.005	0.10	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	83.4	83.4	< 0.005	0.01	0.10	87.1
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.4	14.4	< 0.005	< 0.005	0.02	14.6
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.8	13.8	< 0.005	< 0.005	0.02	14.4
Hauling	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

3.18. New Structures and Pipes (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.16	4.42	7.61	0.01	0.02	—	0.02	0.02	—	0.02	—	1,089	1,089	0.04	0.01	—	1,093
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.85	1.86	< 0.005	0.19	0.19	—	13.4	13.4	< 0.005	< 0.005	0.04	13.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.74	1.27	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	182	182	0.01	< 0.005	—	183
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.29	0.29	< 0.005	0.03	0.03	—	2.23	2.23	< 0.005	< 0.005	< 0.005	2.31
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.13	0.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	30.1	30.1	< 0.005	< 0.005	—	30.2
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	0.37	0.37	< 0.005	< 0.005	< 0.005	0.38
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.15	0.16	2.58	0.00	0.00	0.52	0.52	0.00	0.12	0.12	—	542	542	0.02	0.02	1.83	550
Vendor	0.04	0.01	0.55	0.27	< 0.005	0.01	0.14	0.14	< 0.005	0.04	0.04	—	499	499	0.02	0.07	1.35	522
Hauling	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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.03	0.39	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	87.1	87.1	< 0.005	< 0.005	0.13	88.3
Vendor	0.01	< 0.005	0.10	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	83.4	83.4	< 0.005	0.01	0.10	87.1
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.4	14.4	< 0.005	< 0.005	0.02	14.6
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.8	13.8	< 0.005	< 0.005	0.02	14.4
Hauling	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

3.19. Install river rock, water quality systems, and liner (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.45	0.38	3.87	7.16	0.01	0.13	—	0.13	0.12	—	0.12	—	1,089	1,089	0.04	0.01	—	1,093
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	0.02	0.02	0.17	0.31	< 0.005	0.01	—	0.01	0.01	—	0.01	—	47.7	47.7	< 0.005	< 0.005	—	47.9
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.90	7.90	< 0.005	< 0.005	—	7.93
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.15	0.16	2.58	0.00	0.00	0.52	0.52	0.00	0.12	0.12	—	542	542	0.02	0.02	1.83	550
Vendor	0.03	0.01	0.41	0.20	< 0.005	0.01	0.10	0.11	< 0.005	0.03	0.03	—	374	374	0.02	0.05	1.01	391
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	22.9	22.9	< 0.005	< 0.005	0.03	23.2
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	16.4	16.4	< 0.005	< 0.005	0.02	17.1
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.78	3.78	< 0.005	< 0.005	0.01	3.83
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.72	2.72	< 0.005	< 0.005	< 0.005	2.84
Hauling	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

3.20. Install river rock, water quality systems, and liner (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.16	4.42	7.61	0.01	0.02	—	0.02	0.02	—	0.02	—	1,089	1,089	0.04	0.01	—	1,093
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.19	0.33	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	47.7	47.7	< 0.005	< 0.005	—	47.9
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.90	7.90	< 0.005	< 0.005	—	7.93
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.17	0.15	0.16	2.58	0.00	0.00	0.52	0.52	0.00	0.12	0.12	—	542	542	0.02	0.02	1.83	550
Vendor	0.03	0.01	0.41	0.20	< 0.005	0.01	0.10	0.11	< 0.005	0.03	0.03	—	374	374	0.02	0.05	1.01	391
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	22.9	22.9	< 0.005	< 0.005	0.03	23.2
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	16.4	16.4	< 0.005	< 0.005	0.02	17.1
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.78	3.78	< 0.005	< 0.005	0.01	3.83
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.72	2.72	< 0.005	< 0.005	< 0.005	2.84
Hauling	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

3.21. Install landscaping and electrical (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.45	0.38	3.87	7.16	0.01	0.13	—	0.13	0.12	—	0.12	—	1,089	1,089	0.04	0.01	—	1,093
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.85	1.86	< 0.005	0.19	0.19	—	13.4	13.4	< 0.005	< 0.005	0.04	13.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.45	0.38	3.87	7.16	0.01	0.13	—	0.13	0.12	—	0.12	—	1,089	1,089	0.04	0.01	—	1,093
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.85	1.86	< 0.005	0.19	0.19	—	13.4	13.4	< 0.005	< 0.005	< 0.005	13.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.08	0.06	0.65	1.20	< 0.005	0.02	—	0.02	0.02	—	0.02	—	182	182	0.01	< 0.005	—	183
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.29	0.29	< 0.005	0.03	0.03	—	2.23	2.23	< 0.005	< 0.005	< 0.005	2.31
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.01	0.01	0.12	0.22	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	30.1	30.1	< 0.005	< 0.005	—	30.2
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	0.37	0.37	< 0.005	< 0.005	< 0.005	0.38
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.15	0.16	2.58	0.00	0.00	0.52	0.52	0.00	0.12	0.12	—	542	542	0.02	0.02	1.83	550
Vendor	0.03	0.01	0.41	0.20	< 0.005	0.01	0.10	0.11	< 0.005	0.03	0.03	—	374	374	0.02	0.05	1.01	391
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.15	0.17	2.20	0.00	0.00	0.52	0.52	0.00	0.12	0.12	—	514	514	0.02	0.02	0.05	520
Vendor	0.03	0.01	0.43	0.20	< 0.005	0.01	0.10	0.11	< 0.005	0.03	0.03	—	374	374	0.02	0.05	0.03	391
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.03	0.02	0.03	0.39	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	87.1	87.1	< 0.005	< 0.005	0.13	88.3
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	62.5	62.5	< 0.005	0.01	0.07	65.3
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.4	14.4	< 0.005	< 0.005	0.02	14.6
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.4	10.4	< 0.005	< 0.005	0.01	10.8
Hauling	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

3.22. Install landscaping and electrical (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.16	4.42	7.61	0.01	0.02	—	0.02	0.02	—	0.02	—	1,089	1,089	0.04	0.01	—	1,093
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.85	1.86	< 0.005	0.19	0.19	—	13.4	13.4	< 0.005	< 0.005	0.04	13.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.16	4.42	7.61	0.01	0.02	—	0.02	0.02	—	0.02	—	1,089	1,089	0.04	0.01	—	1,093
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.85	1.86	< 0.005	0.19	0.19	—	13.4	13.4	< 0.005	< 0.005	< 0.005	13.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.03	0.03	0.74	1.27	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	182	182	0.01	< 0.005	—	183
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.29	0.29	< 0.005	0.03	0.03	—	2.23	2.23	< 0.005	< 0.005	< 0.005	2.31
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.13	0.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	30.1	30.1	< 0.005	< 0.005	—	30.2
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	0.37	0.37	< 0.005	< 0.005	< 0.005	0.38
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.15	0.16	2.58	0.00	0.00	0.52	0.52	0.00	0.12	0.12	—	542	542	0.02	0.02	1.83	550
Vendor	0.03	0.01	0.41	0.20	< 0.005	0.01	0.10	0.11	< 0.005	0.03	0.03	—	374	374	0.02	0.05	1.01	391
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.15	0.17	2.20	0.00	0.00	0.52	0.52	0.00	0.12	0.12	—	514	514	0.02	0.02	0.05	520
Vendor	0.03	0.01	0.43	0.20	< 0.005	0.01	0.10	0.11	< 0.005	0.03	0.03	—	374	374	0.02	0.05	0.03	391
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.03	0.39	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	87.1	87.1	< 0.005	< 0.005	0.13	88.3
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	62.5	62.5	< 0.005	0.01	0.07	65.3
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.4	14.4	< 0.005	< 0.005	0.02	14.6
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.4	10.4	< 0.005	< 0.005	0.01	10.8

Hauling	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

3.23. Install signage bencing lighting (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.45	0.38	3.87	7.16	0.01	0.13	—	0.13	0.12	—	0.12	—	1,089	1,089	0.04	0.01	—	1,093
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.85	1.86	< 0.005	0.19	0.19	—	13.4	13.4	< 0.005	< 0.005	< 0.005	13.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.17	0.31	< 0.005	0.01	—	0.01	0.01	—	0.01	—	47.7	47.7	< 0.005	< 0.005	—	47.9
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.08	0.08	< 0.005	0.01	0.01	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.61
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	< 0.005	< 0.005	0.03	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.90	7.90	< 0.005	< 0.005	—	7.93
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.10	0.10	< 0.005	< 0.005	< 0.005	0.10
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.13	1.65	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	385	385	0.02	0.01	0.04	390
Vendor	0.04	0.02	0.61	0.29	< 0.005	0.01	0.15	0.15	< 0.005	0.04	0.04	—	530	530	0.02	0.08	0.04	553
Hauling	0.01	< 0.005	0.26	0.10	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	204	204	0.01	0.03	0.01	214
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.1	17.1	< 0.005	< 0.005	0.03	17.4
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.2	23.2	< 0.005	< 0.005	0.03	24.3
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.95	8.95	< 0.005	< 0.005	0.01	9.39
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.84	2.84	< 0.005	< 0.005	< 0.005	2.88
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.85	3.85	< 0.005	< 0.005	< 0.005	4.02
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.48	1.48	< 0.005	< 0.005	< 0.005	1.56

3.24. Install signage bencing lighting (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.16	4.42	7.61	0.01	0.02	—	0.02	0.02	—	0.02	—	1,089	1,089	0.04	0.01	—	1,093
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.85	1.86	< 0.005	0.19	0.19	—	13.4	13.4	< 0.005	< 0.005	< 0.005	13.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.19	0.33	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	47.7	47.7	< 0.005	< 0.005	—	47.9
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.08	0.08	< 0.005	0.01	0.01	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.61
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.90	7.90	< 0.005	< 0.005	—	7.93
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.10	0.10	< 0.005	< 0.005	< 0.005	0.10
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.13	1.65	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	385	385	0.02	0.01	0.04	390
Vendor	0.04	0.02	0.61	0.29	< 0.005	0.01	0.15	0.15	< 0.005	0.04	0.04	—	530	530	0.02	0.08	0.04	553
Hauling	0.01	< 0.005	0.26	0.10	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	204	204	0.01	0.03	0.01	214
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.1	17.1	< 0.005	< 0.005	0.03	17.4
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.2	23.2	< 0.005	< 0.005	0.03	24.3
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.95	8.95	< 0.005	< 0.005	0.01	9.39
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.84	2.84	< 0.005	< 0.005	< 0.005	2.88
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.85	3.85	< 0.005	< 0.005	< 0.005	4.02
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.48	1.48	< 0.005	< 0.005	< 0.005	1.56

3.25. Final inspection (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.85	1.86	< 0.005	0.19	0.19	—	13.4	13.4	< 0.005	< 0.005	< 0.005	13.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	0.40	0.40	< 0.005	< 0.005	< 0.005	0.42
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.02	0.22	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	51.4	51.4	< 0.005	< 0.005	< 0.005	52.0
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.57	1.57	< 0.005	< 0.005	< 0.005	1.59
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	< 0.005	0.26
Vendor	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
Hauling	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

3.26. Final inspection (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.85	1.86	< 0.005	0.19	0.19	—	13.4	13.4	< 0.005	< 0.005	< 0.005	13.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	0.40	0.40	< 0.005	< 0.005	< 0.005	0.42
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.02	0.22	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	51.4	51.4	< 0.005	< 0.005	< 0.005	52.0
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.57	1.57	< 0.005	< 0.005	< 0.005	1.59
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	< 0.005	0.26
Vendor	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
Hauling	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

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	0.02	0.01	0.01	0.15	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	39.9	39.9	< 0.005	< 0.005	0.12	40.5
Total	0.02	0.01	0.01	0.15	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	39.9	39.9	< 0.005	< 0.005	0.12	40.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	0.02	0.01	0.01	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	38.2	38.2	< 0.005	< 0.005	< 0.005	38.7
Total	0.02	0.01	0.01	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	38.2	38.2	< 0.005	< 0.005	< 0.005	38.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.57	4.57	< 0.005	< 0.005	0.01	4.64
Total	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.57	4.57	< 0.005	< 0.005	0.01	4.64

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	0.02	0.01	0.01	0.15	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	39.9	39.9	< 0.005	< 0.005	0.12	40.5
Total	0.02	0.01	0.01	0.15	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	39.9	39.9	< 0.005	< 0.005	0.12	40.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	0.02	0.01	0.01	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	38.2	38.2	< 0.005	< 0.005	< 0.005	38.7
Total	0.02	0.01	0.01	0.14	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	38.2	38.2	< 0.005	< 0.005	< 0.005	38.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.57	4.57	< 0.005	< 0.005	0.01	4.64
Total	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.57	4.57	< 0.005	< 0.005	0.01	4.64

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	241	241	0.02	< 0.005	—	243
Total	—	—	—	—	—	—	—	—	—	—	—	—	241	241	0.02	< 0.005	—	243
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	241	241	0.02	< 0.005	—	243
Total	—	—	—	—	—	—	—	—	—	—	—	—	241	241	0.02	< 0.005	—	243
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	39.9	39.9	< 0.005	< 0.005	—	40.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	39.9	39.9	< 0.005	< 0.005	—	40.2

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	241	241	0.02	< 0.005	—	243
Total	—	—	—	—	—	—	—	—	—	—	—	—	241	241	0.02	< 0.005	—	243
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	241	241	0.02	< 0.005	—	243

Total	—	—	—	—	—	—	—	—	—	—	—	—	241	241	0.02	< 0.005	—	243
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	39.9	39.9	< 0.005	< 0.005	—	40.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	39.9	39.9	< 0.005	< 0.005	—	40.2

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	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
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

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	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
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

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architect Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape 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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape 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
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

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape 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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landsca 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
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

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	12.0	12.0	< 0.005	< 0.005	—	12.1
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	12.0	12.0	< 0.005	< 0.005	—	12.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	12.0	12.0	< 0.005	< 0.005	—	12.1
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	12.0	12.0	< 0.005	< 0.005	—	12.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	1.98	1.98	< 0.005	< 0.005	—	2.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	1.98	1.98	< 0.005	< 0.005	—	2.00

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	12.0	12.0	< 0.005	< 0.005	—	12.1
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	12.0	12.0	< 0.005	< 0.005	—	12.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	12.0	12.0	< 0.005	< 0.005	—	12.1
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	12.0	12.0	< 0.005	< 0.005	—	12.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	1.98	1.98	< 0.005	< 0.005	—	2.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	1.98	1.98	< 0.005	< 0.005	—	2.00

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Remove Concrete and In/Outlets	Demolition	7/1/2025	7/29/2025	5.00	21.0	—

Mobilization	Site Preparation	4/30/2025	5/30/2025	5.00	23.0	—
Lake and Pond Draining	Site Preparation	4/1/2025	4/29/2025	5.00	21.0	—
Clear and Grub	Site Preparation	6/2/2025	6/30/2025	5.00	21.0	—
Dewatering	Site Preparation	4/1/2025	12/23/2025	5.00	191	—
Remove Contaminated Material	Grading	12/24/2025	1/21/2026	5.00	21.0	—
Remove sediment	Grading	1/22/2026	4/30/2026	5.00	71.0	—
New Structures and Pipes	Building Construction	5/1/2026	7/24/2026	5.00	61.0	—
Install river rock, water quality systems, and liner	Building Construction	7/27/2026	8/17/2026	5.00	16.0	—
Install landscaping and electrical	Building Construction	8/18/2026	11/10/2026	5.00	61.0	—
Install signage bencing lighting	Building Construction	11/11/2026	12/2/2026	5.00	16.0	—
Final inspection	Building Construction	12/3/2026	12/17/2026	5.00	11.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Remove Concrete and In/Outlets	Excavators	Diesel	Average	3.00	10.0	36.0	0.38
Remove Concrete and In/Outlets	Rubber Tired Dozers	Diesel	Average	2.00	10.0	367	0.40
Remove Concrete and In/Outlets	Tractors/Loaders/Backhoes	Diesel	Average	3.00	10.0	84.0	0.37
Mobilization	Rubber Tired Dozers	Diesel	Average	2.00	1.00	367	0.40
Mobilization	Tractors/Loaders/Backhoes	Diesel	Average	6.00	1.00	84.0	0.37
Mobilization	Excavators	Diesel	Average	3.00	1.00	36.0	0.38
Lake and Pond Draining	Generator Sets	Diesel	Average	2.00	24.0	14.0	0.74

Clear and Grub	Rubber Tired Dozers	Diesel	Average	2.00	10.0	367	0.40
Clear and Grub	Tractors/Loaders/Backhoes	Diesel	Average	6.00	10.0	84.0	0.37
Clear and Grub	Excavators	Diesel	Average	3.00	10.0	36.0	0.38
Remove Contaminated Material	Excavators	Diesel	Average	3.00	10.0	36.0	0.38
Remove Contaminated Material	Rubber Tired Dozers	Diesel	Average	2.00	10.0	367	0.40
Remove Contaminated Material	Tractors/Loaders/Backhoes	Diesel	Average	3.00	10.0	84.0	0.37
Remove sediment	Excavators	Diesel	Average	3.00	10.0	36.0	0.38
Remove sediment	Rubber Tired Dozers	Diesel	Average	2.00	10.0	367	0.40
Remove sediment	Tractors/Loaders/Backhoes	Diesel	Average	3.00	10.0	84.0	0.37
New Structures and Pipes	Tractors/Loaders/Backhoes	Diesel	Average	3.00	10.0	84.0	0.37
Install river rock, water quality systems, and liner	Tractors/Loaders/Backhoes	Diesel	Average	3.00	10.0	84.0	0.37
Install landscaping and electrical	Tractors/Loaders/Backhoes	Diesel	Average	3.00	10.0	84.0	0.37
Install signage bencing lighting	Tractors/Loaders/Backhoes	Diesel	Average	3.00	10.0	84.0	0.37

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Remove Concrete and In/Outlets	Excavators	Diesel	Tier 4 Interim	3.00	10.0	36.0	0.38
Remove Concrete and In/Outlets	Rubber Tired Dozers	Diesel	Tier 4 Interim	2.00	10.0	367	0.40
Remove Concrete and In/Outlets	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	10.0	84.0	0.37
Mobilization	Rubber Tired Dozers	Diesel	Tier 4 Interim	2.00	1.00	367	0.40

Mobilization	Tractors/Loaders/Back	Diesel	Tier 4 Interim	6.00	1.00	84.0	0.37
Mobilization	Excavators	Diesel	Tier 4 Interim	3.00	1.00	36.0	0.38
Lake and Pond Draining	Generator Sets	Diesel	Average	2.00	24.0	14.0	0.74
Clear and Grub	Rubber Tired Dozers	Diesel	Tier 4 Interim	2.00	10.0	367	0.40
Clear and Grub	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	6.00	10.0	84.0	0.37
Clear and Grub	Excavators	Diesel	Tier 4 Interim	3.00	10.0	36.0	0.38
Remove Contaminated Material	Excavators	Diesel	Tier 4 Interim	3.00	10.0	36.0	0.38
Remove Contaminated Material	Rubber Tired Dozers	Diesel	Tier 4 Interim	2.00	10.0	367	0.40
Remove Contaminated Material	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	10.0	84.0	0.37
Remove sediment	Excavators	Diesel	Tier 4 Interim	3.00	10.0	36.0	0.38
Remove sediment	Rubber Tired Dozers	Diesel	Tier 4 Interim	2.00	10.0	367	0.40
Remove sediment	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	10.0	84.0	0.37
New Structures and Pipes	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	10.0	84.0	0.37
Install river rock, water quality systems, and liner	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	10.0	84.0	0.37
Install landscaping and electrical	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	10.0	84.0	0.37
Install signage bencing lighting	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	10.0	84.0	0.37

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix

Remove Concrete and In/Outlets	—	—	—	—
Remove Concrete and In/Outlets	Worker	100	18.5	LDA,LDT1,LDT2
Remove Concrete and In/Outlets	Vendor	10.0	10.2	HHDT,MHDT
Remove Concrete and In/Outlets	Hauling	10.0	20.0	HHDT
Remove Concrete and In/Outlets	Onsite truck	1.00	5.00	MHDT
Mobilization	—	—	—	—
Mobilization	Worker	30.0	18.5	LDA,LDT1,LDT2
Mobilization	Vendor	10.0	10.2	HHDT,MHDT
Mobilization	Hauling	4.00	20.0	HHDT
Mobilization	Onsite truck	1.00	5.00	MHDT
Remove Contaminated Material	—	—	—	—
Remove Contaminated Material	Worker	100	18.5	LDA,LDT1,LDT2
Remove Contaminated Material	Vendor	10.0	10.2	HHDT,MHDT
Remove Contaminated Material	Hauling	44.0	290	HHDT
Remove Contaminated Material	Onsite truck	1.00	5.00	MHDT
New Structures and Pipes	—	—	—	—
New Structures and Pipes	Worker	40.0	18.5	LDA,LDT1,LDT2
New Structures and Pipes	Vendor	16.0	10.2	HHDT,MHDT
New Structures and Pipes	Hauling	0.00	20.0	HHDT
New Structures and Pipes	Onsite truck	1.00	5.00	MHDT
Lake and Pond Draining	—	—	—	—
Lake and Pond Draining	Worker	30.0	18.5	LDA,LDT1,LDT2
Lake and Pond Draining	Vendor	0.00	10.2	HHDT,MHDT
Lake and Pond Draining	Hauling	0.00	20.0	HHDT
Lake and Pond Draining	Onsite truck	0.00	—	MHDT
Clear and Grub	—	—	—	—
Clear and Grub	Worker	100	18.5	LDA,LDT1,LDT2
Clear and Grub	Vendor	10.0	10.2	HHDT,MHDT

Clear and Grub	Hauling	24.0	20.0	HHDT
Clear and Grub	Onsite truck	1.00	5.00	MHDT
Remove sediment	—	—	—	—
Remove sediment	Worker	100	18.5	LDA,LDT1,LDT2
Remove sediment	Vendor	10.0	10.2	HHDT,MHDT
Remove sediment	Hauling	300	51.0	HHDT
Remove sediment	Onsite truck	1.00	5.00	MHDT
Install river rock, water quality systems, and liner	—	—	—	—
Install river rock, water quality systems, and liner	Worker	40.0	18.5	LDA,LDT1,LDT2
Install river rock, water quality systems, and liner	Vendor	12.0	10.2	HHDT,MHDT
Install river rock, water quality systems, and liner	Hauling	0.00	20.0	HHDT
Install river rock, water quality systems, and liner	Onsite truck	0.00	—	HHDT
Install landscaping and electrical	—	—	—	—
Install landscaping and electrical	Worker	40.0	18.5	LDA,LDT1,LDT2
Install landscaping and electrical	Vendor	12.0	10.2	HHDT,MHDT
Install landscaping and electrical	Hauling	0.00	20.0	HHDT
Install landscaping and electrical	Onsite truck	1.00	5.00	MHDT
Install signage bencing lighting	—	—	—	—
Install signage bencing lighting	Worker	30.0	18.5	LDA,LDT1,LDT2
Install signage bencing lighting	Vendor	17.0	10.2	HHDT,MHDT
Install signage bencing lighting	Hauling	3.00	20.0	HHDT
Install signage bencing lighting	Onsite truck	1.00	5.00	MHDT
Final inspection	—	—	—	—
Final inspection	Worker	4.00	18.5	LDA,LDT1,LDT2
Final inspection	Vendor	0.00	10.2	HHDT,MHDT

Final inspection	Hauling	0.00	20.0	HHDT
Final inspection	Onsite truck	1.00	5.00	MHDT
Dewatering	—	—	—	—
Dewatering	Worker	0.00	18.5	LDA,LDT1,LDT2
Dewatering	Vendor	—	10.2	HHDT,MHDT
Dewatering	Hauling	0.00	20.0	HHDT
Dewatering	Onsite truck	1.00	5.00	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Remove Concrete and In/Outlets	—	—	—	—
Remove Concrete and In/Outlets	Worker	100	18.5	LDA,LDT1,LDT2
Remove Concrete and In/Outlets	Vendor	10.0	10.2	HHDT,MHDT
Remove Concrete and In/Outlets	Hauling	10.0	20.0	HHDT
Remove Concrete and In/Outlets	Onsite truck	1.00	5.00	MHDT
Mobilization	—	—	—	—
Mobilization	Worker	30.0	18.5	LDA,LDT1,LDT2
Mobilization	Vendor	10.0	10.2	HHDT,MHDT
Mobilization	Hauling	4.00	20.0	HHDT
Mobilization	Onsite truck	1.00	5.00	MHDT
Remove Contaminated Material	—	—	—	—
Remove Contaminated Material	Worker	100	18.5	LDA,LDT1,LDT2
Remove Contaminated Material	Vendor	10.0	10.2	HHDT,MHDT
Remove Contaminated Material	Hauling	44.0	290	HHDT
Remove Contaminated Material	Onsite truck	1.00	5.00	MHDT
New Structures and Pipes	—	—	—	—
New Structures and Pipes	Worker	40.0	18.5	LDA,LDT1,LDT2
New Structures and Pipes	Vendor	16.0	10.2	HHDT,MHDT

New Structures and Pipes	Hauling	0.00	20.0	HHDT
New Structures and Pipes	Onsite truck	1.00	5.00	MHDT
Lake and Pond Draining	—	—	—	—
Lake and Pond Draining	Worker	30.0	18.5	LDA,LDT1,LDT2
Lake and Pond Draining	Vendor	0.00	10.2	HHDT,MHDT
Lake and Pond Draining	Hauling	0.00	20.0	HHDT
Lake and Pond Draining	Onsite truck	0.00	—	MHDT
Clear and Grub	—	—	—	—
Clear and Grub	Worker	100	18.5	LDA,LDT1,LDT2
Clear and Grub	Vendor	10.0	10.2	HHDT,MHDT
Clear and Grub	Hauling	24.0	20.0	HHDT
Clear and Grub	Onsite truck	1.00	5.00	MHDT
Remove sediment	—	—	—	—
Remove sediment	Worker	100	18.5	LDA,LDT1,LDT2
Remove sediment	Vendor	10.0	10.2	HHDT,MHDT
Remove sediment	Hauling	300	51.0	HHDT
Remove sediment	Onsite truck	1.00	5.00	MHDT
Install river rock, water quality systems, and liner	—	—	—	—
Install river rock, water quality systems, and liner	Worker	40.0	18.5	LDA,LDT1,LDT2
Install river rock, water quality systems, and liner	Vendor	12.0	10.2	HHDT,MHDT
Install river rock, water quality systems, and liner	Hauling	0.00	20.0	HHDT
Install river rock, water quality systems, and liner	Onsite truck	0.00	—	HHDT
Install landscaping and electrical	—	—	—	—
Install landscaping and electrical	Worker	40.0	18.5	LDA,LDT1,LDT2
Install landscaping and electrical	Vendor	12.0	10.2	HHDT,MHDT

Install landscaping and electrical	Hauling	0.00	20.0	HHDT
Install landscaping and electrical	Onsite truck	1.00	5.00	MHDT
Install signage bencing lighting	—	—	—	—
Install signage bencing lighting	Worker	30.0	18.5	LDA,LDT1,LDT2
Install signage bencing lighting	Vendor	17.0	10.2	HHDT,MHDT
Install signage bencing lighting	Hauling	3.00	20.0	HHDT
Install signage bencing lighting	Onsite truck	1.00	5.00	MHDT
Final inspection	—	—	—	—
Final inspection	Worker	4.00	18.5	LDA,LDT1,LDT2
Final inspection	Vendor	0.00	10.2	HHDT,MHDT
Final inspection	Hauling	0.00	20.0	HHDT
Final inspection	Onsite truck	1.00	5.00	MHDT
Dewatering	—	—	—	—
Dewatering	Worker	0.00	18.5	LDA,LDT1,LDT2
Dewatering	Vendor	—	10.2	HHDT,MHDT
Dewatering	Hauling	0.00	20.0	HHDT
Dewatering	Onsite truck	1.00	5.00	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%
Sweep paved roads once per month	9%	9%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Remove Concrete and In/Outlets	0.00	0.00	0.00	2,000	—
Mobilization	0.00	0.00	2.75	0.00	—
Lake and Pond Draining	0.00	0.00	0.00	0.00	—
Clear and Grub	0.00	3,072	26.3	0.00	—
Dewatering	—	—	0.00	0.00	—
Remove Contaminated Material	0.00	7,000	13.8	0.00	—
Remove sediment	0.00	58,000	38.8	0.00	—
Install signage bencing lighting	—	150	0.40	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Recreational	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	349	0.03	< 0.005
2026	0.00	346	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
User Defined Recreational	4.00	0.00	0.00	1,043	52.2	0.00	0.00	13,612

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
User Defined Recreational	4.00	0.00	0.00	1,043	52.2	0.00	0.00	13,612

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

0	0.00	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
User Defined Recreational	254,215	346	0.0330	0.0040	0.00

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
User Defined Recreational	254,215	346	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
User Defined Recreational	0.00	2,380,955

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
User Defined Recreational	0.00	2,380,955

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
User Defined Recreational	0.00	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
User Defined Recreational	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	25.9	annual days of extreme heat
Extreme Precipitation	9.15	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	16.9	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A

Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	84.6
AQ-PM	67.7
AQ-DPM	64.9
Drinking Water	73.7
Lead Risk Housing	82.5
Pesticides	0.00
Toxic Releases	69.0
Traffic	92.3
Effect Indicators	—
CleanUp Sites	27.8
Groundwater	30.9

Haz Waste Facilities/Generators	41.8
Impaired Water Bodies	0.00
Solid Waste	52.9
Sensitive Population	—
Asthma	7.85
Cardio-vascular	11.0
Low Birth Weights	23.9
Socioeconomic Factor Indicators	—
Education	13.7
Housing	39.2
Linguistic	71.7
Poverty	37.0
Unemployment	15.8

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	81.39355832
Employed	67.22699859
Median HI	79.26344155
Education	—
Bachelor's or higher	85.4484794
High school enrollment	100
Preschool enrollment	95.7141024
Transportation	—
Auto Access	34.2871808
Active commuting	31.10483767

Social	—
2-parent households	89.32375209
Voting	33.50442705
Neighborhood	—
Alcohol availability	52.31618119
Park access	81.35506224
Retail density	93.53265751
Supermarket access	46.91389709
Tree canopy	71.61555242
Housing	—
Homeownership	56.70473502
Housing habitability	58.14192224
Low-inc homeowner severe housing cost burden	83.07455409
Low-inc renter severe housing cost burden	28.21763121
Uncrowded housing	92.9038881
Health Outcomes	—
Insured adults	94.73886822
Arthritis	0.0
Asthma ER Admissions	94.4
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	95.9
Cognitively Disabled	43.0
Physically Disabled	65.4

Heart Attack ER Admissions	85.9
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	68.0
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	77.6
Elderly	23.5
English Speaking	37.4
Foreign-born	74.6
Outdoor Workers	93.5
Climate Change Adaptive Capacity	—
Impervious Surface Cover	71.9
Traffic Density	89.7
Traffic Access	23.0
Other Indices	—
Hardship	15.3
Other Decision Support	—
2016 Voting	40.7

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	31.0
Healthy Places Index Score for Project Location (b)	81.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	5.4-acre graded area and 2.4-acre landscape area.
Construction: Construction Phases	Project specific construction schedule (conservatively includes 6 month contingency)
Construction: Off-Road Equipment	Project specific equipment. Work trucks included in vendor trips and onsite truck.
Construction: Trips and VMT	Project specific workers and truck trips
Operations: Vehicle Data	Based on 2 new staff members
Operations: Water and Waste Water	Based on moderate water usage for landscaped area
Construction: Dust From Material Movement	Material export quantities based on information provided by PW
Operations: Energy Use	Based on pump requirements for the recirculation and aeration systems, assuming 24/7, 365 days of operation.

Operational - Increased Water Craft Usage during Maintenance Activities

Type	Weekly Usage (hrs)	Daily Usage (hrs)	Fuel Usage Rate (gal/hr)	Daily Fuel Usage (gal)	Annual Fuel Usage (gal)
Pontoon Boat	10	5	0.7	3.5	364

Source/Notes: Weekly usage and boat size based on 230823 - Baldwin_Additional Data Needs_AQ-GHG-Energy_18July2023_PW comments
Daily usage based on assumption that pontoon boat is used 1-2 days per week
Fuel usage based on 5-HP 2-stroke engine (https://www.marineenginedigest.com/specialreports/fuelflowchart.htm)
Annual fuel usage based on 52 weeks per year of usage.

Emission Rates (lbs/gal)					
ROG	NOx	CO	PM10	PM2.5	CO2
0.868278351	0.081900331	3.33239003	0.045105435	0.03407966	11.3360304

Source/Notes: Emission rates calculated by converting tons/gallon to pounds/gallon.

Maximum Daily Emissions (lbs)					MT/year		
ROG	NOx	CO	PM10	PM2.5	CO2	CH4	N2O	CO2e
3.038974227	0.286651159	11.6633651	0.157869023	0.119278809	1.84210494	0.000044	0.000079	1.87

Source/Notes: Emissions calculated based on usage and emission rates.

Methodology

OFFROAD 2021 Emissions Inventory Data for <15 HP Gasoline Pleasure Craft - Vessels W/Outboard Engines

Calendar Year	2026
Fuel Consumption (gal/year)	78939.06417

Criteria Pollutant/Unit	ROG	NOx	CO	PM10	PM2.5	CO2
tons/day	0.093891891	0.00885635	0.360350343	0.004877508	0.003685228	1.225829632
tons/year [1]	34.27054022	3.23256775	131.5278752	1.78029042	1.34510822	447.4278157
tons/gal [2]	0.000434139	4.09502E-05	0.001666195	2.25527E-05	1.70398E-05	0.005668015

Source: Blue cells pulled directly from OFFROAD2021
1. Calculated assuming 365 days per year.
2. Calculated using annual fuel consumption from OFFROAD2021 and annual emissions.

Factors for Estimating CH4 and N2O Emissions from Gasolineand Diesel Vehicles (SEM)

GHG	MT GHG per MT of CO2
CH4	2.37E-05
N2O	4.29E-05

Source: The Climate Registry, June 2023 Default Emission Factors, Table 2.9 (Available online: https://theclimateregistry.org/wp-content/uploads/2023/06/2023-Default-Emission-Factors-Final-1.pdf)

GWP Values

GHG Pollutant	GWP
CO2	1
CH4	25
N2O	298

Source: IPCC Fourth Assessment, consistent with CalEEMod v. 2022.1 GWP values

Baldwin Lake and Tule Pond Restoration Project

Construction Energy Summary

Source	MT CO_2 [a]	Fuel Type	Emission Factor (lb CO_2/gallon) [b]	Gallons
Off-Road Equipment	406.07	Diesel	22.45	40,517
Hauling	2078.17	Diesel	22.45	207,354
Vendor	53.07	Diesel	22.45	5,295
Onsite Truck	3.47	Gas	17.86	
Worker	123.32	Gas	17.86	15,467
Total Fuel Demand (Diesel)				253,165
Total Fuel Demand (Gas)				15,467

Sources:

[a] Modeled by AECOM in 2023.

[b] U.S. Energy Information Administration released October 5, 2022 (https://www.eia.gov/environment/emissions/co2_vol_mass.php)

Operational Energy Summary

Source	MT CO_2 [a]	Fuel Type	Emission Factor (lb CO_2/gallon) [b]	Gallons
Mobile (Staff Commutes)	4.74	Gas	17.86	594
Pontoon Boat	1.87	Gas	17.86	234
Total Fuel Demand (Gas)				829

Sources:

[a] Modeled by AECOM in 2023.

[b] U.S. Energy Information Administration released October 5, 2022 (https://www.eia.gov/environment/emissions/co2_vol_mass.php)

Source	Electricity Consumption	Unit
Aeration/Recirculation Pumps	254,215	kWh/year

Source: Based on anticipated pump sizes and assumed continued operation of 24 hours/day, 365 days per year.

Electricity Requirements

Component	Rating	Unit
Upwell System (Jensen)	19.13	kW
Recirculation System	8.25	kW
Reciculation Lake Water	0.56	kW
Aeration System	1.08	kW
Daily Electricity Consumption	696.48	kWh/day
Annual Electricity Consumption	254,215.20	kWh/year

Source: Electrical information provided in 14Sept2023 email

Daily and annual electricity consumption based on 24/7, 365 days of operation.

Appendix B
Biological Resources Memorandum

AECOM

999 Town & Country Road 714.689.7281 tel
Orange, CA 92868 714.567.2760 fax
www.aecom.com

October 31, 2024

Ms. Grace Komjakraphan-Tek
Supervising Environmental Engineering Specialist
Los Angeles County Public Works
900 S. Freemont Avenue
Alhambra, CA 91803

Dear Ms. Komjakraphan-Tek:

Subject: Baldwin Lake and Tule Pond Restoration Project, Biological Resources Memorandum Report

1. INTRODUCTION

The County of Los Angeles Department of Public Works (PW) proposes to restore and enhance Baldwin Lake and Tule Pond, which are two features currently located within the property of the Los Angeles County Arboretum and Botanic Gardens (Arboretum) in the City of Arcadia within Los Angeles County.

AECOM Technical Services, Inc. (AECOM) was retained by PW to prepare a Biological Resources Memorandum Report of the Baldwin Lake and Tule Pond Restoration Project (Project) in support of the Initial Study/Mitigated Negative Declaration (IS/MND) being prepared in compliance with the California Environmental Quality Act (CEQA).

This report summarizes the results of the database and literature search (i.e., the desktop analysis) and subsequent field surveys conducted by AECOM to document existing biological conditions at the Project site, evaluate the presence and potential for special-status species (defined in Sections 5.1.3 and 5.2.2) and sensitive habitats to occur at and in the vicinity of the Project footprint (defined as areas of the Project demarcated for construction), and evaluate the need for any Best Management Practices (BMPs) or mitigation measures to minimize and/or avoid potential impacts to potentially present biological resources. Both the desktop analysis and field surveys were conducted within the Project footprint and a surrounding 500-foot survey buffer; hereafter collectively referred to as the Biological Survey Area (BSA).

2. PROJECT DESCRIPTION

2.1 Project Location and Setting

The Project is located at 301 North Baldwin Avenue in the City of Arcadia, which is in central Los Angeles County in the northwestern portion of the San Gabriel Valley (Figure 1). The Project sits at the foot of the San Gabriel Mountains and is bound by Colorado Boulevard and Interstate 210 (I-210) on the north, Baldwin Avenue on the east, single-family residences and Hugo Reid Drive/Old Ranch Road on the south, and single-family



Source: Esri Maps & Data, 2023.

Figure 1
Regional Vicinity Map

residences and Golden West Avenue/Tallac Drive on the west. The Santa Anita Park (Racetrack) and Westfield Santa Anita Mall are located east and southeast of the Arboretum across Baldwin Avenue (Figure 2). The Project is located within the Rio Hondo Watershed.

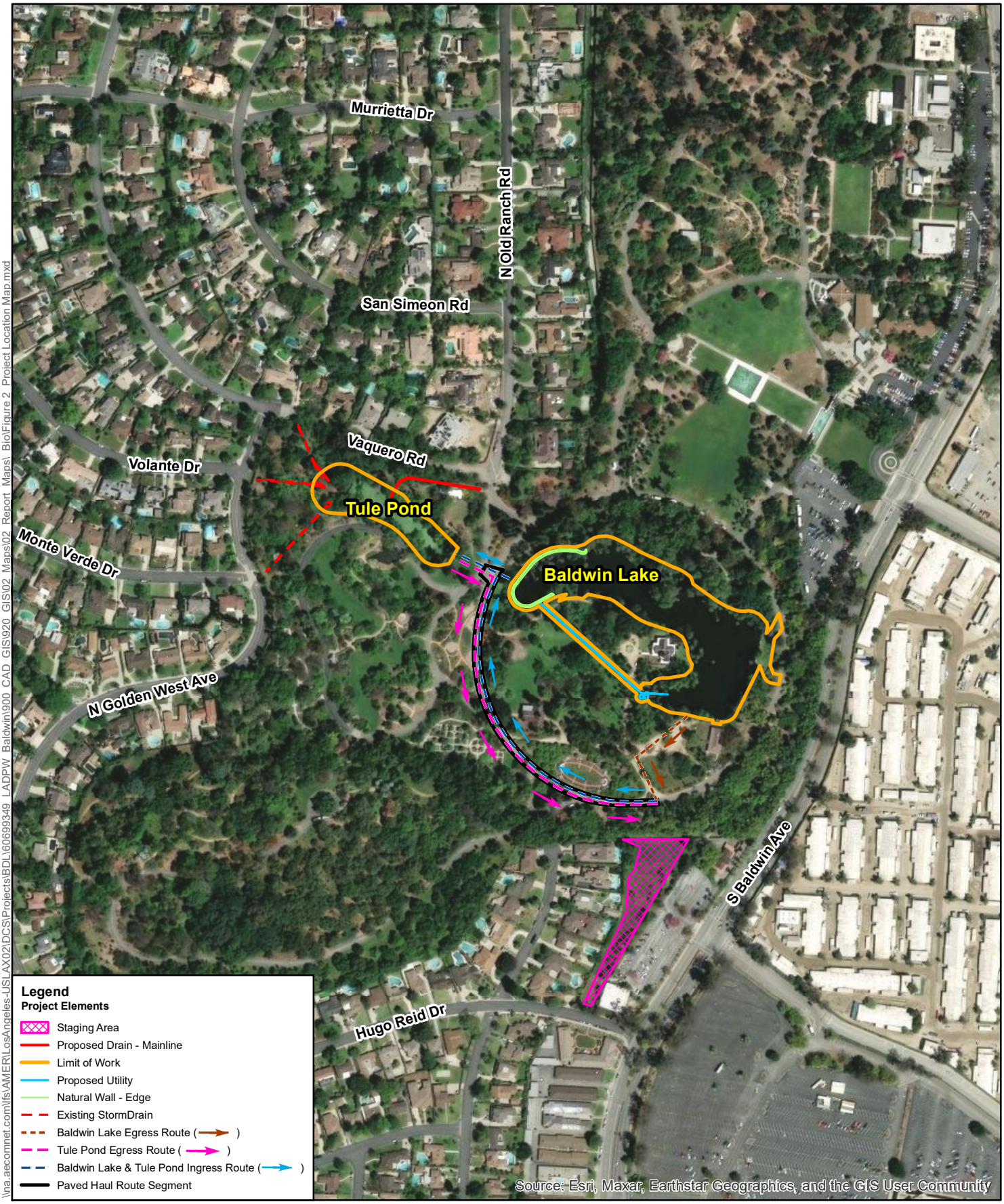
The 127-acre Arboretum in which the Project is located provides enjoyment and learning opportunities to the public regarding nature, horticulture, and historic resources. Baldwin Lake and Tule Pond are prominent features of the Arboretum site and both provide a central destination for visitors. Baldwin Lake covers 3.4 surface acres, while Tule Pond covers approximately 0.7 surface acre, located in the central portion of the Arboretum grounds (Figure 2). Baldwin Lake is located approximately 205 feet east of Tule Pond and the two features are separated by vegetation, mature trees, and existing paved pedestrian walkways. The Arboretum grounds are heavily landscaped with plants and trees and are managed and maintained on a regularly recurring basis. The majority of the vegetation present consists of mostly ornamental species from all over the world, as well as species common in parks and other public settings in southern California. The Arboretum is open seven days a week from 9:00 AM to 7:00 PM and includes paved and unpaved walkways where visitors can loop around Baldwin Lake and Tule Pond. Key historic features within the Arboretum that are adjacent to the Project include the Queen Anne Cottage, the Coach Barn, the Reid-Baldwin Adobe, the cobblestone retaining walls around the shoreline, and numerous trees that date back to when the Queen Anne Cottage was built and to the opening of the Arboretum in 1948.

2.2 Project Background

The Project includes the restoration of Baldwin Lake and Tule Pond, both of which are located within the Arboretum. Stormwater and urban runoff from the surrounding residential neighborhood are collected and transferred by three Los Angeles County Flood Control District (LACFCD) storm drains into Tule Pond, which drains to Baldwin Lake and eventually outlets to Arcadia Wash. The storm drains were constructed in the 1950s.

Tule Pond was once an upstream arm of Baldwin Lake until it was cut off in the 1950s by grading activities. When Tule Pond reaches capacity, runoff drains into Baldwin Lake through an existing reinforced concrete pipe culvert. The urban and stormwater runoff draining into Tule Pond have contributed to soil contamination and deposition in Tule Pond, especially near the existing storm drain outlets, negatively affecting Tule Pond's ability to perform as a pre-settling basin to the Baldwin Lake. In addition to deposition from storm drains, most of the new sediment build-up has been generated from on-site Arboretum grounds. This is due to both uncontrolled runoff during storm events and erosion of Tule Pond's shore edge due to scouring and wave action of the incoming storm flows. As Tule Pond is unable to perform as originally intended, more of this sediment has been transported to Baldwin Lake.

Currently, Baldwin Lake is approximately 2.5 to 3 feet deep due to the accumulation of sediment and organic material which has resulted in low levels of dissolved oxygen, algae build-up, temperature spikes during the summer, lack of water circulation, and potentially



Source: bing map, 2024; Prepared By: AECOM, 2024.

Figure 2

Project Location Map

high bacterial levels. Uncontrolled runoff during storm events, erosion along the shoreline, including deterioration of the historic cobblestone retaining walls, and overgrown vegetation have contributed to Baldwin Lake's degradation. The declining condition of Baldwin Lake and Tule Pond has also reduced aquatic productivity and bird use at both features. As a stopover along the Pacific Flyway for migratory bird species, the current shallow depths are not sufficient to sustain a healthy ecosystem. Recorded bird sightings have been reduced by 22 percent over the last several years while waterfowl numbers and variety have also been impacted (Robertson 2019). Therefore, the Project would include the restoration of both Baldwin Lake and Tule Pond that would improve the overall water quality, ecological features, and educational and recreational elements as described in Section 2.3, below.

2.3 Project Objectives

The primary objectives of the Project include the restoration of both Baldwin Lake and Tule Pond to improve the overall function of the associated ecological features, specifically the following:

- Improve flood protection and increase water conservation by increasing the depth of the Lake and Pond by excavating approximately 65,000 cubic yards (CY) of sediment.
- Improve water quality by treating stormwater runoff.
- Improve flood protection and increase water conservation by increasing stormwater detention.
- Increase water conservation by reducing potable water demand by lining the Lake to reduce water loss.
- Increase water conservation and improve water quality by improving infiltration of stormwater and low flow runoff at the Pond.
- Enhance the aesthetic, historical, and operational features of the Lake and Pond.

In addition, the Project addresses critical needs of the greater Los Angeles County region by:

- Improving water supply; stormwater will be collected and percolated into the groundwater.
- Improving surface water quality by treating contaminated urban runoff.
- Reducing flood risk during storm events.
- Enhancing open space, habitat, and recreational features by increasing water depth and improving the ecosystem and providing various recreational features.
- Reducing Lake infiltration to reduce potable and imported water use.
- Addressing climate change by reducing energy consumption and increasing carbon sequestration through tree plantings.

The primary components, as described in Section 2.4 below, would restore and enhance Baldwin Lake and Tule Pond through flood control improvements, water quality improvements, and preservation.

2.4 Project Components

The following Project components would be implemented within the Project footprint in support of the Project objectives described above in Section 2.3.

2.4.1 Baldwin Lake Improvements

The Project includes the following proposed components necessary for improving the overall function of Baldwin Lake (Figure 2):

- Reconfigure the 48-inch reinforced concrete pipe (RCP) outlet on the upstream end of the Lake and construct an outlet structure with energy dissipators to minimize erosion on the opposite shoreline.
- Apply air-placed concrete along the west perimeter of the Lake for slope stability.
- Removal of excess sediment and organic material for a proposed Lake depth up to 14 feet.
- Removal of impacted trees along and within the shoreline perimeter to restore the historic alignment of the Lake.
- Construct a concrete retaining wall with a cobblestone façade around the perimeter of the Lake in compliance with a historical preservation consultant to restore the Lake's historical appearance, and shoreline alignment. The existing, deteriorating wall would be restored based on National Park Service (NPS) Technical Preservation Services (TPS) Preservation Briefs that outline acceptable repair, rehabilitation, and maintenance methods appropriate to retaining walls and cobblestone façade.
- Construct a vault hatch structure (10-foot by 8-foot) at the south end of the Lake by the Boat House to house mechanical and electrical equipment. This structure will connect to a below grade wet well (24-feet deep by 10-foot diameter). Improvements to the Boat House are not part of this project. Construct aeration compressor stainless steel cabinet (16-inches by 16-inches by 20.5-inches).
- Construct a viewing deck to provide aesthetic and education opportunities at the eastern end of the Lake.
- Construct an approximately 18-foot by 70-foot concrete boat ramp along the west perimeter of the Lake to facilitate maintenance on the Lake.
- Install landscaping, including an irrigation system along the perimeter of the Lake. Landscaping improvements will occur within 10 feet of the Lake edge.
- Install a bentonite liner in the Lake to minimize water loss from percolation. A ground water management system may be required to remove potential hydrostatic pressure underneath the liner.
- Install an aeration and filtration system consisting of pipes, pumps and diffusers tied to a power source to promote a healthy aquatic habitat.

- Install an ultrasonic algae remediation system, which is a non-chemical system that pulses out sound waves at specific frequencies to disable algae growth and prevent biofilm formation without causing harm to other forms of life.
- Provide guidance on operations and maintenance of the project's improved water quality features for use by maintenance staff.

2.4.2 Tule Pond Improvements

The Project includes the following components necessary for improving the overall function of Tule Pond (Figure 2):

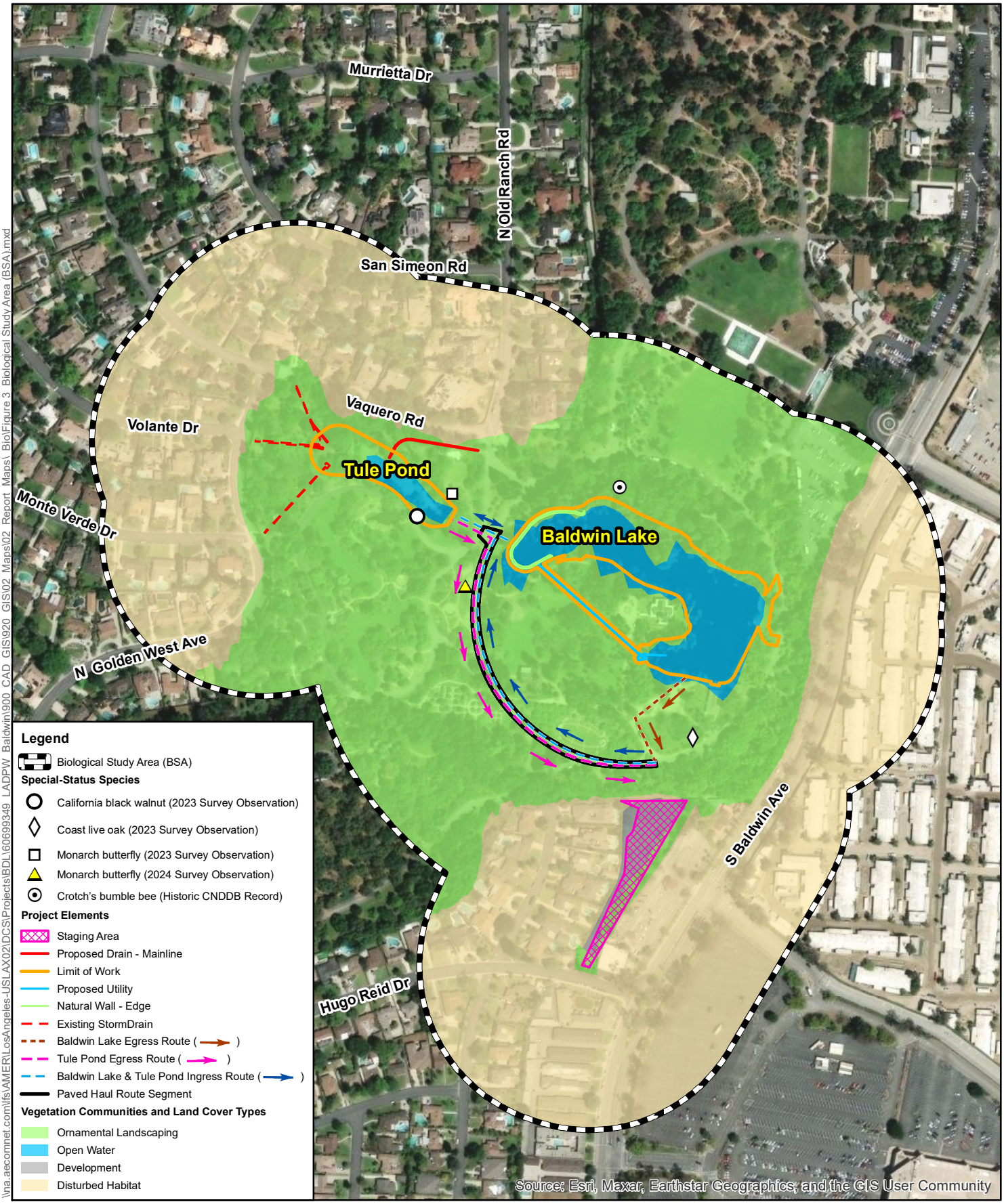
- Reconstruct the three outlet structures at the upstream end of the Pond with energy dissipators to minimize erosion of the adjacent embankment.
- Reconstruct a portion of the Arboretum Drain 3 system at Vaquero Road, which will include a new RCP storm drain upstream of the diversion structure, connector pipe, and rural catch basin.
- Realign the existing storm drain that currently conveys runoff from Old Ranch Road to the Lake to outlet into the Pond. This storm drain will require a new outlet structure with energy dissipators to minimize erosion of the adjacent embankment.
- Strategically place concrete riprap around the outlet structures to minimize bank erosion.
- Re-grade the Pond and excavate excess material to achieve the Pond's historical capacity, with depths up to 12 feet. This would increase the capacity and stormwater percolation. Preliminary investigation shows that this sediment is contaminated with lead and would need to be handled and disposed of at a site permitted to accept contaminated soil.
- Install landscaping and irrigation system along the perimeter of the Pond. Landscaping limits will be determined in conjunction with the Arboretum's arborist.
- Install four in-line treatment systems, which will include diversion structures, hydrodynamic separator units (HDS) and media filtration systems along the three existing storm drains and proposed Old Ranch Road Storm Drain realignment for further stormwater treatment before runoff outlets into the Pond. The HDS units will treat runoff for trash, sediment, and oils and the media filtration systems will treat any additional sediment, debris, free-floating oil, heavy metals and phosphorus not captured by the HDS units.
- Construct a ¾-inch crushed rock access road along the west side of the Arboretum for future maintenance access to the four proposed HDS units and media filtration units. The access roads to be constructed along the west side within the Arboretum property are near the intersection of Vaquero and Old Ranch Road (Old Ranch Road), near Vaquero Road and Golden West Avenue (D1), and near Monte Verde Drive and Golden West Avenue (D2 & D3). The length and width of the access roads vary at different segments; the widest access road is at D1 and ranges from approximately 12 to 45 feet and the length varies from 165 feet (Old Ranch) to 281 feet (D2 & D3).

3. METHODS FOR ASSESSING BIOLOGICAL RESOURCES

A desktop analysis evaluating the special-status biological resources in the vicinity of the Project was conducted prior to performing the field surveys. This included a search of relevant regional databases, review of applicable literature, and review of plant and wildlife inventories associated with the Arboretum. The Project occurs entirely within the southeast portion of the United States Geological Survey's (USGS's) Mount Wilson 7.5-minute quadrangle. A search of this quadrangle and the surrounding eight quadrangles—including Condor Peak, Chilao Flat, Waterman Mountain, Azusa, Baldwin Park, El Monte, Los Angeles, and Pasadena—was conducted using the California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Database (CNDDB) (CNDDB 2023), and the California Native Plant Society (CNPS)'s online Inventory of Rare and Endangered Plants of California (CNPS 2023). Additionally, the United States Fish and Wildlife Service's (USFWS's) online Information for Planning and Consultation (IPaC) (USFWS 2023) database was queried for special-status species, sensitive natural communities, and protected areas known from the Project vicinity.

The BSA evaluated included the Project footprint plus a 500-foot survey buffer (Figure 3). A buffer around the Project footprint was evaluated to capture potential indirect effects to biological resources from implementation of the Project. Indirect effects could include elevated noise and dust levels, erosion, and increased human activity within the BSA. A 500-foot survey buffer is standard for capturing and evaluating potential indirect impacts from a Project on biological resources. It is anticipated that indirect impacts beyond 500 feet would be negligible in level and would not significantly impact biological resources, especially when compared to the existing urban nature of the surrounding landscape.

Prior to conducting the field survey effort, aerial imagery of the BSA was reviewed for the presence of suitable habitat that could potentially support special-status biological resources. On July 11, 2023, an initial field survey of the BSA was conducted by AECOM biologist Vanessa Tucker to document existing biological resources that occur or have the potential to occur within the BSA, and to evaluate the potential for special-status plant and wildlife species to occur. A follow-up site visit was conducted on July 3, 2024, in response to a design change that resulted in modifications to the Project footprint. In both instances, the entire Project footprint, including perimeters of both Baldwin Lake and Tule Pond, was walked via meandering transects in order to identify vegetation communities present, suitable habitat for special-status species, and the presence of special-status species (both sign and direct observations). Binoculars were utilized to scan for evidence of wildlife activity in the BSA.



Source: bing map, 2024; Prepared By: AECOM, 2024.

0 200 400 Feet

Figure 3

Biological Study Area

4. APPLICABLE REGULATIONS

4.1 Federal Regulations and Standards

Federal Endangered Species Act (FESA)

Enacted in 1973, FESA provides for the conservation of threatened and endangered species and their ecosystems (United States Code [U.S.C.] Title 16, Chapter 35, Sections 1531–1544). FESA prohibits the "take" of threatened and endangered species except under certain circumstances and only with authorization from USFWS through a permit under Section 4(d), 7 or 10(a) of the FESA. "Take" under FESA is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

Formal consultation under FESA would be required if the Project had the potential to affect a federally listed species that has been detected within or adjacent to the BSA. One Candidate species for federal listing, the monarch butterfly (*Danaus plexippus*), was observed within the BSA during the field surveys. Candidate species are offered the same protections as listed species; therefore, formal consultation under FESA may be required if unavoidable impacts are anticipated. Mitigation measures to minimize and mitigate impacts to these species are discussed in Section 7.

Migratory Bird Treaty Act

Congress passed the Migratory Bird Treaty Act (MBTA) in 1918 to prohibit the kill or transport of native migratory birds, or any part, nest, or egg of any such bird unless allowed by another regulation adopted in accordance with the MBTA (U.S.C. Title 16, Chapter 7, Subchapter II, Sections 703–712). The prohibition applies to birds included in the respective international conventions between the United States (U.S.) and Great Britain, the U.S. and Mexico, the U.S. and Japan, and the U.S. and Russia.

No permit is issued under the MBTA; however, the Project would remain in compliance with the MBTA by conducting pre-construction nesting bird surveys as defined in Section 7, and if needed, providing a qualified biologist to monitor active nests occurring in the BSA to ensure construction does not affect species protected under the MBTA.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA), amended in 1962, was originally implemented for the protection of bald eagles. In 1962, Congress amended the BGEPA to also cover golden eagles, a move that was partially an attempt to strengthen protection of bald eagles, since the latter were often killed by people mistaking them for golden eagles. This Act makes it illegal to import, export, take (which includes molest or disturb), sell, purchase, or barter any bald eagle or golden eagle or part thereof.

Bald and golden eagles are not known to occur in the Project area and habitat in the BSA is not suitable for these species. As a result, no effects on bald or golden eagles are anticipated from the Project.

Clean Water Act

Under Section 404 of the Clean Water Act (CWA), the U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged or fill material into jurisdictional Waters of the U.S. (WOTUS), which include those waters listed in 33 Code of Federal Regulations (CFR) 328.3 (Definitions) (U.S.C. Title 33, Chapter 26, Sections 101–607). Section 401 of the CWA requires a water quality certification from the state for all permits issued by USACE under Section 404 of the CWA. The Regional Water Quality Control Board (RWQCB) is the state agency in charge of issuing a CWA Section 401 water quality certification or waiver.

The Project would involve removal of sediment and lining Baldwin Lake and Tule Pond; therefore, a 401 and 404 permit may be required for the Project following a determination made through a formal jurisdictional delineation survey.

Protection of Wetlands – Executive Order Numbers 11990 and 12608

Under this Executive Order (EO) issued May 24, 1977, and amended by EO 12608, federal agencies must provide leadership and take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands (42 CFR 26961; 3 CFR 1977 Comp., p. 121). Each agency, to the extent permitted by law, must avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds: (1) there is no practical alternative to such construction; and (2) the proposed action includes all practicable measures to minimize harm to wetlands that may result from such use. In making this finding, the head of the agency may take into account economic, environmental, and other pertinent factors. Each agency must also provide an opportunity for early public review of any plans or proposals for new construction in wetlands.

The BSA does not coincide with a wetland, and as a result, EO 12608 would not be applicable to the Project.

4.2 State Regulations and Standards

California Environmental Quality Act[1]

California Environmental Quality Act (CEQA) requires that biological resources be considered when assessing the environmental impacts resulting from proposed actions. CEQA does not specifically define what constitutes an “adverse effect” on a biological resource. Instead, lead agencies are charged with determining what specifically should be considered an impact. This report has been prepared for Project compliance with CEQA.

[1] Public Resource Code (PRC) Section 21000 et seq. and the State CEQA Guidelines, California Code of Regulations, Section 15000 et seq.

California Fish and Game Code

California Fish and Game Code (CFGC) regulates the taking or possession of birds, mammals, fish, amphibians, and reptiles, as well as impacts to natural resources such as wetlands and waters of the state. It includes California Endangered Species Act (CESA) (Sections 2050–2115) and Baldwin Lake and Streambed Alteration Agreement (LSAA) regulations (Section 1600 et seq.).

Wildlife "take" is defined by CDFW as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Protection extends to the animals, dead or alive, and all their body parts. Section 2081 of CESA allows CDFW to issue an Incidental Take Permit (ITP) for state-listed threatened or endangered species, should the Project have the potential to "take" a state-listed species that has been detected within or adjacent to the Project. Certain criteria are required under CESA prior to the issuance of such a permit, including the requirement that impacts of the take are minimized and fully mitigated.

No state-listed species were detected during the field surveys; however, a Crotch bumble bee (*Bombus crotchii*, candidate for state listing endangered) CNDDB occurrence from 2020 coincides with the BSA. Candidate species are afforded the same protection as listed species and, therefore, require a CDFW-authorized ITP if unavoidable impacts are anticipated. Mitigation measures to minimize and mitigate impacts to this species are discussed in Section 7.

The Project would involve removal of sediment from Baldwin Lake and Tule Pond and lining Baldwin Lake with new material to prevent loss of water through percolation. As a result, coordination with CDFW and the issuance of an LSAA may be required for the Project following a determination made through a formal jurisdictional delineation survey.

Porter-Cologne Water Quality Control Act

Under Section 13000 et seq., of the Porter-Cologne Act, RWQCB is the agency that regulates discharges of waste and fill material within any region that could affect a Water of the State (WOS) (California Water Code [CWC] 13260[a]), including wetlands and isolated waters, as defined by CWC Section 13050(e). A formal jurisdictional delineation would be required to further confirm whether waters of the state are present within the BSA.

4.3 Local Regulations and Standards

Significant Ecological Area Program

Los Angeles County first began to inventory biotic resources and identify key areas of biological diversity in the 1970s. Today, the primary mechanism used by the County to conserve biological diversity is a planning overlay called Significant Ecological Areas (SEAs) designated in the County's General Plan Conservation/Open Space Element. SEAs are ecologically important land and water systems that support valuable habitat for plants and animals, often integral to the preservation of rare, threatened, or endangered species and the conservation of biological diversity in Los Angeles County. While SEAs are not

preserves, they are areas where Los Angeles County deems it important to facilitate a balance between development and resource conservation.

The SEA Program consists of the following components: the SEA Goals and Policies found in the Conservation and Natural Resources Element of the Los Angeles County General Plan 2035; the Significant Ecological Areas and Coastal Resource Areas Policy Map (SEA Boundary Map) also found in the Los Angeles County General Plan 2035; and the SEA Ordinance of the County Zoning Code (Title 22 Zoning Regulations, Section 22.56.215) (LACP 2023). Together these components help guide development within SEAs. The SEA ordinance establishes the permitting, design standards, and review process for development within SEAs, and permits are reviewed by the Significant Ecological Areas Technical Advisory Committee (SEATAC). Development activities in the SEAs are reviewed closely to conserve water and biological resources such as streams, oak woodlands, and threatened or endangered species and their habitat.

The BSA does not coincide with a SEA, and as a result the SEA program would not be applicable to the Project.

Los Angeles County Oak Tree Ordinance

The Los Angeles County Oak Tree Ordinance (Ordinance 22.46.2100-Oak Tree Regulations) recognizes oak trees as significant historical, aesthetic, and ecological resources (LAC 2023). The goal of the ordinance is to create favorable conditions for the preservation and propagation of this unique and threatened plant heritage. By making this part of the development process, healthy oak trees will be preserved and maintained. The Los Angeles County Oak Tree Ordinance applies to all unincorporated areas of the County. Under the ordinance, a person shall not cut, destroy, remove, relocate, inflict damage, or encroach into the protected zone of any tree of the oak tree genus, which is eight inches or more diameter at breast height (dbh), 4.5 feet above natural grade, or, in the case of oaks with multiple trunks, a combined dbh of 12 inches or more of the two largest trunks, without first obtaining a permit from the Los Angeles County Fire Department. Replacement of affected oak trees at a 2:1 ratio on or off site, or payment of an in-lieu fee, is required by the permit.

Several oak trees (as further described in Section 5.2) are present within the BSA; therefore, the Project would adhere to the requirements of the Los Angeles County Oak Tree Ordinance, as applicable. However, depending on where a tree is located and the reason the tree must be impacted, the Project may be exempt from the Los Angeles County Oak Tree Ordinance and impacts would instead be addressed under the PW Interim Tree Removal and Replacement Policy, described below.

Arcadia Tree Preservation Ordinance

The City of Arcadia's Tree Preservation Ordinance, as summarized, recognizes oaks, sycamores and mature trees as valued environmental assets and significant aesthetic and ecological resources (City of Arcadia 2021). Regulations provide that the following trees shall not be removed, relocated, damaged, or have their protected zones encroached upon

unless a Tree Permit is granted. The protected zone is defined as the tree's drip line or the outermost circumference of the tree's canopy.

1. Engelmann oak (*Quercus engelmannii*) or coast live oak (*Quercus agrifolia*) with a single trunk dbh of at least four inches, or two or more trunks each with a dbh of three inches or greater.
2. Any other living California native or non-California native oak tree with a single trunk dbh of 12 inches or greater, or two or more trunks each with a dbh of 10 inches or greater.
3. Western sycamore (*Platanus racemosa*) with a single trunk dbh of 6 inches or greater, or two or more trunks each with a dbh of 4 inches or greater.
4. Any mature tree, except for the trees listed as Unprotected Trees in the Code, which has a single trunk dbh of 12 inches or greater, or two or more trunks each with a dbh of 10 inches or greater, and the tree is located within a required front, side, street-side, or rear yard setback.

Exemptions may apply in emergency situations; including but not limited to if trees have become visual barriers, for the maintenance and/or protection of public utilities, City property, and/or public property.

A tree permit requires that a Certified arborist must develop a comprehensive tree survey report documenting tree locations, all tree characteristics including tree health, explanation as to why tree removal is necessary, explanation of mitigation measures, and protection and avoidance measure for protected trees not intended to be impacted. The Ordinance states that every protected tree approved for removal shall be replaced with a minimum of two, 24-inch box trees. When appropriate, the Development Services Director of the City of Arcadia or their designee may modify, waive, increase or reduce the replacement requirement.

Several oak trees (as further described in Section 5.2) are present within the BSA; therefore, the Project would adhere to the requirements of the Arcadia Tree Preservation Ordinance, as applicable. However, depending on where a tree is located and the reason the tree must be impacted, the Project may be exempt from the Arcadia Tree Preservation Ordinance and impacts would instead be addressed under the PW Interim Tree Removal and Replacement Policy, described below.

PW Interim Tree Removal and Replacement Policy

The PW's Interim Tree Removal and Replacement Policy (PW Tree Policy) maintains and enhances urban forests and prevents reduction in canopy area (PW 2016). The policy requires that any tree removal within the PW's rights-of-way, including, but not limited to, parkways, public rights-of-way, flood control facilities, and public buildings, be replaced at a minimum 1:1 ratio or higher. The PW Tree Policy requires that replacement be near the location of removal but can be planted elsewhere if the original location is not feasible. The

Landscape Architecture Section in the Design Division of the PW provides guidance on appropriate species or location for replacement trees, as needed.

Western Bat Working Group

The Western Bat Working Group (WBWG) is a nonprofit organization with members from agencies, organizations, and individuals interested in bat research, management, and conservation in North America across 10 regions. Conservation work conducted by WBWG is funded through state and federal management agencies, non-governmental organizations, and private donations. WBWG has developed a Western Bat Species Regional Priority Matrix to provide details on the overall status for bat species within western North America by region. The matrix provides a ranking (High, Medium, Low, or Periphery) to indicate conservation risk for a species within a region.

5. EXISTING CONDITIONS

The majority of the BSA occurs within the Arboretum's landscaped botanical gardens, which are open to the public for recreation and education. Residential development is present within the northwest and western portions of the BSA. South Baldwin Avenue is located on the eastern portion of the BSA with Santa Anita Park located immediately east of South Baldwin Avenue. The entire BSA is further surrounded by residential and commercial development. Photographs depicting conditions within the BSA are provided in Attachment A.

An evaluation of the potential for special-status plant and wildlife species to occur within the BSA was conducted via an in-depth desktop analysis and subsequent field surveys, as described above in Section 3. The majority of species identified in the initial database search results were determined to have no potential to occur based on the absence of suitable habitat and necessary resources within the BSA. Therefore, special-status species not expected to occur as a result of the lack of suitable habitat and historic records are not further evaluated for the purpose of this report. Select special-status species for which there was determined to be potential were categorized as either present, low, medium, or high potential to occur based on the combined results of the evaluation. The specific categories and corresponding definitions for each are provided below:

- **Present:** Species observed in or immediately adjacent to the BSA during the field surveys.
- **High:** Habitat (including soils and elevation factors) and known historical range for the species occurs in the BSA and a known occurrence has been recorded from within five miles within the past 30 years.
- **Moderate:** Habitat for the species occurs in the BSA and a known occurrence exists from between five and 10 miles of the BSA, within the past 30 years.
- **Low:** Limited habitat for the species occurs in the BSA and a known occurrence is from greater than 10 miles from the BSA or over 30 years old, or habitat to support the species is of marginal quantity or quality. A low potential to occur is also

assigned when focused surveys for a species have been conducted numerous times within the past 10 years without positive results.

Special-status species that were determined to have the potential to occur within the BSA are further discussed in Sections 5.3.2 and 5.4.2 and presented in Table 2 and Table 4.

5.1 Vegetation Communities

Vegetation communities are assemblages of plant species that commonly coexist. The classification of vegetation communities is based on the life form of the dominant species within that community and the associated species. Vegetation within the BSA consists mainly of non-native and ornamental trees and shrubs typical of a landscaped environment with a minimal amount of native plant species scattered throughout. No naturally occurring native vegetation communities meeting the minimum mapping unit of 0.5 acres are present within the BSA; the BSA is considered a botanical garden consisting of ornamental landscaping, disturbed habitat, development, and open water landcover types as defined in A Manual of California Vegetation, 2nd Edition (Sawyer et. al. 2009). The botanical gardens encompassing the BSA are subject to regularly occurring maintenance and management associated with the horticultural care of the facility. Approximately 46 acres of ornamental landscaping, 53 acres of development, 0.79 acres of disturbed habitat, and four acres of open water are present within the BSA, as depicted on Figure 3.

5.2 Aquatic Resources

Baldwin Lake is historically recognized as a geologic feature of the Raymond Hill Fault whose springs and sag ponds attracted early habitation by native Gabrielino/Tongva villagers. These historic springs and sag ponds were part of a network of natural lakes found within the 2,000-acre Baldwin Ranch property. Baldwin Lake was used as a holding reservoir for ranch irrigation Projects. Sediment was removed, and the Lake was deepened to approximately 12 to 15 feet by owner Elias Jackson “Lucky” Baldwin in the 1880s. Around the same time the sediment was removed and the Lake was deepened, a retaining wall made from capped granite boulders was also constructed around the lake edge. In the 1970s, storm drain infrastructure was built around and within the Arboretum, and at this time Baldwin Lake was officially connected to Arcadia Wash.

The Arboretum, Baldwin Lake, and Tule Pond are all located within the Santa Anita Wash-Rio Hondo watershed (HUC-12 Code: 180701050302), part of the overall Los Angeles River watershed. The flow pathway is as follows: adjacent residential area provides stormwater runoff to Baldwin Lake, and the “Arboretum Drain” connects Baldwin Lake downstream to Arcadia Wash (a concrete-lined channel), which flows to the Rio Hondo, a major tributary to the Los Angeles River.

5.3 Plants

The entirety of the BSA is located within an operating Arboretum, which is regularly maintained, heavily landscaped, and frequented by the public. Most of the plant species present within the BSA are considered ornamental and are non-native to the region.

5.3.1 Common Plant Species

The plant species observed within the BSA include 35 non-native species and 13 native species and are presented in Table 1 below; non-native species are indicated with an asterisk.

Table 1. Plant Species Observed within the BSA

Scientific Name	Common Name
DICOTS (Woody and Herbaceous Plant Species)	
ADOXACEAE	**MOSCHATEL FAMILY**
Sambucus mexicanus	Mexican elderberry
ASTERACEAE	**SUNFLOWER FAMILY**
*Lactuca serriola**	prickly lettuce*
Helianthus californicus	California sunflower
BETULACEAE	**BIRCH FAMILY**
*Betula nigra**	river birch*
*Corylus colurna**	Turkish hazelnut*
BIGNONIACEAE	**BIGNONIA FAMILY**
*Handroanthus impetiginosa**	pink trumpet tree*
*Jacaranda mimosifolia**	jacaranda*
CAPRIFOLIACEAE	**HONEYSUCKLE FAMILY**
*Lonicera fragrantissima**	winter honeysuckle*
CUPRESSACEAE	**CYPRESS FAMILY**
*Cupressus funebris**	mourning cypress*
*Glyptostrobus pensilis**	Chinese swamp cypress*
*Metasequoia glyptostroboides**	dawn redwood*
Sequoia sempervirens	coast redwood
*Taxodium distichum**	bald cypress*
*Taxodium mucronatum**	Montezuma cypress*
FABACEAE	**LEGUME FAMILY**
Acmispon glaber	deerweed
*Inga feuillei**	ice-cream bean tree*
ARALIACEAE	**GINSENG FAMILY**
*Hedera helix**	English ivy*
BRASSICACEAE	**MUSTARD, CRUCIFERS, AND CABBAGE FAMILY**
*Hirschfeldia incana**	short-pod mustard*

Table 1. Plant Species Observed within the BSA

Scientific Name	Common Name
CUPRESSACEAE	**CONIFER FAMILY**
Sequoia sempervirens	Coast Redwood
FAGACEAE	**BEECHES, CHESTNUTS, AND OAKS FAMILY**
Acmispon glaber	Deerweed
Quercus berberidifolia	Scrub Oak
Quercus agrifolia	coast live oak
*Quercus dentata**	daimyo oak*
GERANIACEAE	**GERANIUM FAMILY**
Geranium sp.*	Geranium species*
JUGLANDACEAE	**WALNUT FAMILY**
*Juglans nigra**	black walnut*
*Juglans californica***	southern California black walnut**
LAURACEAE	**LAUREL FAMILY**
*Camphora officinarum**	camphor tree*
MAGNOLIACEAE	**MAGNOLIA FAMILY**
*Magnolia grandiflora**	southern magnolia*
MORACEAE	**MULBERRY FAMILY**
*Ficus macrophylla**	Moreton bay fig*
MYRTACEAE	**MYRTLE FAMILY**
*Eucalyptus globulus**	Tasmanian blue gum*
*Lophostemon confertus**	Brisbane box*
*Melaleuca citrina**	Crimson bottlebrush*
OLEACEAE	**OLIVE FAMILY**
*Fraxinus insularis**	Chinese flowering ash*
*Ligustrum lucidum**	glossy privet*
*Olea europaea**	European olive*
PAPAVERACEAE	**POPPY FAMILY**
Eschscholzia californica	California poppy
PLATANACEAE	**PLANE-TREE FAMILY**
Platanus racemosa	western sycamore
POACEAE	**GRASS FAMILY**
Bromus sp.*	Bromus species*
POLYGONACEAE	**BUCKWHEAT FAMILY**
Eriogonum fasciculatum	California buckwheat
PROTEACEAE	**PROTEA FAMILY**

Table 1. Plant Species Observed within the BSA

Scientific Name	Common Name
*Grevillea robusta**	Silky Oak*
ROSACEAE	**ROSE FAMILY**
*Eriobotrya japonica**	loquat*
SAPINDACEAE	**SOAPBERRY FAMILY**
*Cupaniopsis anacardioides**	carrotwood*
ULMACEAE	**ELM FAMILY**
*Ulmus americana**	American elm*
MONOCOTS (Grasses and Grass-like Plant Species)	
AMARYLLIDACEAE	**AMARYLLIS FAMILY**
*Agapanthus africanus**	African Lily*
ARECACEAE	**PALM FAMILY**
Chamaerops humilis	European fan palm*
Livistona chinensis	Chinese fan palm*
Washingtonia filifera	California fan palm
*Washingtonia robusta**	Mexican fan palm*

*Non-native species.
**Special-status species discussed in further detail in Section 5.3.2.

5.3.2 Special-Status Plant Species

Special-status plant species include those listed as Endangered, Threatened, Rare, or those species proposed for listing by the USFWS under the FESA, those listed by CDFW under the CESA, and the CNPS.[2,3,4] The CNPS inventory is sanctioned by the CDFW and essentially serves as the list of candidate plant species for State listing. CNPS's California Rare Plant Ranks (CRPR) 1B and 2 species are considered eligible for State listing as Endangered or Threatened.

A total of 55 special-status plant species were identified in the CNDDB (CNDDB 2023) and CNPS (CNPS 2023) database searches to have been historically recorded from the Mount Wilson and surrounding eight quadrangles and from a search of IPaC of the Project vicinity. During the field surveys, the habitat within the BSA was evaluated for each of the species identified in the initial database search results. Following the in-field evaluation, the potential to occur list was refined based on the confirmed presence or absence of suitable habitat. In

[2] Species listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (Title 50 Code of Federal Regulations [CFR] 17.12 [listed plants], Title 50 CFR 17.11 [listed animals] and includes notices in the Federal Register for proposed species).
[3] Species listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (Title 14 California Code of Regulations 670.5).
[4] Plants listed as rare under the California Native Plant Protection Act (California Fish and Game Code Section 1900 *et seq.*).

total, only two special-status plant species were determined to have potential to occur within the BSA, as presented in Table 2. These include the southern California black walnut (*Juglans californica;* CRPR 4.2) and Engelmann oak (*Quercus engelmannii;* CRPR 4.2). The southern California black walnut, a CRPR 4.2 species, was directly observed within the BSA during the July 11, 2023, field survey near Tule Pond (Figure 3). Special-status plant species detected within the BSA are not considered to be naturally occurring and are instead components of the actively managed botanical gardens associated with the Arboretum.

Table 2. Special-Status Plant Species with Potential to Occur

Common Name ***Scientific Name*** [1]	**Status** [2]	**General Habitat Description** [3]	**Potential for Occurrence in BSA** [4]
Plants			
Southern California black walnut *Juglans californica*	Federal: None State: None CRPR: 4.2	Found in alluvial sites in chaparral, cismontane woodland, coastal scrub, and riparian woodland habitats. Occurs between 50 and 900 meters (160 to 2,955 feet). Blooms March to August.	**Present.** This species was observed within the BSA during the July 11, 2023, field survey, adjacent to Tule Pond.
Engelmann Oak *Quercus engelmannii*	Federal: None State: None CRPR: 4.2	Found in chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. Occurs between 50 and 1300 meters. Blooms March to June.	**Low.** This species was recorded to have occurred naturally within the BSA in 1935; however, the natural community was deemed extirpated by urbanization from the interpretation of aerial photos in 1978.

[1] Special-status plant species and natural vegetation communities known from the CNDDB and CNPS to occur in the Condor Peak, Chilao Flat, Waterman Mountain, Baldwin Park, El Monte, Los Angeles, Azusa, Mount Wilson and Pasadena quadrangles, and from IPaC for the Project vicinity. Nomenclature for special-status plant species conforms to CNPS.

[2] Sensitivity Status Codes

Federal
- **FT** – Federally Threatened under the Federal Endangered Species Act
- **FE** – Federally Endangered under the Federal Endangered Species Act
- **FC** – A Federal Candidate for listing under the Federal Endangered Species Act

State
- **ST** – State Threatened under the California Endangered Species Act
- **SE** – State Endangered under the California Endangered Species Act
- **SR** – State Rare under the California Endangered Species Act

CRPR — California Rare Plant Rank (CRPR)
- **1A:** Plants presumed extinct in California
- **1B**: Plants rare, threatened, or endangered in California and elsewhere
- **2**: Plants rare, threatened, or endangered in California, but more common elsewhere
- **3**: Plants more information is needed for
- **4**: Plants of limited distribution – a watch list
  - **0.1**: Seriously threatened in California
  - **0.2**: Fairly endangered in California
  - **0.3**: Not very endangered in California

California Department of Fish and Wildlife (CDFW)

[3] General Habitat Descriptions from CNPS.

[4] Historical CNDDB records from CDFW (CNDDB 2023) and CNPS (CNPS 2023).

No USFWS-designated Critical Habitat for any special-status plant species coincides with the BSA.

5.3.3 Protected Trees

Numerous trees occur within the BSA. The trees that occur along the lake edge of Baldwin Lake include mostly non-native trees that would be protected under City of Arcadia's Tree Preservation Ordinance. Tule Pond is similarly surrounded by non-native trees that would also be protected by the City of Arcadia's Tree Preservation Ordinance. Native trees such as coast live oak, and non-California native oak trees, were observed within the BSA during field surveys and are protected under the Los Angeles County Oak Tree Ordinance, and the City of Arcadia's Tree Preservation Ordinance (Figure 3).

5.4 Wildlife

The entirety of the BSA is located within an operating Arboretum, which is regularly maintained, heavily landscaped, and frequented by the public. Suitable habitat in the standard sense (i.e., native vegetation and naturally occurring resources used for shelter and forage), is generally absent from the entire BSA. However, the groomed ornamental landscaping and both Baldwin Lake and Tule Pond have the potential to support various species that are habituated and adapted to surviving in urban environments. Biological resources in the form of nesting substrate, shelter, and forage, although associated with mostly ornamental and non-native species, are present throughout the BSA and have the potential to support wildlife.

5.4.1 Common Wildlife

Wildlife species observed during the field surveys, within the BSA, included 12 bird species, five reptile species, one amphibian species, one invertebrate species, and three mammal species. A comprehensive list of all wildlife species observed is presented in Table 3.

Table 3: Wildlife Species Observed within the BSA

Scientific Name	Common Name
Birds	
Accipitridae	Hawks, Eagles, and Kites
Accipiter cooperii	Cooper's hawk
Anatidae	Ducks, Geese, and Swans
Anas platyrhynchos	Mallard
Branta canadensis	Canada goose
Ardeidae	Herons, Egrets, and Bitterns
Ardea herodias	great blue heron
Ardea alba	great egret
Columbidae	Doves and Pigeons
Zenaida macroura	mourning dove
Emberizidae	Old World Buntings
Melozone crissalis	California towhee

Table 3: Wildlife Species Observed within the BSA

Scientific Name	Common Name
Melospiza melodia	song sparrow
Fringillidae	True Finches, Siskins, Crossbills, Hawaiian Honeycreepers
Haemorhous mexicanus	house finch
Icteridae	New World Blackbirds
Icterus cucullatus	hooded oriole
Agelaius phoeniceus	Red-winged blackbird
Mimidae	Mockingbirds and Thrashers
Mimus polygottos	northern mockingbird
Odontophoridae	New World Quails
Callipepla californica	California quail
Parulidae	Wood warblers
Geothlypis trichas	common yellowthroat
Passerellidae	New World Sparrows
Melozone crissalis	California towhee
Picidae	Woodpeckers, Sapsuckers and Flickers
Dryobates pubescens	Downy Woodpecker
Melanerpes formicivorus	acorn woodpecker
Trochilidae	Hummingbirds
Calypte anna	Anna’s hummingbird
Selasphorus rufus/sasin	Rufous/Allen's hummingbird
Troglodytidae	Wrens
Thryomanes bewickii	Bewick's wren
Turdidae	Thrushes
Sialia mexicana	western bluebird
Turdus migratorius	American robin
Tyrannidae	Tyrant Flycatchers
Sayornis nigricans	black phoebe
Empidonax difficilis	Pacific-slope flycatcher
Reptiles	
Emydidae	Pond turtles and terrapins
Chrysemys picta	painted turtle
Trachemys scripta elegans	red-eared slider
Trionychidae	Softshell Turtles
Apalone spinifera	spiny softshell turtle
Phrynosomatidae	North American Spiny Lizards and Allies
Sceloporus occidentalis	western fence lizard
Amphibians	
Ranidae	True Frogs
Lithobates catesbeianus	American bullfrog
Invertebrates	
Nymphalidae	Butterflies
*Danaus plexippus**	monarch butterfly*
Nymphalis antiopa	mourning cloak
Pieridae	Whites and Sulphurs
Colias philodice	clouded sulphur

Table 3: Wildlife Species Observed within the BSA

Scientific Name	Common Name
Mammals	
Canidae	Foxes, Wolves, Jackals, and Allies
Canis latrans	coyote
Leporidae	Rabbits and Hares
Sylvilagus audubonii	desert cottontail
Sciuridae	Squirrels
Tamiasciurus hudsonicus	American red squirrel
Spermophilus beecheyi	California ground squirrel

*Special-status species discussed in further detail in Section 5.4.2.

5.4.2 Special-Status Wildlife Species

Special-status wildlife species include those listed by USFWS under FESA and by CDFW under CESA. USFWS and CDFW officially list species as either Threatened, Endangered, or as Candidates for listing. Special-status species also include those with federal protection under the Bald Eagle Protection Act (e.g., bald eagle, golden eagle), the MBTA, and state protection under CEQA Section 15380(d).

All birds, except European starlings, English house sparrows, rock doves (pigeons), and non-migratory game birds such as quail, pheasant, and grouse, are protected under the MBTA. However, non-migratory game birds are protected under CFGC Section 3503. Many other species are considered by CDFW to be California species of special concern (SSC) and others are on a CDFW Watch List (WL). The CNDDB tracks species within California for which there is conservation concern, including many that are not formally listed, and assigns them a CNDDB Rank (CNDDB 2023). Although CDFW SSC and WL species, and species that are tracked by the CNDDB but not formally listed, are afforded no official legal status, they may receive special consideration during the environmental review process. Additionally, CFGC Sections 3503, 3505, and 3800 prohibit the take, destruction, or possession of any bird, nest, or egg of any bird except English house sparrows and European starlings unless authorization is obtained from CDFW.

Additionally, special-status species include bat species designated by the Western Bat Working Group (WBWG) as either medium or high conservation priority. Although designation under the WBWG does not afford bat species legal status or formal protection at this time, the objectives of the WBWG designations are to identify bat species that are either threatened or at risk and encourage practices that benefit bat populations, support practices that minimize unavoidable impacts, and recommend mitigation as needed (WBWG 2017). Therefore, these species may receive special consideration during the environmental review process as well.

A total of 49 special-status wildlife species were identified in the CNDDB search of the Mount Wilson and surrounding eight quadrangles and from a search of IPaC for the Project vicinity (CNDDB 2023 and USFWS 2023). During the field surveys, the habitat within the

BSA was evaluated for each of the species identified in the initial database search results. Following that evaluation, the potential to occur list was refined based on the confirmed presence or absence of suitable habitat. For the purpose of this evaluation, suitable habitat for special-status wildlife is defined as habitat that is consistent with the vegetation composition, topography, and soil conditions generally associated with a special-status species which could be utilized as a nesting, foraging, and/or a sheltering resource during breeding, migration, and/or dispersal events.

In total, nine special-status wildlife species were determined to have potential to occur within the BSA, as presented in Table 4. These include Crotch bumble bee (state candidate endangered), monarch butterfly (federal candidate and state Species of Greatest Conservation Need), two-striped garter snake (*Thamnophis hammondii*; state SSC), yellow-breasted chat (*Icteria virens*; state SSC), yellow warbler (*Setophaga petechia*; state SSC), least Bell's vireo (*Vireo bellii pusillus*; federally endangered and state endangered), western red bat (*Lasiurus frantzii*; state SSC and WBWG-H), hoary bat (*Lasiurus cinereus*; WBWG-M), and western yellow bat (*Lasiurus xanthinus*; state SSC and WBWG-H).

Table 4. Special-Status Wildlife Species with Potential to Occur

Common Name *Scientific Name*[1]	Status[2]	General Habitat Description[3]	Occurs in the BSA[4]
Invertebrates			
Crotch bumble bee *Bombus crotchii*	Federal: None State: CE Other: CNDDB	Occurs at relatively warm and dry sites, including the inner Coast Range of California and the margins of the Mojave Desert.	**High.** Potentially suitable habitat is present within the BSA and a CNDDB occurrence from 2020 coincides with the BSA. The occurrence was recorded at Baldwin Lake.
Monarch Butterfly *Danaus plexippus*	Federal: Candidate State: Species of Greatest Conservation Need	Found in winter roosts along the California coast from Mendocino County south to Baja California, Mexico. Roosts in wind-protected tree groves (eucalyptus, Monterey pine, Monterey cypress) with nectar and water sources nearby.	**Present**. Species was observed during 2023 and 2024 field surveys.
Reptiles			
Southwestern pond turtle *Emys pallida*	Federal: Candidate State: None Other**:** SSC	Occurs in aquatic water bodies including flowing rivers and streams, permanent lakes, ponds, reservoirs, settling ponds, marshes and other wetlands. Semi-permanent water bodies such as stock ponds, vernal pools and seasonal wetlands can also be utilized on a temporary	**Moderate.** Several turtle individuals resembling the southwestern pond turtle species were observed from a distance within Baldwin Lake during the July 11, 2023, field survey; however, the species could not be confirmed with 100 percent certainty. Historical records associated with the

Table 4. Special-Status Wildlife Species with Potential to Occur

Common Name *Scientific Name*[1]	Status[2]	General Habitat Description[3]	Occurs in the BSA[4]
		basis.	Arboretum indicate that this species was once present and suitable habitat is located within the BSA.
Two-striped gartersnake *Thamnophis hammondii*	Federal: None State: None Other: SSC	Highly aquatic, found in or near permanent freshwater, often along streams with rocky beds and riparian growth. Known from coastal California from the vicinity of Salinas to northwest Baja California, from sea to about 2,135 meters (7,000 feet).	**Low.** Potentially suitable habitat is present within the BSA and occurrences within 10 to 12 miles of the BSA have been recorded within the past 10 years.
Birds			
Yellow-breasted chat *Icteria virens*	Federal: None State: None Other: CDFW SSC	Occurs in riparian forest, riparian scrub, riparian woodland.	**Low.** Marginally suitable habitat present withing the BSA and one occurrence from 2001 recorded within five miles of the BSA.
Yellow Warbler *Setophaga petechia*	Federal: None State: None Other: CDFW SSC	Occurs in riparian forest, riparian scrub, riparian woodland.	**Low.** Marginally suitable habitat is present within the BSA and two occurrences were recorded within 12 miles of the BSA in the last six years.
least Bell's vireo *Vireo bellii pusillus*	Federal: FE State: SE Other: CNDDB	Summer resident of southern California in low riparian habitat in vicinity of water or in dry river bottoms, below 610 meters (2,000 feet).	**Low.**; Potential habitat suitable for migratory least Bell's vireo is present within the BSA and multiple occurrences have been recorded within 10 miles of the BSA.
Mammals			
Western red bat *Lasiurus frantzii*	Federal: None State: None Other: SSC	Prefers edges or habitat mosaics that have trees for roosting and open areas for foraging. Roosting habitat includes forests and woodlands from sea level up through mixed conifer forests. Feeds over a wide variety of habitats including grasslands, shrublands, open woodlands and forests, and croplands. Not found in desert areas.	**Moderate.** Potentially suitable roosting habitat is present within the BSA and one occurrence from 2015 was recorded within five miles of the BSA.

Table 4. Special-Status Wildlife Species with Potential to Occur

Common Name *Scientific Name*[1]	Status[2]	General Habitat Description[3]	Occurs in the BSA[4]
Hoary bat *Lasiurus cinereus*	Federal: None State: None Other: WBWG-M	May be found at any location in California. Winters along the coast and in southern California, breeding inland and north of the winter range. During migration, may be found at locations far from the normal range. Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees, feeds primarily on moths; requires water.	**Low.** Potentially suitable roosting habitat is present within the BSA. However, all recorded occurrences are over 75 years old.
western yellow bat *Lasiurus xanthinus*	Federal: None State: None Other: SSC, WBWG-H	Occurs below 610 meters (2,000 feet) in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in trees and palms.	**Low.** Potentially suitable roosting habitat is present within the BSA. However, all recorded occurrences are over 100 years old.

[1] Special-status species known from the CNDDB to occur on the Condor Peak, Chilao Flat, Waterman Mountain, Baldwin Park, El Monte, Los Angeles, Azusa, Mt. Wilson and Pasadena quadrangles, and from IPaC for the Project vicinity. Nomenclature for special-status wildlife conforms to CNDDB.

[2] Sensitivity Status Codes

Federal	**FT**	- Federally Threatened under Federal Endangered Species Act (FESA)
	FE	- Federally Endangered under FESA
	FC	- Federal Candidate for listing under FESA
State	**ST**	- State Threatened under California Endangered Species Act (CESA)
	SE	- State Endangered under CESA
	SC	- State Candidate for listing under CESA
Other	**SSC**	- Designated as a Species of Special Concern by CDFW
	WL	- Designated as a Watch List species by CDFW
	CNDDB	- Tracked by CDFW in the California Natural Diversity Data Base or considered locally sensitive
	WBWG-H	- Designated by the Western Bat Working Group (WBWG 2023) as High Priority - species that are imperiled or are at high risk of imperilment.
	WBWG-M	- Designated by the WBWG (2023) as Medium Priority – a level of concern that should warrant closer evaluation, more research, and conservation actions of both species and possible threats.

[3] General Habitat Descriptions from CNDDB.

[4] Historical records from CDFW (CNDDB 2023).

In general, the BSA was determined to provide some level of suitable habitat for the above list of special-status species. Although most of the vegetation present within the BSA is considered ornamental and/or non-native in association with the operating Arboretum, both vegetation and permanent water sources are present in abundance that could support the

special-status species included herein. Each species identified as either having moderate or high potential, or to be present, is further described below. The location of each observation is depicted on Figure 3.

One CNDDB record from 2015 of western red bat (*Lasiurus frantzii*), a CDFW SSC, was recorded within five miles of the BSA; therefore, this species has a moderate potential to occur. Western red bat forages over a variety of habitats, roosts almost exclusively in trees, and requires a water source nearby (Zeiner et al. 1988-1990). Within the BSA, the Arboretum contains a mix of ornamental trees and open areas adjacent to open water (Baldwin Lake and Tule Pond) which provides foraging and roosting habitat for western red bat. The species was not detected during field surveys, however the species is nocturnal and is generally active after sunset and before sunrise. Given the presence of roosting and foraging habitat and a record of the western red bat within 5 miles of the BSA in the last 10 years, there is a moderate potential for the species to occur within the BSA.

Several unidentifiable turtle individuals resembling southwestern pond turtles were observed basking in Baldwin Lake during the July 11, 2023, field survey; however, due to the distance of the observations, a positive identification could not be made with 100 percent certainty. The permanent water source, readily available basking options, and upland habitat throughout the shoreline provide high quality habitat for aquatic species that can be used for foraging, shelter, and breeding. The southwestern pond turtle prefers slow moving or standing water sources, similar to the conditions representative of both Baldwin Lake and Tule Pond (USGS 2006a) and could potentially be present in association with either body of water. Historical records associated with the Arboretum's wildlife inventory indicate that this species was once present. However, this species is generally less common in urban settings and numerous red-eared sliders (*Trachemys scripta elegans*) were observed within each body of water during the field surveys. This species commonly outcompetes southwestern pond turtle for resources.

One CNNDB record from 2020 of Crotch bumble bee (*Bombus crotchii*), a state Candidate for listing as Endangered, coincides with the BSA; therefore, this species has a high potential to occur. Generally, *Bombus* species inhabit open grassland and scrub habitats with nest sites primarily underground (CDFW 2023). Additionally, Crotch bumble bee rely heavily on abandoned rodent burrows/holes in open landscapes for nesting opportunities. Although there is a recent occurrence of this species within the BSA, preferred nesting habitat and abandoned rodent burrows/holes were not observed during the field surveys. The habitat and general landscape within the BSA do not reflect conditions typically associated with Crotch bumble bee nests; however, Bombus species have been documented nesting in man-made structures (CDFW 2023). The species is a generalist forager and has been reported as visiting a wide variety of flowering plants including non-native plant species (CDFW 2023); therefore, there is potential this species could utilize the BSA as foraging habitat when seeking nectar sources but has low potential to nest.

The monarch butterfly, a Candidate for federal listing, was directly observed within the BSA during both field surveys and is therefore assumed present. The monarch butterflies detected were likely migrating individuals. The specific locations of monarch butterfly overwintering and roosting grounds in southern California are well documented and

generally occur along the Pacific Coast near Santa Cruz and San Diego (USFWS 2020), none of which are in the vicinity of the BSA. Similar to the Crotch bumble bee, potential nectar sources occur within the BSA along the perimeters of both Baldwin Lake and Tule Pond that could be used by the occasional migrating or dispersing individual. Therefore, there is potential that monarch butterflies could utilize the BSA as foraging habitat when seeking nectar sources but breeding and overwintering is unlikely.

No USFWS-designated Critical Habitat for any special-status wildlife species coincides with the BSA.

5.4.3 Wildlife Corridor

In an urban context, a wildlife migration corridor can be defined as a linear landscape feature of sufficient width and buffer to allow animal movement between two comparatively undisturbed habitat fragments, or between a habitat fragment and some vital resource that encourages population growth and diversity. Habitat fragments are isolated patches of habitat separated by otherwise foreign or inhospitable areas, such as urban tracts or highways. Two types of wildlife migration corridors seen in urban settings are regional corridors, defined as those linking two or more large areas of natural open space, and local corridors, defined as those allowing resident wildlife to access critical resources (food, cover, and water) in a smaller area that might otherwise be isolated by urban development.

The Project is located within the Arboretum and is surrounded by an urbanized area of the City of Arcadia. Therefore, the BSA does not occur within or intersect a recognized/ established regional wildlife corridor.

Trees within and adjacent to the BSA provide some opportunities for cover, resting, foraging, and nesting to localized bird populations; however, they do not function as a significant wildlife movement corridor.

6. IMPACTS ON BIOLOGICAL RESOURCES

Biological resources may be either directly or indirectly impacted by a Project. Direct and indirect impacts may be either permanent or temporary in nature. These impact categories are defined below.

- **Direct**: Any alteration, physical disturbance, or destruction of biological resources that would result from Project-related activities is considered a direct impact. Examples include clearing vegetation, encroaching into wetlands or a stream, and the loss of individual species and/or their habitats.
- **Indirect**: As a result of Project-related activities, biological resources may also be affected in a manner that is ancillary to physical impacts. Examples include elevated noise and dust levels, soil compaction, increased human activity, decreased water quality, and the introduction of invasive wildlife (domestic cats and dogs) and plants.

- **Permanent**: All impacts that result in the long-term or irreversible removal of biological resources are considered permanent. Examples include constructing a building or permanent road on an area containing biological resources.
- **Temporary**: Any impacts considered to have reversible effects on biological resources can be viewed as temporary. Examples include the generation of fugitive dust during construction; or removing vegetation for the preparation of stream bank stabilization activities, and either allowing the natural vegetation to recolonize or actively revegetating the impact area. Surface disturbance that removes vegetation and disturbs the soil is considered a long-term temporary impact because of slow natural recovery in arid ecosystems.

6.1 Construction

The anticipated impacts of the Project construction on biological resources are described below. Removal of sediment from Baldwin Lake and Tule Pond, installation of pipelines and irrigation systems, installation of new landscaping around the perimeters of Baldwin Lake and Tule Pond, and reconstruction of the concrete retaining wall around Baldwin Lake would result in temporary impacts. The construction of new structures in and around the perimeters of Baldwin Lake and Tule Pond as well as the construction of the new access road on the west side of the Arboretum could result in permanent impacts.

6.1.1 Vegetation Communities

Direct impacts to vegetation communities during Project construction would include removal of trees and vegetation along the perimeters of Baldwin Lake and Tule Pond and the crushing and clearing and grubbing of vegetation from equipment or other vehicles. Indirect impacts to vegetation during Project construction could occur during surface disturbances that, if not controlled, could increase the potential for fugitive dust, erosion, and sediment deposition. Such impacts would most likely occur during the removal of sedimentation within Baldwin Lake and Tule Pond and during installation of irrigation systems and pipelines. In addition, the introduction and spread of non-native/invasive species could occur from contaminated equipment transported on site. However, impacts to native and/or sensitive vegetation communities are not anticipated as none are present within the BSA. Both temporary and permanent impacts would occur to ornamental landscaping, only. Additionally, implementation of BMPs, as identified in Section 8, would reduce the potential for any impacts to vegetation to a less than significant level.

6.1.2 Aquatic Resources

Aquatic resources (Baldwin Lake and Tule Pond) are located within the BSA and the direct Project footprint. Permanent impacts to these aquatic resources would occur as a result of Project construction and have the potential to be significant. Avoidance and Minimization Measure BIO-6 (see Section 7), describes avoidance, minimization, and mitigation to reduce any potentially significant impacts to aquatic resources. Additionally, Baldwin Lake should be considered as a potential WOS per the RWQCB, and a Lake per CDFW. Coordination

with RWQCB and CDFW regarding potential regulatory permitting requirements is recommended.

6.1.3 Special-Status Plant Species

No federal or state-listed plant species were identified during the field surveys. One special-status plant species, the southern California black walnut, a CDFW species of special concern, was observed within the BSA; however, this individual was likely planted in association with development of the arboretum. Direct impacts to this species would occur through removal or trimming during Project construction activities within the Project footprint, if the individual cannot be avoided.

Indirect impacts to special-status plant species (specifically, the California black walnut) occurring within the BSA could result from construction-related habitat loss and modification related to dust, noise, and stormwater runoff. In addition, the introduction and spread of non-native/invasive species could occur from equipment brought on site that has potential to outcompete native special-status plant species for critical resources.

If such impacts were to occur, they would be considered significant; however, impacts to the southern California black walnut would be reduced to a less than significant level through compliance with the appropriate tree ordinances and acquisition of approved Tree Removal Permits as described in Avoidance and Minimization Measure BIO-5 (see Section 7). Additionally, implementation of the BMPs as identified in Section 8, would further reduce the overall level of impact to less than significant.

6.1.4 Protected Trees

Coast live oak trees, protected under the Los Angeles County Oak Tree Ordinance, and other tree species protected under the City of Arcadia's Tree Preservation Ordinance, were observed within the BSA during the field surveys. Direct impacts to these trees would occur through removal or trimming during Project construction activities within the Project footprint, if individuals cannot be avoided. Indirect impacts to protected trees could result from construction-related habitat loss and modification related to dust, noise, and stormwater runoff. In addition, the introduction and spread of non-native/invasive species could occur from equipment brought on site that has potential to outcompete native special-status plant species for critical resources. If such impacts occurred, they would be considered significant.

Tree Removal Permits in compliance with the appropriate ordinance would need to be obtained if the removal of protected trees is required by the Project. Through compliance with the appropriate tree ordinances and acquisition of approved Tree Removal Permits as described in Avoidance and Minimization Measure BIO-5 (see Section 7), impacts to protected trees would be reduced to a less than significant level. Additionally, implementation of the BMPs as identified in Section 8, would further reduce the overall level of impact to less than significant.

6.1.5 Migratory Bird Treaty Act/California Fish and Game Code

Trees in the BSA, although predominantly ornamental, provide suitable nesting habitat for native bird species. In addition, vegetation along the shoreline of both Baldwin Lake and Tule Pond provides suitable wetland vegetation for nesting waterfowl. As a result, birds protected by the MBTA and by CFGC (hereafter, “nesting birds”) have the potential to nest in the BSA and could be directly impacted during vegetation removal activities and through ground-disturbing activities required during the removal of sedimentation from both Baldwin Lake and Tule Pond during construction. Such activities would result in the loss of suitable nesting substrate and potential harm to active nests (if present).

Indirect impacts to nesting birds within the BSA could occur during construction because of noise, dust, and increased human presence from construction activities. Such disturbances could result in increased nestling mortality due to nest abandonment or decreased feeding frequency. Such indirect impacts would be considered significant.

If such impacts occurred, they would be considered significant; however, through the implementation of both the BMPs identified in Section 8 and Avoidance and Minimization Measure BIO-1 (see Section 7), direct and indirect impacts to nesting birds would be avoided. As a result, impacts would be reduced to a less than significant level.

6.1.6 Special-Status Wildlife Species

Two monarch butterflies (federal candidate for listing) were directly observed within the BSA. Wintering and roosting grounds for monarch butterfly are well documented and do not overlap with the BSA; therefore, no impacts are anticipated to roosting activity. A direct impact resulting from loss of foraging habitat would occur in association with areas of vegetation removal but would be less than significant given the temporary nature of the impacts and the abundance of nectar sources available in the immediate vicinity. Indirect impacts could occur as a result of noise, vibration, dust, and increased human presence that have potential to temporarily degrade the overall quality of habitat and disrupt behavioral patterns. If such impacts occurred, they would be considered significant; however, implementation of the standard BMPs as outlined in Section 8 of this report would reduce such impacts to a less than significant level.

The Crotch bumble bee (state candidate endangered) has a high potential to occur based on the presence of suitable foraging habitat and a recent CNDDB detection from 2020 that overlaps with the BSA. The removal of vegetation and associated ground disturbance could result in direct impacts to the species including a temporary loss of foraging and sheltering habitat; or direct mortality or injury as a result of vehicle or equipment strikes should a nest be present. *Bombus* species, including the Crotch bumble bee, are thought to rely heavily on abandoned rodent burrows/holes in open landscapes for nesting opportunities, none of which were observed within the BSA. Therefore, direct impacts to nest sites are unlikely and would not be considered significant. The loss of foraging habitat would also be less than significant given the temporary nature of the impacts and the fact that all nectar sources are associated with ornamental plants, which are not the species preferred nectar source (CDFW 2023). Indirect impacts could occur as a result of noise, vibration, dust, and

increased human presence that have potential to temporarily degrade the overall quality of habitat and disrupt behavioral patterns. If such impacts occurred, they would be considered significant; however, implementation of the standard BMPs as outlined in Section 8 would reduce such impacts to a less than significant level.

Two additional special-status wildlife species were determined to have a moderate potential to occur. The western red bat has potential to be directly impacted by Project construction activities if existing trees within the BSA, including the numerous ungroomed, mature palm trees that provide suitable roosting habitat for individuals or small groups, are trimmed or removed. Southwestern pond turtle were also determined to have a moderate potential to occur. Direct impacts resulting from removal of sedimentation and vegetation removal associated with both Baldwin Lake and Tule Pond would temporarily interfere with water quality, water levels, substrate and vegetation conditions, basking sites, and nesting habitat. Direct strikes to both individuals and active nests during ground disturbance also has potential to occur. For both species, indirect impacts could occur as a result of noise, vibration, dust, and increased human presence that have potential to degrade the quality of habitat and disrupt behavioral patterns. If such impacts occurred, they would be considered significant; however, implementation of the standard BMPs as outlined in Section 8 and Avoidance and Minimization Measures BIO-2, BIO-3, and BIO-4 (see Section 7), would reduce impacts to a less than significant level.

6.1.7 Wildlife Movement Corridor

The BSA does not serve as a regional wildlife corridor and as a result, impacts to a regional wildlife movement corridor are not anticipated.

6.2 Operation

Significant impacts to biological resources during operations and routine maintenance of the Project are not anticipated. This is due to the Project's location within the Arboretum and the routine maintenance activity that has historically occurred throughout the facility. It is assumed that post-construction operation will be implemented at a comparable level to the baseline conditions associated with pre-construction operation and that any biological resources present are therefore assimilated to such disturbance. Additionally, the Project would have a net benefit to biological resources as it would improve the overall health and function of the two water bodies and potentially reduce the frequency and intensity in which maintenance would need to be performed. Upon completion, the Lake and Pond will provide a healthy, robust ecosystem for existing species and may increase migratory bird sightings.

7. RECOMMENDED AVOIDANCE AND MINIMIZATION MEASURES

BIO-1. Nesting Birds

Project construction activities (including removal of sedimentation from both Baldwin Lake and Tule Pond) should avoid, if possible, the nesting bird season (defined as February 1 through September 1). If the nesting bird season cannot be avoided, the following measures

shall be employed to avoid and minimize impacts to special-status birds and nesting birds protected under the MBTA and CFGC:

1. A pre-construction nesting bird survey shall be conducted by a PW-approved, qualified biologist with the necessary skills to identify birds and nesting bird behaviors, within three days prior to the start of construction activities (specifically related to ground disturbance and the dewatering or removal of sedimentation from Baldwin Lake and Tule Pond) to determine whether active nests are present within or directly adjacent to the construction zone of the Project Footprint.

    a. In the event an active nest is detected, a qualified biologist shall record the location of the nest and establish a 300-foot radius avoidance buffer for passerines and a 500-foot radius avoidance buffer for raptors.

    b. In the event an active nest is found within wetland vegetation associated with either Baldwin Lake or Tule Pond, any dewatering or sediment removal activities will be postponed until a qualified biologist has confirmed the nest is inactive.

    c. Demarcation of nest avoidance buffer zones 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, etc.) and observed avian response to ambient conditions (e.g., existing traffic noise and human activity). The nest avoidance buffers will be clearly delineated with flagging or fencing.

    d. The qualified biologist shall monitor the status of all active nests at least once per week. If signs of disturbance or stress are observed, the qualified biologist shall modify the buffer size between the nest and construction activity, as appropriate, to minimize impacts. The qualified biologist shall monitor each active nest until it is determined that nestlings have fledged and dispersed, or the nest is no longer active. Should an active nest of any federal or state-listed bird species be detected at any time, construction activity within 300 feet of the nest shall not commence or shall cease if already underway, and the applicable federal and/or state agency (USFWS and/or CDFW) shall be notified. Work in other areas of the Project site may continue as determined appropriate by the qualified biologist.

BIO-2. Develop a Southwestern Pond Turtle Management and Relocation Plan

A Southwestern Turtle Management and Relocation Plan will be prepared by a County-approved qualified biologist prior to the commencement of the Project and will provide the following information:

a. Relocation methodology and procedures;

b. How to proceed, and provisions to follow, in the event an individual is encountered during construction;

c. Requirements for exclusionary fencing around the Project footprint; and

d. Daily visual inspection requirements, including morning pre-construction sweeps of all active work areas and as-needed inspections under parked/stages vehicles and equipment tires prior to moving.

Construction will follow the methods and procedures to properly relocate turtles prior to construction to ensure impacts are less than significant.

BIO-3. Special-Status Species Habitat Removal

A qualified biologist (i.e., a biologist familiar with the special-status species determined to have the potential to occur) will be present during all clearing and grubbing activities that result in the initial removal of upland or wetland vegetation that could serve as habitat for special-status species (i.e., shelter, cover, etc.). The qualified biologist shall conduct a preconstruction sweep of the area identified for clearing and grubbing immediately prior to equipment mobilization to confirm there are no special-status species present. If any special-status species are detected within the Project Footprint, the qualified biologist will flush the individual(s) out of harm's way. The qualified biologist shall remain on-site for the duration of the clearing and grubbing and periodically survey the site ahead of equipment to ensure the Project footprint is clear of special-status species. Should any federal or state-listed species be detected, construction activity within 300-feet of the observed individual(s) shall not commence or shall cease if already underway, and the applicable federal and/or state agency (USFWS and/or CDFW) shall be notified.

BIO-4 Special-Status Bats

1. All palm trees to be removed as part of the Project will be evaluated by a qualified biologist (i.e., a biologist experienced and familiar with bat ecology) for their potential to support roosting bats, by conducting a one-night pre-construction survey two weeks prior to the start of tree removal.
    a. If the pre-construction survey determines that no special-status bat species or active roosts are present, then trees shall be removed within two weeks following the preconstruction survey. If trees are not removed within the two-week period, then another preconstruction survey shall be conducted to determine, once again, whether special-status bat species are present. Trees shall be removed within two weeks following the repeat survey.

       If active special-status bat roosts are present, tree removal shall be avoided during the maternity season (April 15 through August 31).
2. All potential roost trees shall be removed and trimmed in the presence of a qualified biologist. Removal and trimming of trees with potential for roosting will be conducted using a two-step tree trimming process that occurs over two consecutive days.
    a. Day 1, Step 1: Under the supervision of a qualified biologist, tree branches and limbs with no cavities shall be removed by hand (e.g., using chainsaws).

This will create a disturbance (noise and vibration) and physically alter the tree. Bats roosting in the tree will either abandon the roost immediately or, after emergence, will avoid returning to the roost.

b. Day 2, Step 2: Removal of the remainder of the tree under the supervision of a qualified biologist may occur on the following day.

3. All construction activity in the vicinity of an active roost shall be limited to daylight hours.

BIO-5. Protected Trees

Prior to the initiation of construction, an arborist approved by the PW shall review the existing Arboretum tree inventory to determine if there are trees present within the Project footprint that have potential to require protection and/or replacement under the PW or County of Los Angeles Department of Parks and Recreation (DPR Tree Policies, or other state, federal, and/or local laws, as applicable, to ensure impacts to protected trees are less than significant.

BIO-6. Aquatic Resources

Standard aquatic resource BMPs will be implemented by the Contractor, including:

1. Prior to construction, an Aquatic Resource Specialist will provide an Environmental Tailgate to go over applicable mitigation measures.
2. The Aquatic Resource Specialist shall work with the BMP crew to clearly define any work areas as required by any mitigation measures.
3. An Aquatic Resource Specialist shall be present during all surface water dewatering. The pump intake shall be equipped with exclusionary screens.

8. BEST MANAGEMENT PRACTICES

The following BMPs would be employed during construction of the Project to help minimize or eliminate potential impacts to biological resources within the BSA. BMPs are distinguished from mitigation measures because they are based on existing regulatory requirements and/or are standard practices and procedures of PW and/or its contractors and are not unique to the Project.

- The Project would implement Rule 403 dust control measure required by the South Coast Air Quality Management District (SCAQMD), which would include the following:
    - Water shall be applied to exposed surfaces at least two times per day to prevent generation of dust plumes.
    - The construction contractor shall utilize at least one of the following measures at each vehicle egress from the Project site to a paved public road:
        - Pave the surface extending at least 100 feet and at least 20 feet wide;

        - Utilize a wheel shaker/wheel spreading device consisting of raised dividers at least 24 feet long and 10 feet wide to remove bulk material from tires and vehicle undercarriages; or
        - Install a wheel washing system to remove bulk material from tires and vehicle undercarriages.
    - All trucks hauling soil, sand, and other loose materials shall be covered (e.g., with tarps or other enclosures that would reduce fugitive dust emissions).
    - Construction activity on exposed or unpaved dirt surfaces shall be suspended when wind speed exceeds 25 miles per hour (mph).
    - Non-toxic soil stabilizers shall be applied according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
    - Streets shall be swept at the end of the day if visible soil is carried onto adjacent public paved roads. If feasible, water sweepers with reclaimed water shall be used.
- A Storm Water Pollution Prevention Plan (SWPPP), which will include erosion and sedimentation BMPs, shall be developed and implemented for construction activities. The SWPPP may include, but would not be limited to, the following:
    - 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.
- Construction erosion control BMPs may include the following:
    - Temporary desilting basins;
    - Silt fences;
    - Gravel bag barriers;
    - Temporary soil stabilization with mattresses and mulching;
    - Temporary drainage inlet protection; and
    - Diversion dikes and interceptor swales.
- Although full road closures are not anticipated, residences near the Project would be notified prior to the start of construction (e.g., via flyers) of any road and parking restrictions in their vicinity. The notices would include a telephone number for comments or questions related to construction activities.

9. CONCLUSIONS

Based on the analysis presented in this report, potentially significant impacts to special-status species, protected trees, and aquatic resources could occur during Project

construction. However, by implementing and adhering to the Avoidance and Minimization Measures in Section 7 and the BMPs outlined in Section 8 of this report, significant impacts to biological resources would be reduced to a level below significance. Significant impacts are not expected to occur during the operation phase of the Project.

Should you have any questions or comments regarding this report, or if additional information is required, please feel free to contact me.

Sincerely,



Emma Fraser
Wildlife Biologist

Enclosure:
Attachment A: Photographs of Existing Conditions within the BSA

Grace Komjakraphan-Tek
Los Angeles County Public Works
October 31, 2024

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Los Angeles County Public Works
October 31, 2024

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Grace Komjakraphan-Tek
Los Angeles County Public Works
October 31, 2024

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ATTACHMENT A

Photographs of Existing Conditions within the BSA

Attachment A. Photographs of Existing Conditions within the BSA



Photograph 1. Northeast-facing view of Baldwin Lake. Photo taken on southwest end of Baldwin Lake.



Photograph 2. West-facing view of pathway near Baldwin Lake. Photo taken in eastern portion of Baldwin Lake.



Photograph 3. West-facing view of Baldwin Lake. Photo taken on west end of Baldwin Lake.



Photograph 4. East-facing view of Baldwin Lake showing existing concrete retaining wall. Photo taken on east side of Baldwin Lake.



Photograph 5. Northeast-facing view of Tule Pond. Photo taken on southwest corner of Tule Pond.



Photograph 6. Southwest-facing view of Tule Pond. Photo taken on northeast end of Tule Pond.



Photograph 7. West-facing view of Tule Pond. Photo taken on east end of Tule Pond.



Photograph 8. Northwest-facing view of staging area



Photograph 9. North-facing view of paved haul route.

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Appendix C
Cultural Resources Memorandum



AECOM

Cultural Resources Assessment

for the Baldwin Lake and Tule Pond Restoration Project

October 30, 2024

Delivering a better world

Prepared for:

Los Angeles County Public Works
900 South Fremont Avenue, 5th Floor
Alhambra, CA 91803-1331

Prepared by:

Samantha Lorenz
Archaeologist
T: (505) 850-2465
E: Samantha.Lorenz@aecom.com

Monica Wilson
Architectural Historian
T: (619) 610-7600
E: Monica.Wilson@aecom.com

Evan Mackall
Architectural Historian
T: (209) 418-9267
E: Evan.Mackall@aecom.com

AECOM
One California Plaza
300 South Grand Avenue
Los Angeles, CA 90071

T: (213) 593-8100
F: (213) 593-8178

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Acronyms and Abbreviations

AB	Assembly Bill
Arboretum	Los Angeles County Arboretum
ARMR	Archaeological Resource Management Reports
Basin	South Coast Air Basin
BERD	Built Environment Resource Directory
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
County	Los Angeles County
CRHR	California Register of Historical Resources
District	Los Angeles County Flood Control District
DPR	Los Angeles County Department of Parks and Recreation
EDPM	ethylene propylene-diene monomer
HDS	hydrodynamic separator
HRG	Historic Resources Group, LLC
LACABGHD	Los Angeles County Arboretum and Botanic Garden Historic District
LASCA	Los Angeles State and County Arboretum
MLD	Most Likely Descendent
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NETR	Nationwide Environmental Title Research
NHMLA	Natural History Museum of Los Angeles County
NHPA	National Historic Preservation Act
NPS	National Park Service
NRHP	National Register of Historic Places
PRC	Public Resources Code
project	Baldwin Lake and Tule Pond Restoration Project
PW	Los Angeles County Public Works
RCP	reinforced concrete pipe
SCCIC	South Central Coastal Information Center
SLF	Sacred Lands File
SOI	Secretary of the Interior
SVP	Society of Vertebrate Paleontology
TCR	Tribal Cultural Resource
TPS	Technical Preservation Services

Executive Summary

Los Angeles County Public Works (PW) retained AECOM to complete a cultural resources assessment for the proposed Baldwin Lake and Tule Pond Restoration Project (project), which was conducted in compliance with the California Environmental Quality Act (CEQA), Public Resources Code (PRC) Sections 21000 et seq., and the State CEQA Guidelines, California Code of Regulations Sections 15000 et seq. This assessment builds on a 2014 cultural resources study that was completed by the Historic Resources Group, LLC (HRG 2014). PW, the lead agency, proposes to restore and enhance Baldwin Lake and Tule Pond, two features of the Los Angeles County Arboretum and Botanic Garden in Los Angeles County. The project site is at 301 North Baldwin Avenue in Arcadia, in central Los Angeles County in the northwestern portion of the San Gabriel Valley (U.S. Geological Survey – Mount Wilson Quadrangle, 7.5-Minute Series topographic map within Township 6 North, Range 11 West).

AECOM implemented a Native American contact program as part of the cultural resources assessment, to identify potential tribal cultural resources or other cultural resources that may be affected by the project. A search of the Native American Heritage Commission's (NAHC) Sacred Lands File returned a positive result. The NAHC identified 11 Native American representatives who are culturally affiliated with the project area from seven tribes. On September 7, 2023, PW sent Project notification letters with invitations to consult on the project per AB 52 to representatives of 11 tribes. Consultation conclusion letters were sent to the Tribes on October 28, 2024. A summary of the Native American contact program is provided in Appendix C.

On July 25, 2023, AECOM submitted a records search at the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System at California State University, Fullerton. The search focused on a 0.25-mile radius of the project area and included a review of previously completed cultural resources investigations. Eight previous cultural resource investigations were documented at the SCCIC within a 0.25-mile radius of the project area; three of these overlap the project area. The SCCIC records search identified 42 previously recorded cultural resources within a 0.25-mile radius; three are in the project area. The California Inventory of Historic Resources, Built Environment Resources Directory, and the Office of Historic Preservation Archaeological Resources Directory were reviewed to identify cultural resources in the project area.

An intensive-level cultural resources survey of the project area was performed on August 17, 2023, by AECOM Architectural Historian Monica Wilson, M.A., who meets the Secretary of the Interior's (SOI) Professional Qualifications in History and Architectural History, and Archaeologist Samantha Lorenz, M.A., RPA, who meets the SOI Professional Qualification Standards in Archaeology. A supplemental cultural resources survey was conducted on June 3, 2024, by Alexandra Walton, M.A., RPA, who meets the SOI Professional Qualification Standards in Archaeology.

No archaeological sites that constitute National Register of Historic Places-eligible or California Register of Historical Resources-eligible historic properties/resources were encountered in the project area. However, a number of archaeological resources have been identified previously in the project vicinity, suggesting that buried cultural deposits could be present. Therefore, potential exists to encounter previously undiscovered archaeological and/or tribal cultural resources during project-related activities that involve ground disturbance. Archaeological and tribal monitoring is recommended during these ground-disturbing activities. Monitoring should be done by, or under the direction of, an archaeologist who meets the SOI standards and a qualified Native American monitor. If archaeological and/or tribal cultural resources are encountered during ground-disturbing activities, work should be halted temporarily in the vicinity of the find, until a qualified archaeologist and/or Native American monitor can evaluate and determine appropriate treatment for the resource, in accordance with PRC Section 21083.2(i).

The assessment identified four built environment resources in the project area: the Queen Anne Cottage, the Coach Barn, the Reid-Baldwin Adobe, and the Los Angeles County Arboretum and Botanic Garden Historic District. Any proposed alterations that are planned for the historical resources should be consistent with the SOI Standards for the Treatment of Historic Properties, particularly the SOI Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings.

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Introduction

The Baldwin Lake and Tule Pond Restoration Project (project) is being proposed at the Los Angeles County Arboretum (Arboretum) and Botanic Garden. Los Angeles County Public Works (PW) would make several improvements to the lake and pond, to restore the aquatic ecosystem; improve water quality; increase stormwater detention; and provide additional aesthetic, educational, and operational benefits to visitors. The Arboretum provides enjoyment and learning opportunities to the public regarding nature, horticulture, and historic resources.

The Arboretum and garden encompass 127 acres, of which the lake covers 3.4 acres and the pond covers 0.3 acre in the central portion of the Arboretum grounds. Overflow of the lake and pond during storm events discharges into adjacent Arcadia Wash, which is part of the Rio Hondo watershed and the larger Los Angeles River watershed. The project would achieve multiple benefits: improving water quality by treating contaminated urban runoff, improving the aquatic ecosystem and habitat, contributing to water conservation by increasing infiltration to reduce potable and imported water use, addressing climate change by increasing carbon sequestration through tree planting, making Arboretum facility upgrades, and providing educational and outreach signage.

Project Location

The project site is at 301 North Baldwin Avenue in Arcadia, in central Los Angeles County in the northwestern portion of the San Gabriel Valley (Figures 1 and 2). The project area is shown on the U.S. Geological Survey–Mount Wilson Quadrangle, 7.5-minute series topographic map within Township 6 North, Range 11 West.

The project site sits at the foot of the San Gabriel Mountains and is bound by Colorado Boulevard and Interstate 210 on the north; Baldwin Avenue on the east; single-family residences and Hugo Reid Drive/Old Ranch Road on the south; and single-family residences and Golden West Avenue/Tallac Drive on the west. Santa Anita Park and Westfield Santa Anita Mall are east and southeast of the Arboretum, across Baldwin Avenue.

Baldwin Lake and Tule Pond are prominent features of the Arboretum site (Figure 3). The lake is approximately 205 feet east of the pond, and the two features are separated by vegetation, mature trees, and paved pedestrian walkways. Key historic features adjacent to the lake include the Queen Anne Cottage, the Coach Barn, the Reid-Baldwin Adobe, the cobblestone retaining walls around the shoreline, and numerous trees that date back to the 1880s, when the Queen Anne Cottage was built, and to the opening of the Arboretum in 1948.

Project Description

The primary components of the proposed Project would restore and enhance the Lake and Pond through flood control and water quality improvements, and perseveration measures.



Source: Esri Maps & Data, 2023.

Figure 1
Regional Vicinity Map



Los Angeles County Public Works
Baldwin Lake and Tule Pond Restoration Project
PROJECT: 60699349

FIGURE 2

Cultural Resources - Project Location

AECOM Oakland CA 10/30/2024 USER stevensona1 PATH \\na.aecomnet.com\lfs\AMER\LosAngeles-USLAX02\DCS\Projects\BDL\60699349_LADPW_Baldwin\900_CAD_GIS\920_GIS\02_Maps\02_Report_Maps\Cultural\Figure 3 - Baldwin Lake - Project Components.mxd



Los Angeles County Public Works
Baldwin Lake and Tule Pond Restoration Project
PROJECT: 60699349

FIGURE 3

Cultural Resources - Project Components

Project Background

The Lake and the Pond are two significant and historic features at the Arboretum, and of the greater Los Angeles region. The Arboretum is under ownership of the County of Los Angeles (County) and operated by the Los Angeles County Department of Parks and Recreation (DPR), and the Los Angeles Arboretum Foundation.

The Lake is a natural spring fed sag pond that developed due to seismic movement of the Raymond Fault. This sag pond was a water source for the earliest inhabitants of today's Los Angeles County who lived on the site of the Arboretum at least 3,000 years ago and was a Native American settlement prior to the arrival of the Spanish to California. The site was part of the greater Rancho Santa Anita, one of the Mexican land grants of Southern California. The land was purchased in 1875 by Elias Baldwin to develop Baldwin Ranch. In the late 1880s, Mr. Baldwin removed sediment from the lake, deepening it to 12 to 15 feet, and built the Queen Anne Cottage on the west side of the lake. In 1947, the State of California and the County of Los Angeles jointly purchased the property to create an arboretum around the Baldwin site. Baldwin Lake is listed on the National Register of Historic Places as a support feature for the Queen Anne Cottage.

The Pond was once an upstream arm of Baldwin Lake until it was cut off in the 1950s by grading activities. It is currently fed by urban runoff from the residential areas to the northwest and west of the Arboretum. The Pond was originally planted with California native rush and tule to represent what the overall area would have looked like prior to development. Typically, the Pond holds water during the rainy season of winter and early spring and dries up by mid to late spring. When the Pond reaches capacity, runoff drains into the Lake through an existing reinforced concrete pipe culvert.

Stormwater runoff from the surrounding streets and residential areas has contributed to soil contamination and deposition in the Pond, especially near the existing storm drain outlets. This sedimentation negatively affects the Pond's ability to perform as a pre-settling basin to the Lake. In addition to deposition from storm drains, a significant amount of sediment build-up has been generated from on-site Arboretum grounds. This is due to both uncontrolled runoff during storm events and erosion of the Pond's shore edge due to scouring and wave action of the incoming storm flows. As the Pond is unable to perform as originally intended, more of this sediment has been transported to the Lake. During strong storm events, water in the Lake will overflow into Arcadia Wash. The Arcadia Wash is owned and maintained by Los Angeles County Flood Control District (District) and is part of the Rio Hondo watershed, a tributary of the larger Los Angeles River watershed. A discussion of plans for the excavated soils is provided in the *Construction Scenario and Phasing* section below, as well as in Section III, Air Quality.

Originally 15-18 feet deep[1], currently, the Lake is approximately 2.5 to 3 feet deep due to the accumulation of sediment and organic material which has resulted in low levels of dissolved oxygen, algae build-up, temperature spikes during the summer, lack of water circulation, and potentially high bacteria levels. Uncontrolled runoff during storm events, erosion along the shoreline, including deterioration of the historic cobblestone retaining walls, and overgrown vegetation have contributed to the Lake's degradation. The declining condition of the Lake and Pond has also reduced aquatic productivity and bird use at both features. As a stopover along the Pacific Flyway for migratory bird species[2], the current shallow depths are not sufficient to sustain a healthy ecosystem.

Project Objectives

The primary objectives of the project would be to:

[1] Los Angeles County Arboretum. 2019. Baldwin Lake Frequently Asked Questions. Available at: https://www.arboretum.org/save-baldwin-lake/frequently-asked-questions/#:~:text=A%3A%20Over%20the%20years%2C%20the,24%20inches%20when%20rains%20occur.
[2] https://www.arboretum.org/save-baldwin-lake/frequently-asked-questions/#:~:text=A%3A%20Over%20the%20years%2C%20the,24%20inches%20when%20rains%20occur.

- Improve flood protection and increase water conservation by increasing the depth of the Lake and Pond by excavating approximately 65,000 cubic yards (CY) of sediment.
- Improve water quality by treating stormwater runoff.
- Improve flood protection and increase water conservation by increasing stormwater detention.
- Increase water conservation by reducing potable water demand by lining the Lake to reduce water loss.
- Increase water conservation and improve water quality by improving infiltration of stormwater and low flow runoff at the Pond.
- Enhance the aesthetic, historical, and operational features of the Lake and Pond.

In addition, the proposed Project addresses critical needs of the greater Los Angeles County region by:

- Improving water supply; stormwater will be collected and percolated into the groundwater.
- Improving surface water quality by treating contaminated urban runoff
- Reducing flood risk during storm events.
- Enhancing open space, habitat, and recreational features by increasing water depth, improving the ecosystem, and providing various recreational features.
- Reducing lake infiltration to reduce potable and imported water use.
- Addressing climate change by reducing energy consumption and increasing carbon sequestration through tree plantings.

Proposed Project Components

The primary components of the project would restore and enhance the lake and the pond through flood control improvements, water quality improvements, and preservation. The project would include the following components for the lake (Figure 4):

Lake Improvements

- Reconfigure the 48-inch reinforced concrete pipe (RCP) outlet on the upstream end of the Lake and construct an outlet structure with energy dissipators to minimize erosion on the opposite shoreline.
- Apply air-placed concrete along the west perimeter of the Lake for slope stability.
- Removal of excess sediment and organic material for a proposed lake depth up to14 feet.
- Removal of impacted trees along and within the shoreline perimeter to restore the historic alignment of the Lake.
- Construct a concrete retaining wall with a cobblestone façade around the perimeter of the Lake in compliance with a historical preservation consultant to restore the Lake’s historical appearance, and shoreline alignment. The existing, deteriorating wall would be restored based on National Park Service (NPS) Technical Preservation Services (TPS) Preservation Briefs that outline acceptable repair, rehabilitation, and maintenance methods appropriate to retaining walls and cobblestone façade.
- Construct a vault hatch structure (10-foot by 8-foot) at the south end of the Lake by the Boat House to house mechanical and electrical equipment This structure will connect to a below grade wet well (24-feet deep by 10-foot diameter). Improvements to the Boat House are not part of this project. Construct aeration compressor stainless steel cabinet (16-inches by 16-inches by 20.5-inches)
- Construct a viewing deck to provide aesthetic and education opportunities at the eastern end of the Lake.

- Construct an approximately 18-foot by 70-foot concrete boat ramp along the west perimeter of the Lake to facilitate maintenance on the Lake.
- Install landscaping, including an irrigation system along the perimeter of the Lake. Landscaping improvements will occur within 10 feet of the Lake edge.
- Install a bentonite liner in the Lake to minimize water loss from percolation. A ground water management system may be required to remove potential hydrostatic pressure underneath the liner.
- Install an aeration and filtration system consisting of pipes, pumps and diffusers tied to a power source to promote a healthy aquatic habitat.
- Install an ultrasonic algae remediation system, which is a non-chemical system that pulses out sound waves at specific frequencies to disable algae growth and prevent biofilm formation without causing harm to other forms of life.
- Provide guidance on operations and maintenance of the Project's improved water quality features for use by maintenance staff.

The proposed project includes the following components for the Pond (Figure 2-5, Tule Pond Proposed Improvements):

Pond Improvements

- Reconstruct the three outlet structures at the upstream end of the Pond with energy dissipators to minimize erosion of the adjacent embankment.
- Reconstruct a portion of the Arboretum Drain 3 system at Vaquero Road, which will include a new RCP storm drain upstream of the diversion structure, connector pipe, and rural catch basin.
- Realign the existing storm drain that currently conveys runoff from Old Ranch Road to the Lake to outlet into the Pond. This storm drain will require a new outlet structure with energy dissipators to minimize erosion of the adjacent embankment.
- Strategically place concrete riprap around the outlet structures to minimize bank erosion.
- Re-grade the Pond and excavate excess material to achieve the Pond's historical capacity, with depths up to 12 feet. This would increase the capacity and stormwater percolation. Preliminary investigation shows that this sediment is contaminated with lead and would need to be handled and disposed of at a site permitted to accept contaminated soil.
- Install landscaping and irrigation system along the perimeter of the Pond. Landscaping limits will be determined in conjunction with the Arboretum's arborist.
- Install four in-line treatment systems, which will include diversion structures, hydrodynamic separator units (HDS) and media filtration systems along the three existing storm drains and proposed Old Ranch Road Storm Drain realignment for further stormwater treatment before runoff outlets into the Pond. The HDS units will treat runoff for trash, sediment, and oils and the media filtration systems will treat any additional sediment, debris, free-floating oil, heavy metals and phosphorus not captured by the HDS units.
- Construct three new ¾" crushed rock maintenance access road along the west side of the Arboretum for future maintenance access to the four proposed HDS units and media filtration units. The access roads to be constructed along the west side within the Arboretum property are near the intersection of Vaquero and Old Ranch Road (Old Ranch Road), near Vaquero Road and Golden West Avenue (D1), and near Monte Verde Drive and Golden West Avenue (D2 & D3). The length and width of the access roads vary at different segments; the widest access road is at D1 and ranges from approximately 12 to 45 feet and the length varies from 165 feet (Old Ranch) to 281 feet (D2 & D3).



Source: Los Angeles County Public Works 2024

Figure 4
Baldwin Lake Proposed Improvements

Project Personnel

AECOM staff who meet the Secretary of the Interior's (SOI) Professional Qualification Standards in Archaeology, History, and Architectural History have prepared this study. The architectural history component of this study was prepared by Architectural Historians Monica Wilson, M.A. and Evan Mackall, M.A. The archaeological component of this study was prepared by Archaeologist Samantha Lorenz, M.A. The paleontology component was prepared by Joe Stewart, Ph.D. The surveys were conducted by Monica Wilson, Samantha Lorenz, and Alexandra Walton, M.A., RPA. Geographic information system and report mapping support was provided by Alec Stevenson, M.A.

Report Organization

This report is organized following the 1990 Archaeological *Resource Management Reports (ARMR): Recommended Contents and Format* guidelines (California OHP 1990). The first section of the report includes the project location, a project description, and a brief discussion of project personnel. The second section describes the regulatory, natural, and cultural settings, along with a detailed discussion of the historical context of the project area. The subsequent four sections discuss the archival research, paleontological records search and literature review, Native American contact program, and the field survey methodology and results. The final discussion section presents an impact analysis and management recommendations and is followed by the references section.



Source: Los Angeles County Public Works 2024.

Figure 5
Tule Pond Proposed Improvements

Project Setting

Regulatory Setting

This project is subject to county, state, and federal regulatory compliance. Applicable federal, state, and local regulations are briefly discussed below.

Federal Regulations

National Environmental Policy Act (NEPA), Title 40 Code of Federal Regulations (CFR) Parts 1500-1508

NEPA directs federal agencies to use all practicable means to "preserve important historic, cultural, and natural aspects of our national heritage" (Section 101[b] [4]). Regulations for implementing NEPA are found in 40 CFR 1500–1508. Consideration of cultural resources is required under NEPA when a project is under federal jurisdiction.

National Historic Preservation Act (NHPA), Title 16 U.S. Code Section 470 et seq.

NHPA and its implementing regulations (36 CFR 800) establish a program for the preservation of historic properties throughout the United States. Section 106 of NHPA requires that federal projects or projects under federal jurisdiction take into account the effect of an undertaking on properties eligible for or included in the NRHP. Federal agencies issuing permits for the project would be required to comply with NHPA.

NHPA establishes the NRHP, which is "an authoritative guide to be used by federal, state, and local governments, private groups and citizens to identify the nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment" (36 CFR 60.2). To be eligible for listing in the NRHP, a property must be at least 50 years old (or have reached 50 years old by a project's completion date) and possess significance in American history and culture, architecture, or archaeology to meet one or more of four established criteria (36 CFR 60.4):

A. Association with events that have made a significant contribution to the broad patterns of our history;
B. Association with the lives of persons significant in our past;
C. 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; and/or
D. Have yielded, or may be likely to yield, information important in prehistory or history.

Historic resources eligible for listing in the NRHP are considered "historic properties," and may include buildings, sites, structures, objects, and historic districts. A potential historic property less than 50 years of age may be eligible under NRHP Criteria Consideration G if it can be demonstrated that sufficient time has passed to understand its historic importance (NPS 1995:43). To be eligible for listing in the NRHP, a property must also have integrity, which is defined as "the ability of a property to convey its significance." Within the concept of integrity, the NRHP recognizes seven aspects or qualities that, in various combinations, define integrity: feeling, association, workmanship, location, design, setting, and materials (NPS 1995:44–45).

The implementing regulations include a provision for early and effective communication with interested parties, such as Native American tribes. Under this provision (36 CFR 800.2[A]), the lead agency is responsible for contacting local Native American representatives and informing them of a project's intent and nature. Each contacted Native American tribe is then provided "a reasonable opportunity to identify its concerns about historic properties; advise on the identification and evaluation of historic properties, including those of traditional religious and cultural importance; articulate its views on the undertaking's effects on such properties; and participate in the resolution of adverse effects."

State Regulations

California Environmental Quality Act and Guidelines for Implementation

The California Environmental Quality Act (CEQA) is encoded in Sections 21000 et seq. of the Public Resources Code (PRC), with Guidelines for implementation codified in the California Code of Regulations (CCR), Title 14, Chapter 3. Sections 15000 et seq., of the CCR require state and local public agencies to identify the environmental impacts of proposed discretionary activities or projects, determine if the impacts will be significant, and identify alternatives and mitigation measures that will substantially reduce or eliminate significant impacts to the environment. State owned properties are subject to the provisions of PRC Section 5024 and 5024.5.

CEQA is intended to prevent significant avoidable impacts on the environment by requiring feasible alternatives or mitigation measures. If cultural resources are identified within the project area, the sponsoring agency must take those resources into consideration when evaluating project effects. The level of consideration may vary with the importance of the cultural resource.

Historical resources are considered part of the environment, and a project that may cause a substantial adverse effect on the significance of a historical resource is a project that may have a significant effect on the environment (PRC Section 21084.1). The definition of “historical resources” is contained in Section 15064.5 of the CEQA Guidelines, as follows:

1. California properties formally determined eligible for, or listed in, the California Register of Historical Resources (CRHR)
2. Those resources included in a local register of historical resources, as defined in Section 5020.1(k) of the PRC, or identified as significant in a historical resources survey meeting the requirements of Section 5024.1(g) of the PRC
3. Those resources that a lead agency determines to be historically significant, provided the determination is based on substantial evidence

The CRHR was designed to be used by State and local agencies, private groups, and citizens to identify existing historical resources in the state, and to indicate which of those resources should be protected, to the extent prudent and feasible, from substantial adverse change. The criteria for the CRHR focus on resources of statewide, rather than national, significance. To be eligible for listing in the CRHR, a property must be at least 45 years of age and possess significance at the local, state, or national level, under one or more of the following four criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the U.S.;
2. It is associated with the lives of persons important to local, California, or national history;
3. It embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values; and/or
4. It has yielded, or has the potential to yield, information important in the prehistory or history of the local area, California, or the nation.

Potential historical resources eligible for listing in the CRHR may include buildings, sites, structures, objects, and historic districts. A resource less than 45 years of age may be eligible if it can be demonstrated that sufficient time has passed to understand its historic importance. Although the enabling legislation for the CRHR is less rigorous with regard to the issue of integrity, the expectation is that properties reflect their appearance during their period of significance (PRC Section 4852). Historical resources not listed in the CRHR, or other local lists still may be considered historical resources at the discretion of the lead agency on the project.

Furthermore, the CEQA Guidelines Appendix G checklist identifies potential impacts on historical and archaeological resources and human remains. The checklist includes three questions. Would the project:

a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?
c. Disturb any human remains, including those interred outside of formal cemeteries?

When an initial study identifies the existence of, or the probable likelihood of, Native American human remains at a project site, the lead agency is to work with the appropriate Native Americans as identified by the Native American Heritage Commission (NAHC). The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans, as identified by NAHC (14 CCR Section 15064.5[d]). PRC Sections 5097.99, 5097.991 establish that it is a felony to obtain or possess Native American artifacts or human remains taken from a grave or cairn and sets penalties for these actions. They also mandate that it is the policy of the State to repatriate Native American remains and associated grave goods.

Questions on the checklist are designed to assess whether project impacts would be potentially significant, less than significant with mitigation incorporated, less than significant, or have no impact. The final determination of project impacts is made by the lead agency on a project.

Appendix G (PRC Section 5097.5 and Section 30244) includes consideration of paleontological resources as part of the analysis of geology and soils, by stating the question of whether a project would “directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.” Treatment of paleontological resources under CEQA generally is similar to treatment of cultural resources, requiring evaluation of resources, assessment of potential impacts on significant or unique resources, and development of mitigation measures for potentially significant impacts, which may include monitoring combined with data recovery and/or avoidance. PRC Sections 5097.5 and 30244 prohibit the removal of any paleontological site or feature from public lands without permission of the jurisdiction agency, define the removal of paleontological sites or features as a misdemeanor, and require reasonable mitigation of adverse impacts on paleontological resources from development on public (State, county, city, district) lands.

Assembly Bill 52

Assembly Bill (AB) 52, enacted in September 2014, established a new class of resources under CEQA, *tribal cultural resources* (TCRs), separate from the definitions for “historical resources” and “archaeological resources.” A tribal cultural resource is defined as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe.” AB 52 also provides both federal and non-federally recognized tribes with the right to formal consultation with project lead agencies.

Health and Safety Code Sections 7050.5, 7051, and 7054

This code establishes that any person who knowingly mutilates, disinters, wantonly disturbs, or willfully removes any human remains in or from any location without authority of the law is guilty of a misdemeanor. It further defines procedures for the discovery and treatment of Native American remains.

Health and Safety Code Sections 8010–8011

This code is intended to provide consistent State policy to ensure that all California Native American remains and cultural materials are treated with dignity and respect. The code extends policy coverage to non-federally recognized tribes, as well as federally recognized groups.

Local Regulations

City of Arcadia General Plan

The Arcadia General Plan addresses the protection of cultural resources in the following policies (City of Arcadia 2010):

Policy H-1.4: Support the preservation and maintenance of historically and architecturally significant buildings and neighborhoods.

Policy PR-9.1: Encourage the maintenance and preservation of historically, culturally, and or/ architecturally significant structures and sites in the community.

Policy PR-9.2: Explore partnerships with local community organizations, such as the Arcadia Historical Society, to continue the preservation of historic and cultural resources.

Policy PR-9.3: Collect, preserve and celebrate Arcadia's heritage with quality exhibits and programs.

Policy PR-9.4: Preserve Santa Anita Park's use as a live horse racing venue and preserve and maintain iconic structures at the racetrack such as the grandstand.

Policy PR-9.5: Identify historic sites, structures, neighborhoods, and other resources through a Historic Resource Inventory.

Policy PR-9.6: Explore the establishment of a Cultural Heritage Ordinance.

Policy PR-9.7: Develop incentives that promote preservation and rehabilitation of historic structures, sites, and other resources.

The Arcadia General Plan does not contain policies for paleontological resources, but it recognizes paleontological resources in Implementation Action 6-12, General Plan Update, which requires cultural resources assessments for any proposed development that may impact a known or potential archaeological or paleontological site (BonTerra Consulting 2010).

Society of Vertebrate Paleontology Standards

The Society of Vertebrate Paleontology (SVP) has established standard guidelines (SVP 2010) that outline professional protocols and practices for conducting paleontological resource assessments and surveys; monitoring and mitigation; data and fossil recovery; sampling procedures; and specimen preparation, identification, analysis, and curation. State regulatory agencies with paleontological regulations and standards typically accept and use the professional standards set forth by the SVP. The SVP (2010) defines significant paleontological resources as:

> Fossils and fossiliferous deposits, here defined as consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years).

Thus, any identifiable vertebrate fossil is considered significant.

Paleontological potential is the potential for the presence of significant paleontological resources. All sedimentary rocks, some volcanic rocks, and some low-grade metamorphic rocks have the potential to yield significant paleontological resources. Paleontological potential is determined only after a field survey of a rock unit, in conjunction with a review of available literature and relevant paleontological locality records from the entire rock unit.

In its Standard Procedures for the Assessment and Mitigation of Adverse Impacts on Paleontological Resources, the SVP (2010) defines the following four categories of paleontological potential for rock units to contain significant paleontological resources:

- **High Potential** – Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources. These units include sedimentary formations and some volcaniclastic (e.g., ashes or tephras) formations, and some low-grade metamorphic rocks that contain significant paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils (e.g., middle Holocene and older, fine-grained fluvial sandstones, argillaceous and carbonate-rich paleosols [ancient soils], cross-bedded point bar sandstone). Paleontological potential comprises both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, plant, or trace fossils, and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, paleoecologic, taphonomic, biochronologic, or stratigraphic data. Rock units that contain potentially datable organic remains older than late Holocene, including deposits associated with animal nests or middens, and rock units that may contain new vertebrate deposits, traces, or trackways also are classified as having high potential.
- **Undetermined Potential** – Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment are considered to have undetermined potential. Further study is necessary to determine whether these rock units have high or low potential to contain significant paleontological resources. A field survey by a qualified professional paleontologist to specifically determine the paleontological resource potential of these rock units is required before a paleontological resource impact mitigation program can be developed. In cases where no subsurface data are available, paleontological potential sometimes can be determined by strategically located excavations into subsurface stratigraphy.
- **Low Potential** – Reports in the paleontological literature or field surveys by a qualified vertebrate paleontologist may allow determination that some rock units have low potentials for yielding significant fossils. Such rock units will be poorly represented by specimens in institutional collections, or based on the general scientific consensus only preserve fossils in rare circumstances, and the presence of fossils is the exception not the rule (e.g., basalt flows or Recent colluvium).
- **No Potential** – Some rock units have no potential to contain significant paleontological resources (e.g., high-grade metamorphic rocks such as gneisses and schists; and plutonic igneous rocks such as granites and diorites).

In general terms, for geologic units with high or undetermined potential, an adequate program for mitigating the impact of development is implemented and may include measures such as intensive field survey and surface salvage before the start of earth-moving activities, monitoring by a qualified paleontological resource monitor, salvaging three to four unearthed fossil remains, screen washing to recover small specimens, preparing salvaged fossils to a point of being ready for curation, appropriate curation, and provision for repository storage of prepared fossil specimens, and final reporting. For geologic units with low potential, protection or salvage efforts typically are not required. Rock units with no potential require no protection or impact mitigation measures relative to paleontological resources.

The SVP (2010) summarizes the difference between archaeological and paleontological resources and their assessments as follows:

> It is important to distinguish between archaeological and paleontological resources when discussing the paleontological potential of rock units. The boundaries of an archaeological resource site define the areal/geographic extent of an archaeological resource, which is generally independent from the rock unit on which it sits. However, paleontological sites indicate that the containing rock unit or formation is fossiliferous. Therefore, the limits of the entire rock unit, both areal and stratigraphic, define the extent of the paleontological potential.

Natural Setting

Geology

The project site is in the city of Arcadia, and Arcadia sits at the boundary between the Peninsular Ranges geomorphic province on the south and the Transverse Ranges geomorphic province on the north. The east/west–trending San Gabriel Mountains, which underlie the northern part of the city, are part of the Transverse Ranges. Locally, Arcadia is within the northwest portion of the San Gabriel Valley, which is bounded on the north by the San Gabriel Mountains, on the west by the Repetto and Merced Hills, on the south by the Puente Hills, and on the east by the San Jose Hills. The San Gabriel Mountains are the result of uplift along the Sierra Madre fault system at the base of the mountain front. The Sierra Madre fault system extends from the western San Fernando Valley eastward to the city of Claremont, where it joins the Cucamonga fault.

Erosion of the San Gabriel Mountains from water and gravity have formed fan-shaped alluvial wedges that fill the San Gabriel Valley, providing a basin for groundwater storage and a geomorphic surface that has recorded young (less than 12,000 years old) fault movements. Beneath the alluvial fan surface are hundreds of feet of alluvium, composed primarily of sand, gravel, cobbles, and boulders, with some clay-rich deposits bordering the northern side of the Raymond fault, which generally runs northeast/southwest through the northern section of Arcadia. The project area is in the northern part of the city, where the San Gabriel Mountains begin to rise steeply north of the Sierra Madre fault zone. Basement rocks in this area are crystalline granitic and metamorphic rock units that are millions of years old.

According to the Seismic Hazard Zone Report for the Mount Wilson 7.5-minute Quadrangle Los Angeles County, California, the project area is covered by alluvial sediments of Pleistocene and Holocene age (less than 12,000 years old). These deposits consist of varying proportions of sand, gravel, silt, and clay. The geologic mapping of Dibblee and Ehrenspeck (1998) indicates that three geologic units in the project area potentially could be affected by the project (Figure 6). These are the Holocene gravel and sand of major stream channels (Qa), Holocene alluvial gravel, sand, and silt of valley areas (Qg), and Pleistocene alluvial fan gravel and sand derived from the San Gabriel Mountains (Qof).

Climate

The project area is within the South Coast Air Basin (Basin), an area covering approximately 6,745 square miles and bounded by the Pacific Ocean to the west and south and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties, in addition to the San Gorgonio Pass area in Riverside County. The terrain and geographical location determine the distinctive climate of the Basin, which is a coastal plain with connecting broad valleys and low hills.

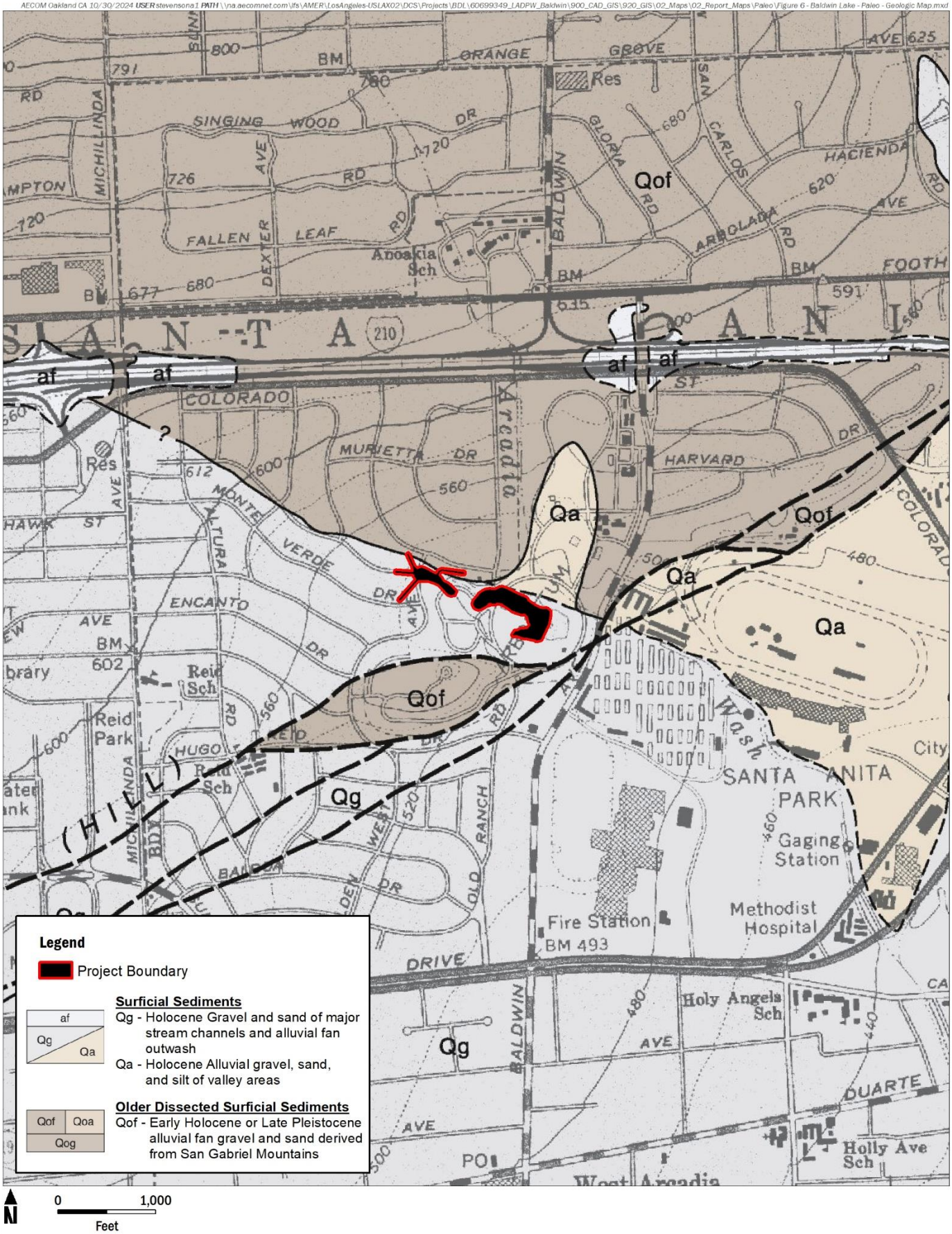
The climate in Arcadia is mild year-round, with warm, dry summers and mild winters. Temperatures generally range from 46°F to 90°F. Temperatures reach an average high of 89°F in August. December is the coldest month, with an average low of 46°F. Arcadia receives around 16 inches of annual rainfall and snowfall is extremely rare.

Flora and Fauna

The project area is developed mainly with maintained ornamental vegetation, concrete and decomposed granite walkways, paved asphalt and decomposed granite roads and asphalt paved parking lots. Vegetated areas are covered with maintained grassy fields and ornamental vegetation. The primary vegetation consists of nonnative species, including Mexican fan palm (*Washingtonia robusta*), juniper (*Juniperus* sp.), eucalyptus (*Eucalyptus* sp.), and pine (*Pinus* sp.).

The Arboretum is an official wildlife sanctuary, and its many trees, shrubs, and hedges are home to resident and migratory birds, small reptiles and mammals, and aquatic creatures. Peafowl, first introduced by Lucky Baldwin in the late 1800s, and a signature feature of the Baldwin Ranch, still roam freely around the Arboretum today.

AECOM Oakland CA 10/30/2024 USER stevensona1 PATH \\na.aecomnet.com\ifs\AMER\LosAngeles-USLAX02\DCS\Projects\BDL\60699349_LADPW_Baldwin\900_CAD_GIS\920_GIS\02_Maps\02_Report_Maps\Paleo\Figure 6 - Baldwin Lake - Paleo - Geologic Map.mxd



Los Angeles County Public Works
Baldwin Lake and Tule Pond Restoration Project
PROJECT: 60699349

FIGURE 6

Dibblee 1998 - Mount Wilson and Azusa Quadrangles Geologic Map

Cultural Setting

As a framework for discussing the types of cultural resources that may be encountered in the project vicinity, the following sections summarize the current understanding of major prehistoric and historic developments in Southern California. This is followed by a more focused discussion of the history of the project area itself.

Prehistoric Context

Southern California has a complicated assemblage of regional cultural chronologies that are defined by a variety of locally observed patterns. Three early regional syntheses serve as a foundation for discussing the general patterns of prehistory in this report, although recent archaeological work has served to enhance or revise some initial observations. Following the seminal work of William Wallace (1955), Claude Warren (1968), and Chester King (1981), the prehistory of Southern California typically is divided into Early, Middle, and Late periods, although names and precise dates vary. An initial Paleo-Indian period dating to the late Pleistocene and early Holocene also has been incorporated in this summary, to address the earliest documentation of occupation in the region.

In Southern California, the earliest evidence of human occupation comes from a handful of sites with early tools and some human remains that have been dated from 7,000 to more than 10,000 years old. These include the Baldwin Hills (“Early Man”) and Los Angeles Mesa (“Haverty Collection”) sites, where construction activities in the 1920s and 1930s uncovered human remains in deep alluvial deposits. The human remains were dated tentatively to between 10,000 and more than 20,000 years old (Moratto 1984:53). Recent research into the Los Angeles Mesa materials suggests that the early dates should be considered tentative, and that some studies suggest dates of no more than 5,000 years old (Sheilagh et al. 1990).

The Early Period (5000 to 3000 BC) in Southern California often is described as the Millingstone Horizon. In this period, milling implements such as manos and metates became increasingly common at habitation sites. Sites from this period typically contain large numbers of milling implements, simple core and cobble tools, flaked stone tools, distinctive cogged stone implements, and infrequent side-notched dart points (Fenenga 1953). The focus at inland sites appears to be on plant food processing and hunting. Along the coast, populations were invested in maritime food gathering strategies, including near-shore fishing as well as shellfish collection (Grenda 1997).

The Middle Period (3000 BC to AD 1000) was a long cultural period, also sometimes referred to as the Intermediate Horizon or the Hunting Period. The mortar and pestle were introduced during this period, suggesting an increased reliance on hard plant foods like acorns (Altschul and Grenda 2002). Acorns became an important food source for many southern and central California groups during this time (Warren 1968). Hunting and fishing continued to be significant subsistence activities, with gradual advances in technology. Bone, antler, and shell tools and ornaments became more common along the coast and inland. Many more projectile points were manufactured throughout this period, suggesting that hunting was a more significant activity at this time. Projectile points from the Middle Period typically are relatively large, dart-sized items (Erlandson 1991).

The Late Period (AD 1000 to 1782) is notable for a dramatic increase in the number of sites, and for an increase in regional specialization. In general, Late Period sites in Southern California include more bone tools, numerous types of *Olivella* sp. (dwarf olive) shell beads, circular fishhooks, and occasional pottery vessels (Miller 1991). Along the coast, groups became more focused on fish and shellfish, whereas inland groups became more involved in the processing and storage of key staple foods, such as acorns and piñon nuts. Between AD 1000 and 1250, small arrow-sized projectile points of the Desert side-notched and Cottonwood triangular series were adopted throughout Southern California (Altschul and Grenda 2002). Following European contact, glass trade beads and metal items appear in the archaeological record. On the mainland, burial practices shifted to cremation in the Los Angeles Basin and northern Orange County. At many coastal and most Channel Island sites, interment remained the common practice (Moratto 1984).

Some researchers suggest that the changes seen at the beginning of the Late Period reflect the movement of Shoshonean speakers from the eastern deserts into Southern California. However, other scholars have argued that the movement of desert-adapted Shoshonean speakers occurred as much as 2,000 years earlier (Bean and Smith 1978; Sutton 2009).

Ethnographic Context

The Gabrielino are reported to have been second only to their Chumash neighbors in terms of population size, regional influence, and degree of sedentism, occupying the southern Channel Islands and adjacent mainland areas of Los Angeles and Orange counties, and using the inland valleys of western San Bernardino County (Bean and Smith 1978). The Gabrielino language includes several dialects of a Cupan language from the Takic family, which is part of the Uto-Aztecan linguistic stock (Bean and Smith 1978).

The Gabrielino are estimated to have numbered around 5,000 in the pre-contact period (Kroeber 1925). Maps that were produced by early explorers indicate the existence of at least 40 Gabrielino villages, but as many as 100 may have existed prior to contact with Europeans (Bean and Smith 1978; McCawley 1996; Reid 1939 [1852]). Gabrielino villages are reported by early explorers to have been most abundant along the dominant rivers of the Los Angeles Basin, including the Los Angeles, San Gabriel, and Santa Ana rivers. Nine important villages were in the San Gabriel Valley, including *Ashuukshanga*, *Weniinga*, *Ahwiinga*, and *Pemookanga* in the prairie–foothill transition zone. Hugo Reid reported that the Gabrielino community of *Aleupkinga* was on the grounds of Rancho Santa Anita, which he owned. The Rancho Santa Anita land grant covered all of the present-day cities of Arcadia and Sierra Madre and portions of Monrovia and Pasadena. A Gabrielino informant, Jose Zalvidea, also reported that *Aleupkinga* was located at Santa Anita (McCawley 1996).

Traditionally, the Gabrielino community was organized into lineages that were made up of multiple families. These groups would maintain permanent territories that contained primary villages as well as multiple seasonal settlements and temporary use sites for ritual practice, plant gathering, or hunting. Settlement and subsistence strategies varied across environmental zones that extended from islands and the coast to mountainous regions and inland valleys. Generally, families would gather together at the primary village in winter months and disperse to smaller camps throughout the year, to take advantage of seasonally available plant and animal resources.

Most villages contained a *yovaar*, a religious structure with an open courtyard and ritual structures surrounded by brush fencing, near the center of the camp. The houses belonging to elite members of society were placed near the *yovaar*, with homes for other members of the village located farther out. Sweat huts were near streams or springs. Windbreaks, raised granaries, playing fields, and burial grounds also were common components of villages.

Material culture, such as tools, clothing, adornments, and other objects, were made with expert craftsmanship and artistry. Common objects found in the home could include numerous types of cooking, gathering, and storage baskets, steatite comals and cooking pots, portable milling equipment, wooden cooking implements, shell spoons, and numerous pottery vessels. Bone saws, bone and shell awls, shell fishhooks and needles, and stone knives and drills also were important implements in daily life. Wooden war clubs, self and sinew-backed bows, simple and compound arrows, and slings were used for hunting and in fighting (Bean and Smith 1978).

With establishment of the mission system in Southern California at the end of the eighteenth century, many traditional ways of life were disrupted through coerced participation in new economic and social structures. Gabrielino people and their neighbors engaged in active and passive forms of resistance to maintain connections to their families, language, and traditions (Castillo 2021).

Historic Context

Early European exploration of the coastal and inland trade routes of California began in the 1500s, but more than a century passed before Spain mounted a concerted colonization effort in California. The historical era in California begins with Spanish exploration and often is divided into three distinctive chronological and historical periods: the Spanish or Mission Period (1542 to 1821), the Mexican or Rancho Period (1821 to 1848), and the American Period (1848 to present-day). The following discussion presents a brief synopsis of early regional history and a review of history that is associated directly with the project area.

Spanish explorers made brief visits to Gabrielino territory in both 1542 and 1602, and on both occasions the two groups exchanged trade items (McCawley 1996). Sustained contact with Europeans did not begin until the onset of the Spanish Period, which began in 1769 when Gaspar de Portola and a small Spanish contingent began their exploratory journey along the California coast from San Diego to Monterey. Passing through the Los Angeles area, they reached the San Gabriel Valley on August 2 and traveled west through a pass between two hills, where they encountered the Los Angeles River and camped on its east bank near the present-day North Broadway Bridge. Father Juan Crespi's diaries indicate that on that day, they "entered a spacious valley, well grown with cottonwoods and alders, among which ran a beautiful river. This plain where the river runs is very extensive and…is the most suitable site for a large settlement" (The River Project 2001). He goes on to describe this "green, lush valley," its "very full flowing, wide river," the "riot of color" in the hills, and the abundance of native grapevines, wild roses, grizzly, antelope, quail and steelhead trout. Crespi observed that the soil was rich and "capable of supporting every kind of grain and fruit which may be planted." The river was named El Rio y Valle de Nuestra Senora la Reina de Los Angeles de la Porciuncula.

A string of 21 missions were established in the years that followed the Portola expedition, the fourth being the Mission San Gabriel Archangel, founded in 1771 near the present-day city of Montebello. In 1775, the mission was moved to higher ground, 5 miles to the northwest, following period flooding of the San Gabriel River (Lindsey and Schiesl 1976; McCawley 1996). By the early 1800s, the majority of the surviving Gabrielino population had entered the mission system. The Native American populations inhabiting Los Angeles County were under the jurisdiction of either Mission San Gabriel or Mission San Fernando.
Alta California became a state, with its capital at Monterey, when Mexico won its independence from Spain in 1821. The authority and profitability of the California missions gradually declined, culminating with their secularization in 1834. Former mission lands were divided quickly and granted to private citizens for use as agricultural and pastoral land (Reid 1977 [1851]). As the possibility of a takeover of California by the U.S. loomed large in the 1840s, the Mexican government increased the number of land grants to keep the land in Mexican hands, and more than 600 ranchos were created between 1833 and 1846.

California was captured by the U.S. during the Mexican–American War of 1846–1848. The discovery of gold in Northern California led to an enormous influx of American citizens in the 1850s and 1860s, and these settlers rapidly displaced the old rancho families.

The project area is on lands that formerly were grazing lands under the ownership of Mission San Gabriel and were inhabited primarily by indigenous cattle hands in service to the Mission. Following secularization during the Mexican Period, the lands of Santa Anita were coveted by many important Californios but were ultimately granted to Hugo Reid in 1845, following two prior claims in 1839 and 1843 that were never finalized. Reid, a well-educated Scotsman, moved to California in 1834 and opted to become a Mexican citizen. Don Perfecto Hugo Reid, as he was called, married a Gabrielino woman, Bartolomea Comicrabit, who went by the name Victoria (Wallace 1959). Victoria's family originally was from the Santa Monica area, but she was raised at Mission San Gabriel. Reid and his wife primarily occupied lands granted to Victoria before her marriage to Reid, and they left management of the Rancho to Victoria's son, Filipe, and his family. Reid ultimately sold the Rancho to Henry Dalton in 1847, to pay off debts (Wallace 1959).

After passing through several owners, the land was purchased by Elias Jackson "Lucky" Baldwin in 1875. Baldwin founded Arcadia in 1903 and served as its first mayor (Arcadia Historical Society 2022). In addition to the land that became the city of Arcadia, Lucky Baldwin's 1875 purchase included almost 9,000 acres of Rancho Santa Anita that ranchers were forced to sell to him following a severe drought. The Arboretum sits on land that once was part of Rancho Santa Anita and the home site of Baldwin's ranch.

Elias Jackson "Lucky" Baldwin

Elias Jackson Baldwin (1828–1909) was a successful investor and real estate speculator during the second half of the nineteenth century. He was born in Ohio and raised primarily in Indiana. He arrived in San Francisco in 1853 and began to invest in real estate. In 1862, he moved to Virginia City to invest in the Comstock silver mines and made a profit of more than $5 million. Baldwin earned the nickname "Lucky" because of his extraordinarily good fortune in his business dealings. Circa 1875, Baldwin moved to Southern California and continued to invest in real estate. He acquired more than 40,000 acres, including Rancho Santa Anita, Rancho Francisquito, Rancho La Cienega O Paso de La Tijera, Rancho La Merced, Rancho Portrero Grande, Rancho Portrero Chico, Rancho Portrero Felipe Lugo, and half of Rancho La Puente. However, Baldwin made Rancho Santa Anita his home and moved into and improved the existing adobe house near the sag pond. He dredged the pond to create a lake that served as a holding reservoir for the ranch's irrigation system; planted 1,200 acres of fruit and nut trees, another 300 acres in vineyards, and 500 acres of orange groves; built stables, barns, and a picturesque Queen Anne -style guest cottage; and imported peafowl from India and specimen trees from around the world to ornament his homesite. At its peak, the ranch had 33,000 sheep, 3,000 head of cattle, and 500 horses, 70 of whom were champion thoroughbreds (HRG 2014).

When Baldwin died in 1909, his adobe residence at Santa Anita and the Rancho were inherited by his daughters Clara and Anita Baldwin. Anita eventually leased out Clara's half-interest in the property and built a three-story, 50-room mansion that she called "Anoakia" at what is today the corner of W. Foothill Boulevard and N. Baldwin Avenue. She reorganized the Rancho into the Anoakia Stock and Breeding Farm, replacing orange groves and vineyards with pastures for grazing. In the 1920s and 1930s, having disbanded the farm, Anita sold parcels of the ranch lands for development, including 214 acres for construction of Santa Anita Park in 1934. In 1936, Anita sold the last 1,300 acres of the Rancho, except for her own 19-acre Anoakia estate, to Harry Chandler, a *Los Angeles Times* publisher and real estate developer. Most of the land was developed for residential tracts, with the historic core of the ranch left as a private park. In 1947, the State and Los Angeles County jointly purchased 111 acres around Baldwin Lake, including the Reid-Baldwin Adobe, Queen Anne Cottage, Boathouse, and Coach Barn that formed the historic center of the Baldwin ranch, for development of the Los Angeles State and County Arboretum (HRG 2014).

Los Angeles County Arboretum and Botanic Garden

The initial idea to create an arboretum came from Dr. Samuel Ayres, Jr., a dermatologist and member of the Southern California Horticultural Institute (founded in 1935). Ayre had been inspired by the landscape during a trip to Hawaii and wanted to "recreate the colorful landscape he had seen there but for the desert climate of Southern California" (HRG 2014:8). The onset of World War II delayed Ayres from pursuing this goal until 1944, when he presented the idea to the Horticultural Institute, and an Arboretum Committee was formed.

In 1947, after a number of sites had been reviewed and rejected, friends of George H. Spalding, the Arboretum's first superintendent, invited the Committee to a lot that they had purchased in Arcadia. Enticed by Lucky Baldwin's old Santa Anita ranch, Ayres contacted the Los Angeles County Supervisor, John Anson Ford, who presented the project as the "Kew Gardens of the West" to the Los Angeles County Board of Supervisors (HRG 2014:9). The Board felt that the project was too large to tackle alone and reached out to the State. Thus the State and County, purchased the first 111 acres that would become the Arboretum in 1947. By 1954, the property was expanded to 127 acres. The Arboretum originally was named the Los Angeles State and County Arboretum (LASCA), but this was changed in 1994 after the Department of Arboreta and Botanic Gardens was merged into the Los Angeles County DPR to reflect a 1988 legal quitclaim of the State's interest in the property (HRG 2014:9, footnote 18). The County leased the State's half-interest, and the California Arboretum Foundation subleased it from the County.

The California Arboretum Foundation's first Board of Trustees included Dr. Samuel Ayres, Jr., along with Dr. Frits W. Went, Manchester Boddy, Robert Casamajor, Ralph D. Cornell, Mrs. Richard (Susanna Bryant) Dakin, Howard Miller, Mrs. William (Mary Logan) Orcutt, William Rosecrans, and Mrs. William (Novellia) Shearer. In 1948, Dr. Frans Verdoorn was hired as the Arboretum's first Director, and he began corresponding with international scientific institutions and established the Arboretum's library. In 1948, the Foundation created a Historical Committee to restore the historic buildings on the site. In 1950, a Master Plan for the Arboretum was created, and development began, with the official opening occurring on January 9, 1955.

The Arboretum continued its original mission of research, propagation, and education until the passage of Proposition 13, the property tax release initiative that was approved by voters in 1978. Reduced tax revenue resulted in drastic County budget cutbacks, leading to the immediate loss of 19 Arboretum staff positions, the termination of the Youth Education programs, and the imposition of entrance and tram fees. Four ongoing research projects were eliminated in 1979, and in 1981, the entire Research Division was terminated, and the research laboratories were converted to office space. In 1994, the Arboretum's name was changed to "The Arboretum of Los Angeles County," to reflect a 1988 legal quitclaim of the State's interest in the property (HRG 2014).

Archival Research

As part of this cultural resources assessment, archival research was conducted to identify known cultural resources in the project area, provide context for evaluation of cultural resources that are 45 years old or older, and inform interpretations regarding the potential to encounter previously unidentified cultural resources in the course of ground-disturbing work associated with the project. Archival research included a records search at the South Central Coastal Information Center (SCCIC) and a review of the California Office of Historic Preservation's Historic Resources Inventory in the Built Environment Resource Directory (BERD), local cultural resource registers, and historic aerial photographs and maps. Supplemental research also was conducted to provide prehistoric and historic contexts for project area use.

Records Search

A records search was conducted at the SCCIC on July 25, 2023, to identify previously conducted cultural resource investigations and previously recorded cultural resources in the project area and a 0.25-mile radius. Archival research also included review of listings in the BERD, local historical resource inventories, the NRHP database, the CRHR, the California Historical Landmarks Register, and California State Points of Historical Interest.

Previous Cultural Resource Investigations

Eight previous cultural resources investigations that are documented at the SCCIC have been conducted within a 0.25-mile radius of the project area (Table 1). These investigations included a monitoring report, two survey reports, two archaeological investigations reports, a draft environmental impact report, an NHPA Section 106 review, and Arcadia's General Plan. Of the eight previous cultural resources investigations, three overlap the project area. However, although LA-03800 includes the Santa Anita Assembly Center (P-19-186564) in its discussion, it does so only briefly, as the report and archaeological investigations are focused primarily on the Manzanar National Historic Site more than 200 miles north of the Arboretum.

Table 1. Previous Investigations Conducted within Project Area and 0.25-mile Radius

Report Number	Date	Author	Title
LA-02899	1993	Weber, Carmen A. and Roger D. Mason	Cultural Resources Monitoring Report for the Santa Anita Fashion Park Mall Expansion
LA-03800*	1996	Burton, Jeffery F.	Three Farewells to Manzanar
LA-05936	2002	Sylvia, Barbara	Negative Archaeological Survey Report: Van Nuys Boulevard and Baldwin Avenue Undercrossings, and from Sunland Boulevard to Pennsylvania Avenue
LA-06859*	1996	Unknown	Arcadia General Plan
LA-07876	2006	Harper, Caprice D.	Phase I Archaeological Resources Survey Report for the Proposed Shops at Santa Anita Park Specific Plan Project, City of Arcadia, Los Angeles County, California
LA-09056	1957	Wallace, William J., Roger J. Desautels, and George Kritman	The House of the Scotch Paisano; Archaeological Investigations at the Hugo Reid Adobe, Arcadia, California
LA-12497*	2010	Maxon, Pat	Draft Program Environmental Impact Report, City of Arcadia, 2010 General Plan Update
LA-12525	2003	Poka, Ervin	NHPA Section 106 Review; Metro Gold Line Phase II Extension Project

Note:
* Study conducted in the project area.

Previously Recorded Cultural Resources

The SCCIC records search identified 42 previously recorded cultural resources, mapped within a 0.25-mile radius of the project area. Of the 42 previously recorded cultural resources, six were identified as eligible for the NRHP and CRHR. Three cultural resources are in the project area and are contributors to the Arboretum (Table 2).

Table 2. Previously Recorded Resources within Project Area and 0.25-mile Radius

Primary Number (P-19-)	Resource Type	Historic Name/Description	Time Period	NRHP/CRHR Status Code
003682	Site	Multicomponent site with four temporal components: (1) Milling Stone Horizon groundstone scatter representing a floral resource gathering and processing area; (2) sparse lithic scatter possibly associated with the Late Prehistoric occupation of the Akuuronga village site; (3) Rancheria fire hearth features; (4) refuse scatter from a residence constructed in 1908.	Prehistoric Milling Stone Horizon (6000–3000 BC), Late Prehistoric (AD 500–1769), circa 1870s Rancheria, and early twentieth century.	Site was destroyed during housing development
179332	Building/ Site	ANOAKIA/Constructed in 1912 for Anita Baldwin McClaughrey; purchased for Flintridge Girl's School in 1941; Anoakia School in 1950s.	1912-present	NRHP-eligible (3S)
179333*	Building	Queen Anne Cottage (California Historical Landmark #367) and Coach Barn	1881, 1885	NRHP-eligible
179334*	Building	Hugo Reid Adobe, State Historical Landmark #368	Initial construction 1839-1841	Appears eligible for NRHP (4)
179335*	Building	Queen Anne Cottage; Historical Point of Interest; State Historical Landmark 367	Initial construction 1881	NRHP-eligible (3S)
186564	Site	Temporary Detention Camp for Japanese Americans – Santa Anita Detention Camp; Santa Anita Park/Assembly Center; State Historical Landmark #934	April 1942	NRHP-eligible (2S); listed in CRHR
186582	Building	Santa Anita Depot; California Point of Historical Interest	1880s-1940	Not evaluated
189411	Structure	AT&SF railroad bridge over Baldwin Avenue	Historic	Not eligible for NRHP, CRHR, or local listing (6Z) pending SHPO concurrence
189878	District	Santa Anita Park	1934-1953	NRHP-eligible
190344	Building	475 Cambridge Drive	1950	Not evaluated
190373	Building	485 Harvard Drive	1953	Not evaluated
190390	Building	901 Monte Verde Drive	1957	Not evaluated
190391	Building	423 North Old Ranch Road	1951	Not evaluated
190397	Building	920 Paloma Drive	1949	Not evaluated
190398	Building	1000 Panorama Drive; Tract 13312, Lot 60	1949	Not evaluated
190414	Building	325 South Old Ranch Road	1947	Not evaluated
190433	Building	868 San Simeon Road	1940	Not evaluated
190434	Building	820 San Simeon Road	1948	Not evaluated
190450	Building	410 Vaquero Road	1938	Ineligible for local listing (6L); not evaluated for NRHC or CRHR
190451	Building	320 Vaquero Road	1938	Not evaluated
190452	Building	950 Volante Drive	1947	Not evaluated

Primary Number (P-19-)	Resource Type	Historic Name/Description	Time Period	NRHP/CRHR Status Code
190822	Building	619 W. Foothill Blvd	1952-1960	Not eligible for NRHP, CRHR, or local listing (6Z)
191963	Building	8 South Old Ranch Road	1951	Not eligible for NRHP, CRHR, or local listing (6Z)
191964	Building	11 West Camino Real Avenue	1962	Not evaluated
191965	Building	18 South Old Ranch Road	1950	Not evaluated
192026	Building	331 Vaquero Road	1948	Not evaluated
192041	Building	416 North Old Ranch Road	1941	Not evaluated
192046	Building	438 Oxford Drive	1953	Not evaluated
192048	Building	441 Cambridge Drive	1952	Not evaluated
192050	Building	474 Oxford Drive	1951	Not evaluated
192051	Building	481 Oxford Drive	1950	Not evaluated
192059	Building	520 Vaquero Road	1940	Not evaluated
192086	Building	811 Kingsley Drive	1947	Not evaluated
192087	Building	819 Murietta Drive	1948	Not evaluated
192088	Building	827 Murietta Drive	1941	Ineligible for local listing (6L) and CRHR
192089	Building	836 Monte Verde Drive	1949	Not evaluated
192091	Building	858 Hugo Reid Drive	1950	Not evaluated
192100	Building	928 Volante Drive	1948	Not evaluated
192114	Building	1018 Encanto Drive	1949	Not evaluated
192144	Building	1310 South 10th Street	1924 and 1931	Not evaluated
192330	Building	1034 Panorama Drive	1949	Not eligible for NRHP, CRHR, or local listing (6Z)
192507	Building	959 Hugo Reid Drive	1947	Found not eligible for NRHP, CRHR, or local listing (6Z); demolished

Notes:
CRHR = California Register of Historical Resources; NRHP = National Register of Historic Places; SHPO = State Historic Preservation Officer
* Indicates resource is located within the project area.

P-19-17934

P-19-17934 (also known as the Hugo Reid Adobe, or the Reid-Baldwin Adobe) is on the southeastern edge of Baldwin Lake, approximately 50 feet from the waterline. Previous investigations were conducted at the Adobe during a rehabilitation led by William J. Wallace (Wallace and Wallace 1958), a ground penetrating radar study (Damiata et al. 2012), and subsequent archaeological monitoring (Ferland and Vargas 2013) by SWCA Environmental Consultants, and a restoration project by Duke Cultural Resources Management, LLC. (Hearth, Sawyer, and Duke 2022). These investigations produced assemblages consisting of prehistoric Native American artifacts and historic Native American and Euro-American artifacts (refer to the reports for further details).

Excavations conducted by Wallace (Wallace and Wallace 1958) uncovered Native American artifacts, both within the building and below the floor. The sub-floor artifacts provide evidence of an earlier Native American occupation, likely associated with the Gabrieleno village site Aleupkigna (or “place of many waters”), which Hugo Reid listed as being on Rancho Santa Anita (Wallace and Wallace 1958). Native American artifacts also were recovered from exploratory trenches outside the Adobe.

Supplemental Research

To supplement research completed at the SCCIC investigators also reviewed data provided by PW and DPR archival holdings. In addition, the following publicly available sources were reviewed to identify cultural resources in or near the project area:

- Los Angeles Public Library
- Historic newspapers
- University of California, Santa Barbara Online Historic Aerials (FrameFinder).
- Online Archive of California
- Nationwide Environmental Title Research (NETR) historic aerial photographs
- Calisphere
- Newspapers.com
- Built Environment Resource Directory (BERD)

The *Arboretum Album: A Pictorial History of the Arboretum of Los Angeles County* (Snider 1997) describes the discovery in 1991 of a cogged stone, dated by UCLA to be 2,000 to 4,000 years old. The cogged stone was found by an Arboretum grounds maintenance staff worker while operating a forklift along the western edge of the lake. Although the exact location is not provided, the presence of this artifact indicates that the potential exists for inadvertent discoveries along and within the lake during ground-disturbing project activities.

Paleontological Records Search and Literature Review

A paleontological records search at the Natural History Museum of Los Angeles County (NHMLA) was requested on July 25, 2023. A response was received from Alyssa Bell, Ph.D., on July 30, 2023. A thorough search of the NHMLA paleontology collection records for the locality and specimen data did not identify any fossil localities directly within the project area; however, five fossil localities were identified nearby from the same sedimentary deposits that occur in the project area, either at the surface or at depth. These localities are provided in Appendix B.

According to the report, the closest NHMLA fossil locality consists of a mammoth fossil, recovered at an unknown depth in Pasadena. The geology at that site could be comparable to the project site geology. Of the remaining four localities, one is a group of localities in marine sediments of the Puente Hills Landfill, and another group of localities is in marine sediments near San Dimas. Neither of these is pertinent to the project area. The two remaining localities are in Monterey Park and Bell Gardens, far removed geographically and geologically from the project area.

The two compendia of Pleistocene vertebrate fossils of California, published by Jefferson (Jefferson 1991a, 1991b) lack any reference to localities near the project area. No unpublished technical reports were located concerning mitigation efforts near the project area.

Native American Contact Program

As part of this assessment, AECOM supported a Native American contact program on behalf of PW to solicit information regarding TCRs or other cultural resources that may be affected by the project. Information concerning sacred lands in the project vicinity was solicited from the NAHC. An email was sent to the NAHC on June 15, 2023, requesting a search of its Sacred Lands File (SLF), to identify TCRs in the project area. A response was received on July 17, 2023, indicating that the results of the SLF search were positive. The NAHC identified 11 Native American representatives who are culturally affiliated with the project area from seven tribes: 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, Gabrieliño-Tongva Tribe, Santa Rosa Band of Cahuilla Indians, and Soboba Band of Luiseño Indians. On September 7, 2023, PW, as lead agency, sent Project notification letters with invitations to consult on the project per AB 52 by email with delivery confirmation to representatives of the following Tribes:

- Chumash Band of Mission Indians
- Fernandeño Tataviam Band of Mission Indians
- Gabrieleño Band of Mission Indians – Kizh Nation
- Gabrielino-Tongva Indians of California
- Gabrielino/Tongva Nation
- Gabrieliño-Tongva Tribe
- Gabrieleno-Tongva San Gabriel Band of Mission Indians
- San Manuel Band of Mission Indians
- Santa Rosa Band of Cahuilla Indians
- Soboba Band of Luiseño
- Tejon Indian Tribe

PW received written responses from Chairman Andrew Salas of the Gabrieleño Band of Mission Indians—Kizh Nation; Jamie Nord of the San Manuel Band of Mission Indians; Sarah Brunzell of the Fernandeño Tataviam Band of Mission Indians; and Christina Conley of the Gabrielino-Tongva Indians of California. The San Manuel Band of Mission Indians declined consultation in an email dated September 18, 2023, and the Fernandeño Tataviam Band of Mission Indians declined consultation in an email dated September 19, 2023. Consultation conclusion letters were sent to the Tribes on October 28, 2024. A summary of the Native American contact program is provided in Appendix C.

Field Survey Methodology and Results

Built Survey Methodology

On August 17, 2023, AECOM architectural historian Monica Wilson performed an intensive-level survey of the project area. The survey covered all accessible portions of the project area, including the areas around Baldwin Lake and Tule Pond. The purpose of the survey was to build on the 2014 HRG cultural landscape report and treatment plan, to identify cultural resources in the project area that may be affected by project-related activities, to record cultural resources that are at least 45 years old, and to evaluate any discovered resources for historical significance under NRHP and CRHR criteria.

Built Survey Results

Four previously recorded built environment resources—the Queen Anne Cottage, the Coach Barn, the Reid-Baldwin Adobe, and the Los Angeles County Arboretum and Botanic Garden Historic District (LACABGHD)—were investigated during the August 17, 2023 survey. The survey did not identify any new built environment resources.

Previously Recorded Cultural Resources

The four previously recorded cultural resources in the project area are discussed next.

Queen Anne Cottage

That Queen Anne Cottage was dedicated as California State Historical Landmark #367 in 1954. In 1977, Pamela Lee Grey of the Natural History Museum surveyed and evaluated the Queen Anne Cottage. Grey recommended the building as individually eligible for the NRHP.

Queen Anne Cottage and Coach Barn

Sandra L. Snider of the Los Angeles State and County Arboretum prepared an NRHP nomination for the Queen Anne Cottage and Coach Barn in 1979 (Snider 1979). The Queen Anne Cottage and Coach Barn were listed on the NRHP under Criterion B, for association with Lucky Baldwin and Criterion C for architecture.

Reid-Baldwin Adobe

The Reid-Baldwin Adobe was dedicated as California State Historical Landmark #368 in 1961. Pamela Lee Grey of the Natural History Museum surveyed and evaluated the Reid-Baldwin Adobe in 1977. Grey concluded that the building needed to be re-evaluated for inclusion in the NRHP.

Los Angeles County Arboretum and Botanic Garden Historic District

Originally recorded in 2014 by Historic Resources Group, LLC (HRG), the Arboretum includes 60 contributing resources that consist of landscape architecture, buildings, and structures of various architectural styles, such as Queen Anne, Modern, and Spanish Colonial Revival. Contributing features located directly within and adjacent to the project area include the Reid-Baldwin Adobe, the Queen Anne Cottage, the Baldwin Boathouse, Baldwin Lake, the Baldwin Fountain, the Cycad Collection, Historic Trees, the Youth Education Building, Tule Pond, and Turtle Pond. No new features associated with the Arboretum were observed, and the resource did not require additional evaluation. A DPR-523 series form update for the LACABGHD was prepared and is provided in Appendix D. A copy of the original district evaluation (completed in 2014 by HRG) also is provided in Appendix D. Impacts on the LACABGHD are anticipated because of project activities, which would include rehabilitation of the concrete and cobblestone retaining walls around the shoreline of the lake and pond.

Findings

Four previously recorded historical resources—the Queen Anne Cottage, the Coach Barn, the Reid-Baldwin Adobe, and the LACABGHD—have been identified in the project area. In 2014, HRG recommended that the LACABGHD was eligible for listing in the NRHP as a historic district. The district includes 60 contributing resources and eight distinct zones; contributing resources include the Queen Anne Cottage, the Coach Barn, and the Reid-Baldwin Adobe. The zones include the Entry Complex, the North Complex, Africa/Australia, the Lawn Area, the Historic Circle, the West Acres, the Tallac Knoll, and the Baldwin Buffer. The project area is in the Historic Circle and the West Acres (Photograph 1 through Photograph 6).



Photograph 1. Baldwin Lake (HC-L1), camera facing southeast (08/17/2023)



Photograph 2. Queen Anne Cottage (HC-B3), west elevation, camera facing northeast (08/17/2023)



Photograph 3. Coach Barn (HC-B2), east elevation, camera facing northwest (08/17/2023)



Photograph 4. Reid-Baldwin Adobe (HC-B1), north and east elevations, camera facing southwest (08/17/2023)



Photograph 5. Tule Pond (WA-L1), pond drained at time of survey, camera facing north (08/17/2023)



Photograph 6. Rock wall drain at Tule Pond (WA-L1), pond drained, camera facing north (08/17/2023)

NRHP/CRHR Evaluation for Built Environment Resources

The significance of the LACABGHD was determined by applying the procedures and criteria for NRHP and CRHR eligibility. Based on site investigations and historic research, the LACABGHD and its contributing resources continue to meet eligibility for listing in the NRHP and the CRHR (refer to Appendix D for a more detailed evaluation, recorded on a DPR-523 update form).

Three of the LACABGHD's contributing resources were evaluated previously and listed in the NRHP as California State Historical Landmarks. The Queen Anne Cottage was dedicated as California State Historical Landmark #367 in 1954. In 1961, the Hugo Reid Adobe was dedicated as California State Historical Landmark #368. Pamela Lee Grey of the Natural History Museum surveyed and evaluated the Queen Anne Cottage and Hugo Reid Adobe in 1977 on Historic Resource Inventory forms. Grey concluded that the Queen Anne Cottage appeared individually eligible for inclusion in the NRHP. Grey concluded that

the Hugo Reid Adobe needed to be re-evaluated for eligibility in the NRHP. Sandra L. Snider of the Los Angeles State and County Arboretum prepared an NRHP nomination for the Queen Anne Cottage and Coach Barn in 1979. The Queen Anne Cottage and Coach Barn were listed on the NRHP under Criterion B for association with Lucky Baldwin and Criterion C for architecture.

In 2014, HRG surveyed and evaluated the LACABGHD as part of the *Cultural Landscape Report and Treatment Plan for the Los Angeles County Arboretum and Botanic Garden*. HRG concluded that the property was eligible for the NRHP and CRHR under Criteria 1/A, 2/B, and C/3. The district is significant for its associations with the Rancho Santa Anita and development of the San Gabriel Valley; its association with Lucky Baldwin; and its large-scale, institutional, post-World War II landscape architecture and design in Southern California. The property retains the level of integrity of location, design, setting, materials, workmanship, feeling, and association that it had at the time of last recordation. After review of the previous recordation and current field checks and research, the current study concludes that the property appears to meet the criteria for listing in the NRHP and CRHR, and the property is considered a historical resource for CEQA.

The LACABGHD is significant under NRHP/CRHR Criteria 1/A, 2/B, and C/3 for association with Rancho Santa Anita, San Gabriel Valley development, Lucky Baldwin, and post-World War II landscape and institutional architecture. The district's boundaries include buildings and landscape features roughly bounded to the north by West Colorado Boulevard; to the east by North Baldwin Avenue; to the south by Hugo Reid Drive and properties fronting on South Old Ranch Road and Hugo Reid Drive; to the southwest by properties fronting on South Golden West Avenue; and to the west by North Golden West Avenue, Vaquero Road, and North Old Ranch Road. Within these boundaries are 60 contributing resources that—through their physical design, association, and function—illustrate themes of residential development, suburbanization, and post-World War II landscape architecture and design. The periods of significance are 1875 to 1936 and 1947 to 1978. The first period of significance represents the property's association with influential investor and real estate speculator Lucky Baldwin, who purchased the Rancho in 1875 and lived there until his death in 1909. Baldwin's property was inherited by his daughter Anita, who sold the last remaining parcel of the Rancho—a portion of which currently is occupied by the Arboretum—in 1936. The second period of significance is 1947 to 1978 and represents the property's development as the Los Angeles State and County Arboretum (now the Los Angeles County Arboretum and Botanic Garden), until budget cutbacks in 1978 altered the facility's original mission of research, education, and propagation.

Evaluation Summary

The LACABGHD and its three contributing resources continue to meet the criteria for listing in the NRHP and CRHR. The properties retain sufficient integrity to their original construction and meet Criteria 1/A, 2/B, and C/3 of the NRHP and CRHR. Therefore, the Queen Anne Cottage, the Coach Barn, the Reid-Baldwin Adobe, and the LACABGHD are historical resources for CEQA.

Archaeological Survey Methodology

An intensive-level archaeological survey of the project area was completed along with the Built Environment survey on August 17, 2023, conducted by AECOM archaeologist Samantha Lorenz, M.A., RPA, who meets the SOI Professional Qualification Standards in Archaeology. The survey covered all accessible portions surrounding the lake and pond. A supplemental archaeological survey was completed on June 3, 2024, by AECOM archaeologist Alexandra Walton, M.A., RPA, who meets the SOI Professional Qualification Standards in Archaeology. The supplemental survey covered project components that were added after the original survey, including a staging area adjacent to the Santa Anita Train Depot, the Arboretum parking lot, and construction haul routes from the staging area to Baldwin Lake and Tule Pond. During the survey, all accessible portions surrounding the lake and pond were resurveyed. The purpose of these surveys was to record archaeological and historical resources and evaluate any discovered resources for significance under CRHR criteria.

Cultural resources can consist of archaeological resources, TCRs, or built environment resources. Archaeological resources represent evidence of past human behavior and include portable artifacts, such as stone tools, glass bottles, and tin cans; non-portable "features," such as cooking hearths, foundations, and privies; and residues, such as food remains and charcoal. Archaeological remains can be any age, from recent Historic Period materials to Prehistoric deposits that are thousands of years old. An

archaeological resource can be determined to be a TCR or a historic resource following State regulations. TCRs are defined as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to California Native American tribes that are listed in or eligible for listing in the CRHR, listed in local historic registers, or determined by a lead agency to be significant resources. Built environment resources include the human-made features that make up the recognizable architectural built environment. This typically includes extant aboveground buildings and structures that date from the earliest territorial settlements until the present day.

Archaeological Survey Results

The initial survey was completed on August 17, 2023, by Ms. Lorenz. Surface visibility around the lake varied from 0 to 40 percent on grass lawns (Photograph 7) and in densely vegetated areas (Photograph 8) to 90 to 100 percent on maintained trails and paths (Photographs 9 and 10). At the time of the survey, the pond was seasonally dry. Surface visibility was generally below 40 percent because a layer of leaf litter filled the depression (Photograph 11), and dense vegetation grew along the lake's littoral zone (Photograph 12). No archaeological resources were observed.

The supplemental survey was completed on June 3, 2024, by Ms. Walton. Surface visibility in the construction staging area varied between 0 to 30 percent in densely vegetated areas and 20 to 60 percent on grassy areas (Photograph 3). Surface visibility was 90 to 100 percent on the maintained trails and roads that would be used as the construction haul routes. Around the lake and the pond, visibility was consistent with what was reported during the August 17, 2023, survey (see above).

All previously recorded cultural resources were historic resources and are discussed under Built Environment in the previous section. However, the Reid-Baldwin Adobe (P-19-179334; also known as the Hugo Reid Adobe) has an archaeological component and was investigated during both the August 17, 2023, and June 3, 2024, archaeological surveys for evidence of cultural material. No new archaeological resources were observed at the Adobe or any other location in the project area.

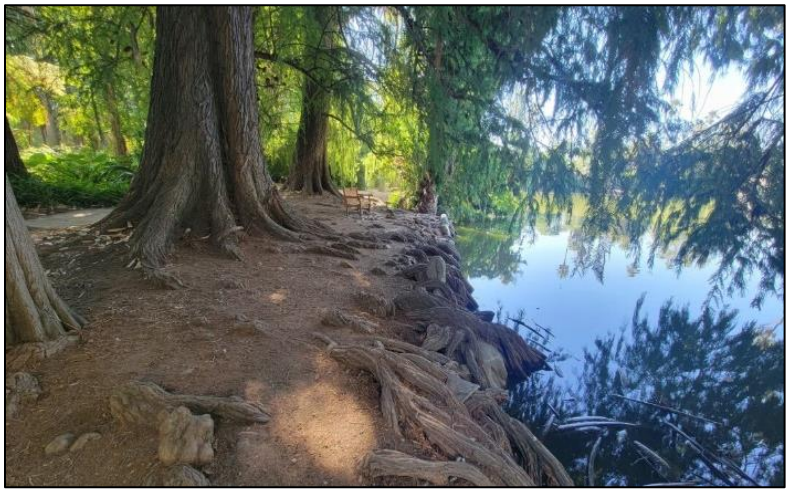
A historic train bumping post was identified during the June 3, 2024, survey, along the fence line in the construction staging area, approximately 53 meters west of the Santa Anita Train Depot. The bumping post contains embossing on one side that reads "PAT NO1815917," "OTHER PATS PEND 13124, DURABLE." The embossing on the opposite side reads "THE MECHANICAL MFG CO. CHICAGO MODEL-D," "DURABLE." The Mechanical Manufacturing Company submitted the patent for this bumping post on October 8,1929, and the object appears to be of Historic age. The item is thought to be associated with the Santa Anita Depot, which originally was about 0.25 mile north of the Arboretum at Old Ranch Road and Colorado Boulevard. The abandoned train station was relocated to the Arboretum in 1970, where it was restored to its original 1890 construction. As the bumping post is not in situ, it was not documented as a significant archaeological resource.



Photograph 7. View of the lawn and landscape along Baldwin Lake



Photograph 8. View of Baldwin Lake showing the dense vegetation



Photograph 9. View of the trail along Baldwin Lake



Photograph 10. View of the earthen perimeter path



Photograph 11. View of the drained Tule Pond



Photograph 12. View of overgrown vegetation at Tule Pond



Photograph 13. View of the overgrown staging area

Recommendations

Built Environment Recommendations

The Queen Anne Cottage, the Coach Barn, Reid-Baldwin Adobe, and LACABGHD are historical resources for CEQA. The following discussion assesses the potential improvements to determine whether a significant impact would occur to any of the historical resources.

To reduce any impacts to a less-than-significant level, this analysis recommends that any proposed alterations that are planned for any historical resource should be consistent with the SOI Standards for the Treatment of Historic Properties, particularly the SOI Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (Weeks and Grimmer 1995). Per the National Park Service (NPS), rehabilitation is defined as the process of returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property that are significant to its historic, architectural, and cultural values. Rehabilitation assumes that at least some repair or alteration of the historic building will be needed to provide for an efficient contemporary use; however, these repairs and alterations must not damage or destroy materials, features, or finishes that are important in defining the building's historic character. The Standards for Rehabilitation include the following, taking into consideration economic and technical feasibility of the repairs to the historic resource:

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archaeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
10. New additions and adjacent or related new construction shall be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Maintenance Recommendations

Project activities would include rehabilitation of the historical cobblestone retaining walls that line portions of the shoreline of the lake and pond. The cobblestone retaining walls are unreinforced, with a combination of local cobblestones, basalt and granite boulders, and slate and fired red brick; some areas include concrete drains with unreinforced board formed concrete with cast iron grilles. Project activities would include construction of new retaining walls, with a cobblestone façade around the perimeter of the lake and pond. The existing, deteriorating cobblestone retaining walls would be removed, incorporating the leftover cobblestones into the proposed retaining walls to retain their historic appearance. The following information presents general maintenance recommendations for the cobblestone retaining walls, based on materials and common issues that may arise over time. Included in this section are references to the NPS Technical Preservation Services (TPS) Preservation Briefs that outline repair, rehabilitation, and maintenance methods related to the structure. The NPS TPS Preservation Briefs that would apply to the project improvements include:

- Preservation Brief No. 1, Assessing Cleaning and Water-Repellent Treatments for Historic Masonry Buildings (NPS 2000)
- Preservation Brief No. 6, Dangers of Abrasive Cleaning to Historic Buildings (NPS 1979)
- Preservation Brief No. 15, Preservation of Historic Concrete (NPS 2007)
- Preservation Brief No. 16, The Use of Substitute Materials on Historic Building Exteriors (NPS 1988)

Refer to the References section of this document for links to these NPS TPS preservation briefs.

Cleaning Methods of Historic Materials

Inappropriate cleaning and coating treatments are a significant cause of damage to historical masonry structures, such as the lake and pond cobblestone retaining walls. Any cleaning processes should be carried out under the guidance and supervision of an architectural conservator to avoid irrevocable damage to the historical resource; this is with the understanding that the proposed project intends to remove historic mortar, cement, and concrete used in the cobblestone perimeter wall of Baldwin Lake in order to rehabilitate the cobblestone and granite boulders. Furthermore, the retaining walls' historical appearance must be considered before work, as well as a determination of the level of cleanliness to be achieved. Before developing a cleaning program, an understanding the building materials would be important, which should include a combination of local cobblestones, granite boulders, and unreinforced board-formed concrete. Before choosing a cleaning method, different cleaners should be tested, and their results should be evaluated. Some chemicals and acidic cleaners may have an adverse effect on construction materials. Other chemicals also may cause etching or the dissolution of the cobblestones, basalt and granite boulders, and slate and fired red brick. Recommended cleaning methods for the retaining walls would include water and chemical methods. Water methods would soften dirt and soiling material and would rinse the deposits from the surface. Chemical cleaners would react with dirt, soiling material, or paint to affect their removal, followed by the cleaning effluent being rinsed off the surface with water.

Abrasive cleaning generally is not an acceptable preservation treatment for historical structures. Abrasive cleaning methods often result in significant damage to historical building materials. Alternative, less harsh means of cleaning the retaining walls are available that would not physically and aesthetically destroy the exterior of the resource. These alternative methods would include low-pressure water wash, scrubbing with natural bristles, steam cleaning, or chemical cleaning. Therefore, abrasive cleaning would not be a recommended method for the cobblestone retaining walls.

Overall, objectives for using cleaning methods should improve the appearance of the resource by removing unattractive dirt or soiling materials; retard deterioration by removing soiling materials that may be damaging the masonry; and/or provide a clean surface to accurately match repointing mortars or patching compounds.

Repair and Replacement of Historic Materials and Concrete

Current damage present at the lake and pond retaining walls includes deteriorating sections and structural integrity issues. Before performing any preservation work on the walls, which involves the dismantling and rebuilding of the cobblestone retaining wall, a condition assessment is recommended with a review of all

available documents related to the original construction and previous repairs to the resource. The cause of deterioration would be important to determine, and time during the planning phase should be allowed to analyze the historical materials, develop mixes, and prepare adequate aging of mock-ups that match the original materials.

Overall, repair measures should be selected that retain as much of the original material as possible and visually match the existing materials as closely as possible. In addition, they should match existing materials in strength, permeability, and other characteristics important in the mix design of the stone, brick, and concrete. For any concrete repair project, the process of investigation, laboratory analysis, trial samples, mock-ups, and full-scale repairs should allow ongoing refinement of the repair work, as well as implementation of quality control measures. The trial repair process should provide an opportunity for the owner, architect, engineer, and contractor to evaluate the concrete mix design and the installation and finishing techniques for the repairs from both technical and aesthetic standpoints.

Furthermore, the maintenance and repair of historical concrete should involve regular inspection of the resource to establish baseline conditions and identification of needed repairs. The maintenance program should involve monitoring protection systems, including sealant joints, expansion joints, and protective coatings; reviewing existing conditions to identify physical distress, such as cracking and de-laminations; documenting observed conditions; and developing and implementing a cyclical repair program.

Consideration of Substitute Materials

Details in the proposed cobblestone retaining wall rehabilitation should include construction of a concrete retaining wall with a cobblestone façade around the perimeter of the lake and pond, in compliance with a historical preservation consultant to restore the lake and pond's historical appearances, as well as to minimize shoreline erosion. The existing, deteriorating walls should be removed with the existing cobblestones incorporated into the proposed retaining walls. Therefore, any substitute materials should mimic and imitate historical materials if the appearance and proprieties of the historical resource could be closely matched, in addition to preventing further damage to the historical fabric. All preservation options should be explored before making the decision to use substitute materials.

Substitute material should match the details and craftsmanship of the historical material. This should include color, surface, texture, surface reflectivity, and finish. To get the closest match between the substitute and historical material, a portion of the resource where the substitute material is intended to be installed should be cleaned. Fabricators also should provide a sufficient number of samples of the substitute material on site. This would allow on-site comparison of color, texture, detailing, and other critical qualities. If subtle variations exist between the historical and substitute material, such as color or texture, the substitute materials should be varied so that they are not conspicuous by their uniformity. This practice would not apply to the concrete replacement because the entirety of the material would be replaced.

Although historical and substitute materials may match visually, their chemical compositions may differ, such as the presence of acids, alkaline, salts, or metals. Chemical composition of the substitute material should be evaluated to ensure its compatibility with the historical material. Therefore, special care should be taken to install and anchor the substitute material to the historical material. Before installation and attachment of substitute materials, deteriorated underlying material should be cleaned out during the surface preparation phase. Furthermore, some high tech materials, such as epoxies and polymers, are much stronger than historical materials and could cause issues unless the new materials are modified to match the expansion and contraction properties of the historical material. Because it would be nearly impossible for substitute materials to perfectly match historical materials, the system should be designed so that if material failures occur, they occur within the substitute rather than the historical material.

Although a substitute material may appear appropriate and functional at the time of installation, its appearance and performance could deteriorate over time. Therefore, appearance and long-term performance of substitute materials should be evaluated. The stability of color and texture; compressive or tensile strengths; acceptable range of thermal coefficients; and durability of coatings and finishes should be included in contract documents. Substitute materials identified as part of the historical record should guarantee proper care and maintenance throughout the life of the historical resource. Selection of qualified fabricators and installers would be critical, to avoid those not familiar with substitute materials and their

functions in the local environment. This should allow future maintenance to be executed by those familiar with the process.

Design Recommendations

The following discussion presents general design recommendations for the lake and pond cobblestone retaining walls, based on the proposed work. Rehabilitation of the retaining walls would include construction of a new retaining wall with a cobblestone façade around the perimeter of the lake and pond. The existing, deteriorating cobblestone retaining walls would be removed, with the remaining cobblestones incorporated in the proposed retaining walls to retain their historical appearance.

Design Recommendation 1: Cultural Resources Training. Prior to construction, all personnel associated with the Project should receive cultural resource awareness training. Training shall be conducted by an individual(s) that meet Secretary of Interior (SOI) Professional Qualification Standards in architectural history and archaeology. Training would cover work practices for the proper treatment of cultural resources and tribal cultural resources (TCRs) and ensuring compliance with applicable environmental laws and regulations. This training will include how to maintain the confidentiality of resources at in-situ locations; how to identify cultural resources/historic materials (e.g., the types of resources to look for), include recognizing possible buried resources; the significance of the resources that need to be protected during Project implementation; and treatment of historic materials or upon discovery of archaeological materials, including TRCs and Native American human remains. Native American representatives shall be afforded the opportunity to participate in the cultural resource training to provide Project personnel with tribal perspectives on working in areas sensitive for TCRs.

Design Recommendation 2: Reuse of Historical Materials. When conducting work on the boulder retaining walls, retain as much of the original boulders as possible, including pattern of how stones are laid out.

When conducting work on the walls, activities should retain as much of the original material as possible. When reuse of material is not acceptable for purposes of maintaining structural integrity, new materials should closely match the existing materials to mimic historic characteristics. If subtle variations exist between the historic and new materials, such as color or texture, the substitute materials should be varied so they are not conspicuous by their uniformity. This practice does not apply to the concrete replacement because the entirety of the material is intended to be replaced.

Design Recommendation 3: Substitute Materials. Any substitute materials proposed for use in the new retaining wall must be harmonious with historic materials. Substitute material should match the details and craftsmanship of the historic materials. However, it is important to note that chemical compositions may differ between historic and substitute materials. Therefore, chemical composition of the substitute material should be evaluated to ensure compatibility with the historic material, and special care should be taken to install and anchor the substitute material to the historic material. If subtle variations exist between the historic and substitute material, such as color or texture, the substitute materials should be varied so they are not conspicuous by their uniformity. The substitute materials, including types of compounds and boulders, used to reconstruct the walls shall be recorded for future reference in order to guarantee proper care and maintenance through the life of the historic resource.

Design Recommendation 4: Cleaning Methods. Inappropriate cleaning and coating treatments are a significant cause of damage to historic masonry structures such as the Lake and Pond cobblestone retaining walls. Any cleaning processes should be carried out under the guidance and supervision of an architectural conservator to avoid irrevocable damage to the historic resource. Additionally, the retaining walls' historic appearance must be considered before work, as well as a determination of the level of cleanliness to be achieved. Prior to developing a cleaning program, it is important to understand the building materials, which include a combination of local cobblestones, granite boulders, and unreinforced board formed concrete. Before choosing a cleaning method, different cleaners should be tested and their results evaluated. Some chemicals and acidic cleaners may have an adverse effect on construction materials. Other chemicals may also cause etching or the dissolution of the cobblestones, basalt and granite boulders, and slate and fired red brick. Recommended cleaning methods for the retaining walls include water and chemical methods that do not create adverse conditions for the Lake ecosystem. Water methods soften dirt and soiling material and rinse the deposits from the surface. Chemical cleaners react with dirt, soiling

material, or paint to affect their removal, followed by the cleaning effluent being rinsed off the surface with water. Alternative methods to abrasive cleaning of the retaining wall include low-pressure water wash, scrubbing with natural bristles, steam cleaning, or chemical cleaning.

Archaeological Recommendations

Based on the results of archival research and the field surveys, no new archaeological sites that constitute NRHP-eligible historical properties or CRHR-eligible historical resources were encountered in the project area. Furthermore, no new cultural resources were observed at the Reid-Baldwin Adobe. However, the NAHC SLF search was positive, and the project area sits on land known to be associated with a prehistoric Native American village site, *Aleupkigna* (or “place of many waters”). Multiple excavations at the Reid-Baldwin Adobe have produced both Euro-American historical artifacts and Native American artifacts. These artifact assemblages have been dated to the latter half of the nineteenth century and “may also contain the remains of a prehistoric site in a secondary context” (Hearth et al. 2022). Furthermore, in 1991, an Arboretum grounds maintenance staff worker uncovered a cogged stone (dated by the UCLA Institute of Archaeology as 2,000 to 4,000 years old) while operating a forklift along the western edge of the lake (Snider 1997:108). Therefore, the potential would exist to encounter previously undiscovered archaeological resources during project-related activities that would involve ground disturbance. Because of this potential, the following recommendations are presented to minimize the disturbance of cultural resources in the project area.

Archaeological Recommendation 1: Retain an Archaeological Monitor

An SOI-qualified Archaeologist in prehistoric and historical archaeology (36 CFR Part 61) should be retained before the start of ground-disturbing activities. An archaeological monitor, either meeting or working under the direction of an archaeologist who meets the SOI Professional Qualification Standards in Archaeology, should monitor ground-disturbing activities in native soils on the project site, to minimize disturbance of subsurface archaeological deposits. Depending on the location of work and amount of equipment, more than one archaeological and/or Native American monitor may be required for adequate observation of ground-disturbing activities. The qualified archaeologist or archaeological monitor should have experience working in the Los Angeles basin within ancestral tribal territory.

The archaeological monitoring should include direct observation of all ground-disturbing activities and ground disturbance, inspection of exposed surfaces for evidence of cultural resources, and recordation of all activities and findings in daily monitoring logs. Daily log information should include areas monitored, the nature of the actions being monitored, location and description of any cultural resources identified during monitoring, sample photographs of daily activity (except for photographs of human remains), records of conversations regarding daily construction and monitoring activity, and recommendations for on-site actions, such as security and treatment recommendations.

Responsibilities for the archaeological monitor should include cultural resources monitoring and implementing stop-work authority in the event of an unanticipated cultural resources discovery during project activities. Responsibilities of the SOI-qualified archaeologist should include evaluation of any finds, issuing clearance to recommence project activities after a stop-work order has been implemented to protect potential cultural resources, analysis and curation of materials, and preparation of a monitoring activities results report, conforming to the California Office of Historic Preservation Archaeological Resource Management Reports guidelines. The SOI-qualified archaeologist should determine when no further monitoring is required, such as in the event that bedrock or fill material is reached.

A SOI-qualified archaeologist, or the archaeological monitor working under the direction of a SOI-qualified archaeologist, should evaluate all inadvertently discovered potential cultural material, to determine whether it is archaeological. If the find is determined not to be archaeological (either a cultural resource or TCR), work may proceed without further delay. If it is determined to be archaeological, work should stop within a 50-foot radius until a qualified archaeologist can assess the significance of the find. The qualified archaeologist should have the authority to modify the no-work radius as appropriate, using professional judgement. The qualified archaeologist should inspect the ground surface around the potential discovery and displaced soil carefully, to determine whether the discovery constitutes an isolated find (i.e., fewer than three items) or a site (i.e., a feature or three or more items). If no other artifacts or features are identified within 50 feet of the find, the find should be determined to be an isolate (unless human remains are present).

Non-unique isolated artifacts, or isolated artifacts that are not a TCR, should be documented, reported, and described in the final monitoring report, and they should not constitute a discovery. After recording, non-unique and non-TCR isolates should be reburied in the location from which they were recovered, before completion of ground-disturbing activities. Ground-disturbing activities should remain on hold until authorization to resume work has been granted by the qualified archaeologist. Work may continue on other parts of the project site while consultation and treatment are conducted.

Archaeological Recommendation 2: Unanticipated Discoveries

If significant or potentially significant unanticipated cultural resources are discovered during ground-disturbing activities, such as structural features, unusual amounts of bone or shell, flaked ground stone artifacts, historic-era artifacts, architectural remains, or human remains, the qualified archaeological monitor should suspend ground-disturbing activity immediately within at least 50 feet of the find. If possible human remains are observed, a larger buffer may be implemented at the discretion of the qualified archaeologist. Based on the initial assessment, appropriate treatment measures should be developed. Treatment measures typically should include development of avoidance strategies, capping with fill material, or mitigation of impacts through data recovery programs, such as excavation or detailed documentation with appropriate research designs. If, because of the resource evaluation and tribal consultation process, the resource is considered to be a TCR, treatment measures should be developed with input from consulting tribes. All collected cultural remains should be cleaned and cataloged, and final disposition, which may include permanent curation at the Natural History Museum of LA County, repatriation, or reburial in a secure location on site if curation is infeasible, should be determined in consultation with the landowner, the District, DPR, consulting tribes, and the qualified archaeologist.

If human remains are discovered during on-site construction activities, the County of Los Angeles (County) will ensure that the immediate vicinity where the remains are located, according to generally accepted cultural or archaeological standards or practices, is not damaged or disturbed by further development activity until the County has discussed and conferred, pursuant to PRC Section 5097.98, with the most likely descendants (MLD), as determined by the Native American Heritage Commission (NAHC), regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The County shall immediately notify the Los Angeles County Coroner, who shall then make a determination within two working days as to whether the remains are of Native American origin or whether an investigation into the cause of death is required. If the remains are determined to be Native American, the Coroner shall notify the NAHC within 24 hours. The NAHC will immediately notify the MLD of the deceased. The MLD shall make recommendations to the District within 48 hours for the treatment or disposition, with proper dignity, of the human remains and/or grave goods, which shall be implemented in accordance with PRC Section 5097.98 and Section 15064.5(e) of the State CEQA Guidelines. If the MLD fails to make recommendations within 48 hours, the County may reinter the remains in an area of the property not subject to further disturbance. The NAHC is authorized to resolve any disputes regarding the disposition of such remains, pursuant to Section 15064.5(e) of the State CEQA Guidelines. Work may resume at the County's discretion but will commence only after consultation and treatment have been concluded. Work may continue on other parts of the Project while consultation and treatment are conducted.

Tribal Cultural Resource Recommendations

TCRs include sites, features, places, cultural landscapes, sacred places, and objects with cultural value to California Native American tribes that are listed in or eligible for listing in the CRHR, listed in local historic registers, or determined by a lead agency to be significant resources.

Excavations at the Reid-Baldwin Adobe have uncovered Native American artifacts, both in and around the building, and below the floor. The sub-floor artifacts provide evidence of an earlier Native American occupation, likely associated with the Gabrieleno village site Aleupkigna (or "place of many waters"), which Hugo Reid listed as being on Rancho Santa Anita (Wallace and Wallace 1958). Native American artifacts also were recovered from exploratory trenches outside the Adobe, and a cogged stone (circa 2,000 to 4,000 years old) was found along the western edge of the lake. Before the land was granted to Hugo Reid and his wife Victoria, a Gabrielino woman, it was owned by Mission San Gabriel and primarily was inhabited by indigenous cattle hands in service to the Mission. The Reid family owned Rancho Santa Anita until 1847.

Therefore, the project area is sensitive for TCRs. To reduce potential impacts on resources that may be identified during project construction with the potential to be TCRs, the following measures should be implemented.

TCR Recommendation 1: Retain a Native American Monitor before the Start of Ground-Disturbing Activities

Los Angeles County Public Works (Public Works) should invite a Native American monitor from Tribe(s) that have engaged in consultation and requested monitoring prior to the commencement of any ground-disturbing activity in native soils, in conjunction with a U.S. Secretary of Interior (SOI) qualified archaeologist and should provide compensation for the Native American monitor for their time spent. The Native American monitor(s) should be members of the Tribe(s) they represent. A monitoring agreement between each of the monitoring Tribe(s) and Public Works should be prepared prior to ground-disturbing activities in native soils.

The Native American monitor(s) should work with the Project's qualified archaeologist during ground-disturbing activities, identify potential Native American TCRs, and communicate concerns regarding TCRs directly to Public Works and Los Angeles County Department of Parks and Recreation (DPR). Additionally, the Tribal representatives should attend the preconstruction cultural resources awareness meeting and should be given the opportunity to provide TCR awareness training to all Project personnel, in cooperation with the qualified archaeologist prior to the start of construction.

The Native American monitor(s) should maintain ongoing collaborative consultation with the qualified archaeologist during ground-disturbing activities. Ground-disturbing activities include, but are not limited to, clearing, grubbing, grading, potholing, tree removal, boring, drilling, demolition, pavement removal, excavation, trenching and, in certain circumstances, auguring work in native soils. As designated by the qualified archaeologist, Native American monitoring should not be required for augering depths, which have no potential for yielding TCRs. Native American monitoring should not be required for work activities that include the demolition and removal of hardscaping material such as existing concrete, asphalt pavement, and pavement base layers.

The Native American monitor(s) should complete daily monitoring logs that should provide descriptions and locations of relevant ground-disturbing activities, construction activities performed, soil types, cultural-related materials, and any other facts, conditions, materials, or discoveries of significance to the Tribe(s). The monitoring logs should identify and describe any discovered TCRs and/or Native American human remains and burial goods and should be provided to Public Works and DPR at the end of ground-disturbing activities. Monitoring logs will be kept confidential with the Project records.

The Native American monitor(s) should have the ability to notify and coordinate with the qualified archaeologist, who has the authority to temporarily stop work and identify a stop work radius, if they find a cultural resource that may require further identification, recordation, and evaluation. If the cultural resource is determined to be of Native American origin, the monitoring Tribe(s) should assess and develop appropriate handling and treatment measures. Ground-disturbing activity within the stop work radius should remain on hold until the discovered TCR has been fully assessed by the Native American Tribe(s) and authorization to resume work has been granted by the qualified archaeologist. Work may continue on other parts of the Project outside of the stop work zone while consultation and treatment are conducted.

On-site tribal monitoring should conclude when the Tribe(s) and qualified archeologist determine and provide written confirmation that all ground-disturbing activities with the potential to impact TCRs on the Project site or in connection with the Project are complete.

TCR Recommendation 2: Unanticipated Discovery of Tribal Cultural Resource Objects (Non-Funerary/Non-Ceremonial)

Upon discovery of any TCR or potential TCR, all construction activities in the immediate vicinity of the discovery should cease within a radius deemed appropriate by the SOI qualified archaeologist and Native American monitor(s). If the qualified archaeologist in consultation with the Native American monitor(s), as appropriate, determines that the find does not represent a potentially significant cultural resource, work may resume immediately and no agency notifications are required. If the cultural resource is determined to be a TCR, the qualified archaeologist, in cooperation with the Native American monitor(s) and other authorized staff, should use flagging tape, rope, or some other means to delineate the area of the find plus a 50-foot

no-work buffer zone. The qualified archaeologist, in consultation with the Native American monitor(s), should have the authority to modify the no-work radius as appropriate, using professional judgement. If potential human remains are observed, TCR Recommendation 2 (below) should take effect.

Any discovery of cultural resources should be kept confidential and secure to prevent unauthorized access of sensitive information. There should be no publicity regarding any TCRs discovered or recovered. However, discoveries should be documented and included in a confidential cultural resources monitoring report prepared by the qualified archaeologist, in consultation with the Native American monitor(s), as necessary, and should be submitted to the Public Works and DPR, the South Central Coastal Information Center (SCCIC), and the NAHC.

If the resource is considered to be a TCR, as result of the resource evaluation and tribal consultation process, treatment measures should be developed with input from consulting Tribe(s). All collected cultural objects should be cleaned and cataloged. Final disposition, which may include permanent curation at an appropriate institution, repatriation, or, if curation is infeasible, reburial in a secure on-site location, should be determined in consultation with Public Works and DPR, the consulting Tribe(s), and the qualified archaeologist.

TCR Recommendation 3: Unanticipated Discovery of Human Remains and Associated Funerary or Ceremonial Objects

If Native American human remains and/or grave goods are discovered or recognized on the Project site, then California PRC Section 5097.9 and Health and Safety Code Section 7050.5 should be followed, in addition to procedures outlined in Archaeological Recommendation 2 (above). PRC 5097.98(d)(1) defines Native American human remains as an inhumation or cremation in any state of decomposition or skeletal completeness. Funerary objects, also called associated grave goods in PRC 5097.98, and human remains should be treated alike per PRC 5097.98 (d)(1) and (2). Any discovery of Native American human remains/grave goods should be kept confidential.

Paleontological Resource Recommendations

The project sediments that are mapped as Quaternary alluvium (Qa) and Quaternary gravels (Qg) are too young to contain significant paleontological resources, and project disturbance of these two units would not require monitoring for paleontological resources (see Figure 6). The Quaternary alluvial fan sediments (Qof) sediments are old enough to produce paleontological resources and apparently have produced a mammoth fossil in Pasadena. Therefore, paleontological resource monitoring is recommended for excavations in the parts of the project that are mapped as lying in older Qof. A qualified paleontologist, or archaeologist who is cross-trained in paleontology, should be retained to supervise required monitoring, and to design and present paleontological resources awareness training for project construction personnel before the start of project construction. The qualified paleontologist should supervise paleontological monitoring, specimen recovery, specimen preparation, specimen identification, preparation of a final report on paleontological resource monitoring efforts, and curation of significant paleontological resources that are recovered, consistent with the guidelines of the SVP (2010).

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Appendix A – Confidential SCCIC Record Search

Appendix B – Confidential Paleontology Record Search

Appendix C – Confidential NAHC SLF and AB52

Appendix D – Confidential DPR Forms

Appendix D
AB 52 Tribal Consultation

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

MARK PESTRELLA, Director

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (626) 458-5100
http://dpw.lacounty.gov

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

IN REPLY PLEASE
REFER TO FILE: SWQ-2

October 28, 2024

Ms. Christina Conley
Cultural Resource Administrator
Gabrielino Tongva Indians of California Tribal Council
P.O. Box 941078
Simi Valley, CA 93094

Dear Ms. Conley:

BALDWIN LAKE AND TULE POND RESTORATION PROJECT
LOS ANGELES COUNTY PUBLIC WORKS
ASSEMBLY BILL 52 CONSULTATION PURSUANT TO
CALIFORNIA PUBLIC RESOURCES CODE SECTION 21080.3.1

On behalf of the Los Angeles County Flood Control District, we thank you for the opportunity to consult with the Gabrielino Tongva Indians of California (Tribe) regarding potential impacts to tribal cultural resources for the Baldwin Lake and Tule Pond Restoration Project located at the Los Angeles County Arboretum in Arcadia, CA. The District is the lead agency, pursuant to the California Environmental Quality Act (CEQA) for the project. The purpose of this letter is to summarize and conclude the Assembly Bill (AB) 52 consultation between the District and the Tribe.

Pursuant to California Public Resources Code Section 21082.3(d), the project intends to certify a CEQA Mitigated Negative Declaration (MND). The primary objectives of the proposed project are to restore Baldwin Lake and Tule Pond, include sustainable ecological features and educational and recreational elements, and improve water quality.

A formal notification and AB 52 consultation request letter was sent to tribes on September 7, 2023, and a certified mail receipt showed the letter was received by you on September 15, 2023. On October 1, 2023, the District received an e-mail from the Tribe confirming receipt of the project information and that the Tribe needs to be present during ground disturbances.

On November 16, 2023, the District e-mailed the Tribe and informed them that mitigation measures, including a tribal monitor, would be incorporated in the project for ground disturbing events. The District followed-up with the Tribe via e-mail on January 29, 2024, February 14, 2024, and February 27, 2024, about engaging for consultation as needed. On February 27, 2024, the Tribe responded via e-mail restating a monitor is required, and on February 29, 2024, the District replied via e-mail asking if they would like to continue a formal consultation via teleconference or e-mail.

On March 11, 2024, the District called you, left a voicemail, and sent a follow-up e-mail. The Tribe returned the telephone call the same day informing the District they would follow-up with more information. The District called and sent follow-up e-mails to the Tribe on March 14, 2023, April 10, 2024, and April 18, 2024. On April 18, 2024, the Tribe responded via e-mail to try to schedule a call the following week. After additional voicemails and e-mails (on April 23 and 25, 2024), the Tribe and the District held a teleconference with you (Tribe) and Ms. Grace Komjakraphan-Tek (District) to discuss the project and cultural significance of the site to the Tribe. There were additional coordination e-mails sent on May 10 and 23, 2024, and on June 18, 2024, the District shared draft mitigation measures for the project to the Tribe via e-mail; subsequently, the Tribe responded on the same day stating no additional comments on the mitigation measures. On July 3, 2024, the District e-mailed an updated set of mitigation measures with revisions to MM TCR-1 to the Tribe.

The District supports and shares the Tribe's goal of protecting tribal cultural resources, as defined by Section 21074 of the California Public Resources Code under AB 52. As the lead agency under CEQA, the District must determine the potential significance of impacts caused by the project, including the potential for impacts to tribal cultural resources, and will incorporate MM TCR-1, MM TCR-2, MM TCR-3, and MM CR-7 for the project.

This letter concludes the Baldwin Lake and Tule Pond Restoration Project AB 52 consultation with the Gabrielino Tongva Indians of California tribal representatives.

We greatly appreciate the opportunity to discuss the project with interested tribes, such as yours, and thank you for your input during our consultation.

If you have any questions, please contact me at (626) 300-4665 or mlombos@pw.lacounty.gov or your staff may contact Dr. Melissa Turcotte at (626) 300-4670 or mturcotte@pw.lacounty.gov.

Very truly yours,

MARK PESTRELLA, PE
Director of Public Works



MARK A. LOMBOS, PE
Assistant Deputy Director
Stormwater Quality Division

MT:dw
Q Drive\Sec\2024 Docs\Ltrs\Gabrielino Tongva Indians of CA_Baldwin Lake Tule Pond

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October 28, 2024

IN REPLY PLEASE
REFER TO FILE: SWQ-2

Mr. Andrew Salas
Chairman
Gabrieleño Band of Mission Indians – Kizh Nation
P.O. Box 393
Covina, CA 91723

Dear Mr. Salas:

BALDWIN LAKE AND TULE POND RESTORATION PROJECT
LOS ANGELES COUNTY PUBLIC WORKS
ASSEMBLY BILL 52 CONSULTATION PURSUANT TO
CALIFORNIA PUBLIC RESOURCES CODE SECTION 21080.3.1

On behalf of the Los Angeles County Flood Control District, we thank you for the opportunity to consult with the Gabrieleño Band of Mission Indians – Kizh Nation (Tribe) regarding potential impacts to tribal cultural resources for the Baldwin Lake and Tule Pond Restoration Project located at the Los Angeles County Arboretum in Arcadia, CA. The District is the lead agency, pursuant to the California Environmental Quality Act (CEQA) for the project. The purpose of this letter is to summarize and conclude the Assembly Bill (AB) 52 consultation between the District and the Tribe.

Pursuant to California Public Resources Code Section 21082.3(d), the project intends to certify a CEQA Mitigated Negative Declaration (MND). The primary objectives of the proposed project are to restore Baldwin Lake and Tule Pond, include sustainable ecological features and educational and recreational elements, and improve water quality.

A formal notification and AB 52 consultation request letter was sent to tribes on September 7, 2023, and a certified mail receipt showed two letters were received by you and Ms. Christina Swindall Martinez of the Tribe on September 13, 2023. On September 15, 2023, the District received an e-mail containing a letter from the Tribe requesting consultation.

On September 28, 2023, the District responded noting that we received the request for consultation and were working with staff on availability, and on October 5, 2023, the District followed up via e-mail asking whether a teleconference/virtual or in-person meeting was preferred. The Tribe responded on October 10, 2023, that a telephone consultation could be held, and the District asked if there was availability the week of

October 23, 2023. The Tribe responded that they were unavailable for a telephone consultation until December 2023, and provided the District with the option of an e-mail consultation. On the same day (October 10, 2023), the District confirmed e-mail consultation was sufficient and the Tribe requested a few weeks to provide information.

On October 12, 2023, the District received tribal cultural resources information from the Tribe via e-mail. On November 16, 2023, the District added additional District representatives and County of Los Angeles Department of Parks and Recreation (DPR) to the e-mail consultation for continued discussion about the Tribe's mitigation measures and scheduled a follow-up teleconference for November 28, 2023. All materials received from the Tribe are kept confidential in administrative files for reference but not distribution. Due to a schedule conflict for the Tribe, the meeting was rescheduled for the following day. On November 29, 2023, a teleconference with the Tribe, the District, and DPR was held to discuss the Tribe's cultural affiliation and ancestry to the project site and stated all information shared is specific to the Tribe, including the mitigation measures which cannot be shared with other Tribes. On June 18, 2024, the District shared draft mitigation measures for the project to the Tribe via e-mail; subsequently, the Tribe responded on June 19, 2024, with a number of requested edits to the mitigation measures to safeguard their tribal cultural resources. The District responded with edits on June 25, 2024, and the Tribe called and left a voicemail to state their e-mails were down, but they received the e-mail and would get back to the District soon. The Tribe and the District exchanged additional e-mails on June 26, June 27, July 8, and August 6, 2024, with minor edits to the mitigation measure language to clarify the tribal monitors would be invited prior to any ground-disturbing activities on soils and describing the distinction between the archaeological element and the tribal cultural resources element. In the District's e-mail on August 6, 2024, the District also clarified that mitigation measures are not tribe specific, and we refer to the Native American Heritage Commission to determine the Most Likely Descendent per Public Resources Code Section 5097.98, if Native American human remains and/or associated grave goods are discovered at the project site. On August 6, 2024, the Tribe responded via e-mail restating the mitigation measures do not adequately protect their tribal cultural resources, and attached the same mitigation measure language that was shared on November 28, 2024.

The District supports and shares the Tribe's goal of protecting tribal cultural resources, as defined by Section 21074 of the California Public Resources Code under AB 52. As the lead agency under CEQA, the District must determine the potential significance of impacts caused by the project, including the potential for impacts to tribal cultural resources. Furthermore, AB 52 allows for either party, "acting in good faith and after reasonable effort," to conclude that mutual agreement cannot be reached [Public Resources Code, Section 21080.3.2(b)].

The information provided by the Tribe during the consultation has been considered for the project, but after acting in good faith and in consideration of the Tribe's requests and multiple rounds of e-mails and edits to the draft mitigation measures, the District concludes that a reasonable effort has been put forth and the District and the Tribe have been unable to reach a mutual agreement regarding the mitigation measure language.

However, the District agrees that mitigation measures are required to reduce potentially significant impacts to tribal cultural resources to a less than significant impact and will incorporate MM TCR-1, MM TCR-2, MM TCR-3, and MM CR-7 for the project. The District has determined these mitigation measures will mitigate impacts to any tribal cultural resources that may be discovered. The District recognizes the tribes serve as their own experts and supports and wants to ensure that all consulting tribes will have the opportunity to provide their input based on their unique expertise, therefore the mitigation measures cannot pre-emptively guarantee a specific treatment for an inadvertently discovered tribal cultural resource. The District will defer to the Native American Heritage Commission for determination of the Most Likely Descendent, per Public Resources Code Section 5097.98, if Native American human remains and/or associated grave goods are discovered at the project site.

This letter concludes the Baldwin Lake and Tule Pond Restoration Project AB 52 consultation with the Gabrieleño Band of Mission Indians – Kizh Nation tribal representatives.

We greatly appreciate the opportunity to discuss the project with interested tribes, such as yours, and thank you for your input during our consultation.

If you have any questions, please contact me at (626) 300-4665 or mlombos@pw.lacounty.gov or your staff may contact Dr. Melissa Turcotte at (626) 300-4670 or mturcotte@pw.lacounty.gov.

Very truly yours,

MARK PESTRELLA, PE
Director of Public Works



MARK A. LOMBOS, PE
Assistant Deputy Director
Stormwater Quality Division

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Appendix E
Noise Data

AECOM

Noise Modeling Inputs, Assumptions, and Calculations

Construction Equipment Roster and Reference Noise Levels

Equipment Description	Acoustical Usage Factor (%)[1]	Lmax at 50 feet (dBA)[1]	Hourly Leq at 50 feet (dBA)
Backhoe	0.4	78	74
Concrete Pump Truck	0.2	81	77
Dozer	0.4	82	78
Dump Truck	0.4	76	72
Excavator	0.4	81	77
Front End Loader	0.4	79	71
Pickup Trucks	0.4	75	75
Pumps	0.5	81	78

1. Based on the Federal Highway Administration's Roadway Construction Noise Model User Guide - Table 1 Noise Emission Reference Levels and Usage Factors.

Construction Noise Level Prediction

Construction Area	Two Loudest Pieces of Equipment[1]	Leq at 50 feet (dBA)	Distance to Closest Receptor (Feet)	Predicted Noise Level at Closest Receptor ($L_{eq(1hr)}$, dBA)	Combined Construction Noise Level at Closest Receptor ($L_{eq(1hr)}$, dBA)
Baldwin Lake	Dozer	78	248	64	67
	Dozer	78	248	64	
Tule Pond	Dozer	78	136	69	72
	Dozer	78	136	69	

1. Based on the Federal Transit Administration's Transit Noise and Vibration Impact Assessment Manual "General Assessment" methodology.

Traffic Noise Model Inputs and Assumptions

Factor/Condition	Input/Assumption	Note
Haul Route Daily Truck Traffic Volume:	12	Per 9/12/23 call
Daily Hours of Construction:	10 Hours	Per 9/12/23 call
Hourly Heavy Truck Volume:	12	Total daily volume to occur in sporadic bursts, thus all daily truck trips coinciding is the assumed worst-case scenario
Modeled Roadway Width:	12'	Estimated worst-case based on aerial imagery
Distance from Edge of Pavement (EOP) to Receiver:	50'	Closest residential structures are approximately 50' from roadway EOP
Modeled Receiver Height:	4.92'	Standard listener height for traffic noise analysis using FHWA Traffic Noise Model Version 2.5
Modeled Traffic Speed:	25 mph	Assumed worst-case speed
Calculated Hourly L_{eq} at Receiver:	55.5	Level at 50' from edge of pavement, no topography and average pavement

Construction Pond/Lake Draining Level Prediction

Construction Area	Equipment	Leq at 50 feet (dBA)	Distance to Closest Receptor (Feet)	Predicted Noise Level at Closest Receptor ($L_{eq(1hr)}$, dBA)	Combined Noise Level at Closest Receptor ($L_{eq(1hr)}$, dBA)
Tule Pond	1 x Generator	78	309	62	67
	2 x Pumps	81	309	65	
Baldwin Lake	1 x Generator	78	793	54	59
	2 x Pumps	81	793	57	

Construction Vibration Level Prediction

Construction Area	Equipment	PPV at 25 feet (in/sec)	Distance to Closest Receptor (Feet)	Predicted PPV at Closest Receptor (in\sec)	Predicted VdB at Closest Receptor
Tule Pond	Dozer	0.089	134	0.0141	71
Baldwin Lake	Dozer	0.089	248	0.0071	65

Appendix B

Mitigation Monitoring and Reporting Program

Baldwin Lake and Tule Pond Restoration Project
MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MONITORING AND REPORTING PROGRAM

Baldwin Lake and Tule Pond Restoration Project
Initial Study/Mitigated Negative Declaration
State Clearinghouse No. 2024110093

Introduction

This Mitigation Monitoring and Reporting Program (MMRP) has been prepared pursuant to the California Environmental Quality Act (CEQA) and the State CEQA Guidelines to provide for monitoring of the mitigation measures required by adoption of the Baldwin Lake and Tule Pond Restoration Project (proposed Project) Mitigated Negative Declaration (MND). Section 21081.6 of the Public Resources Code and Section 15091(d) of the CEQA Guidelines require public agencies to "adopt a reporting or monitoring program for changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment." The lead agency must define specific reporting and/or monitoring requirements to be enforced during project implementation prior to final approval of the proposed Project.

The Los Angeles County Flood Control District (District) is the lead agency for the proposed Project and is responsible for administering and implementing the MMRP. The MMRP stipulates all required mitigation measures that are to be implemented and completed during an appropriate project phase. It also facilitates documentation necessary to verify that mitigation measures were in fact properly implemented.

Mitigation Monitoring and Reporting Program Procedures

This MMRP gives the District the primary responsibility for all actions necessary to implement the mitigation measures according to the specifications provided for each measure and for demonstrating that the action has been successfully completed. The District's designated environmental monitor will track and document compliance with mitigation measures, note any problems that may result, and take appropriate action to remedy problems. The District, at its discretion, may delegate responsibility for measure implementation and monitoring, or portions thereof, to other responsible individuals, such as a licensed contractor. Specific responsibilities for the District include:

- Coordination of all mitigation monitoring activities
- Management of the preparation, approval, and filing of monitoring or permit compliance reports
- Maintenance of records concerning the status of all approved mitigation measures
- Quality control assurance of field monitoring personnel
- Coordination with other agencies regarding compliance with mitigation or permit requirements
- Reviewing and recommending acceptance and certification of implementation documentation
- Acting as a contact for interested parties or surrounding property owners who wish to register complaints, observations of unsafe conditions, or environmental violations; verifying any such circumstances; and developing any necessary corrective actions

Resolution of Noncompliance Complaints

Any person or agency may file a complaint regarding noncompliance with the mitigation measures addressed in the MMRP. The complaint shall be directed to the Los Angeles County Flood Control

District (900 S. Fremont Avenue, 11th Floor, Alhambra, CA 91804) in written form providing detailed information on the purported violation. The District will investigate any complaints filed to determine the validity of the complaint. If noncompliance with a mitigation measure is verified, the District will take the necessary action(s) to remedy the violation. The complainant will receive written confirmation indicating the results of the investigation or the final corrective action that was implemented in response to the specific noncompliance issue.

Mitigation Monitoring and Reporting Program Matrix

The MMRP is organized in a matrix format. Appropriate Best Management Practices (BMPs) that will be employed during project implementation are listed first, followed by applicable mitigation measures. The first column identifies the BMP topic or mitigation measure number. The second column provides the BMP or mitigation measure. The third column establishes when monitoring will occur. The timing for implementing BMPs or mitigation measures and the definition of the approval process has been provided to assist the District staff to plan for monitoring activities. The fourth column refers to the entity responsible for ensuring that the BMP or mitigation measure is implemented. The fifth column tracks compliance with the measure. This column will be used to document the person who verified that the BMP or mitigation measure was satisfactorily implemented, the date on which this verification occurred, and any other notable remarks. The BMPs are listed first in the matrix, and the mitigation measures are presented by environmental issue area.

As previously mentioned, the District is the lead agency for the proposed Project and is responsible for administering and implementing the MMRP. In addition, Baldwin Lake and Tule Pond are located within the Arboretum, which is owned by the County of Los Angeles (County) and operated by the County of Los Angeles Department of Parks and Recreation (DPR), and the Los Angeles Arboretum Foundation. Lastly, the County of Los Angeles Department of Public Works (PW) also has jurisdiction related to the proposed Project.

Mitigation Monitoring and Reporting Program
State Clearinghouse No. 2024110093

Baldwin Lake and Tule Pond Restoration Project
Initial Study/Mitigated Negative Declaration

Topic / Number	BMP/Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
BEST MANAGEMENT PRACTICES						
Air Quality BMP	The proposed project would implement Rule 403 dust control measures required by the South Coast Air Quality Management District (SCAQMD).	During construction	District			
Erosion Control BMP	Appropriate erosion control, sediment control, tracking control, non-storm water, and waste management BMPs will be implemented.	During construction	District			
Stormwater BMP	If necessary, any residual water from Baldwin Lake and Tule Pond, including residual water contained in the sediments or underlying soils, will be dewatered under the appropriate NPDES permit coverage.	Prior to, and during construction	District			
Transportation BMP	Although full road closures are not anticipated, prior to construction, reasonable advance notifications (e.g., flyers) will be provided adjacent to, and within areas potentially affected by the proposed Project of any road and parking restrictions in their vicinity. The notices would include contact information for comments or questions related to construction activities.	Prior to, and during construction	District			
Utilities and Service Systems BMP	The proposed Project construction would incorporate source reduction techniques and recycling measures and maintain a recycling program to divert waste in accordance with the PW construction and demolition debris recycling ordinances.	During construction	District			

Topic / Number	BMP/Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
MITIGATION MEASURES						
AES-1	The construction contractor shall use appropriate fencing (i.e., barricades and/or temporary fencing with opaque materials) to screen views of construction activities and construction equipment as well as materials and soil in construction staging areas. The visual barrier may be chain link fencing with privacy slats, fencing with windscreen material, a wooden or concrete barrier/soundwall, or another similar barrier. The visual barrier shall be a minimum of 6 feet high to help maintain the privacy of sensitive visual receptors and block long-term ground-level views toward construction activities. The construction contractor will remove the visual barrier when construction is completed and all construction equipment and materials are removed from the site.	During construction	District			
BIO-1	Project construction activities (including removal of sedimentation from both the Lake and Pond) should avoid, if possible, the nesting bird season (which is defined as February 1 through September 1). If the nesting bird season cannot be avoided, the following measures shall be employed to avoid and/or minimize impacts to special-status birds and nesting birds protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (CFGC): • A pre-construction nesting bird survey shall be conducted by a qualified County-approved biologist with the necessary skills to identify birds and nesting bird behaviors,	Prior to, and during construction	District			

Topic / Number	BMP/Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
	within 3 days prior to the start of construction activities (specifically related to ground disturbance and the dewatering or removal of sedimentation of the Lake and Pond) to determine whether active nests are present within or directly adjacent to the construction zone of the Project footprint. ○ In the event an active nest is detected, a qualified biologist shall record the location of the nest and establish a 300-foot radius avoidance buffer for passerines and a 500-foot radius avoidance for raptors. ○ In the event an active nest is found within wetland vegetation associated with either the Lake or Pond, any dewatering or sediment removal activities will be postponed until a qualified biologist has confirmed the nest is inactive. Demarcation of nest avoidance buffer zones 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, etc.) and observed avian response to ambient conditions (e.g., existing traffic noise and human activity). The nest avoidance buffers will be					

Topic / Number	BMP/Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
	clearly delineated with flagging or fencing. ○ The qualified biologist shall monitor the status of all active nests, at least once per week. If signs of disturbance or stress are observed, the qualified biologist shall modify the buffer size between the nest and construction activity, as appropriate to minimize impacts. The qualified biologist shall monitor each active nest until it is determined that nestlings have fledged and dispersed, or the nest is no longer active. ○ Should an active nest of any federal or State-listed bird species be detected at any time, construction activity within 300-feet of the nest shall not commence or shall cease if already underway, and the applicable federal and/or state agency (U. S. Fish and Wildlife Service [USFWS] and/or California Department of Fish and Wildlife [CDFW]) shall be notified. Work in other areas of the Project site may continue as determined appropriate by the qualified biologist.					

Topic / Number	BMP/Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
BIO-2	A Western/Southwestern Turtle Management and Relocation Plan will be prepared by a County-approved qualified biologist prior to the commencement of the Project and will provide the following information: a. Relocation methodology and procedures; b. How to proceed, and provisions to follow, in the event an individual is encountered during construction; c. Requirements for exclusionary fencing around the Project footprint; d. Daily visual inspection requirements (including morning pre-construction sweeps of all active work areas and as-needed inspections under parked/stages vehicles and equipment tires prior to moving. Construction will follow the methods and procedures to properly relocate turtles prior to construction to ensure impacts are less than significant.	Prior to, and during construction	District			
BIO-3	A qualified biologist (i.e., a biologist familiar with the special-status species determined to have the potential to occur due to suitable habitat) will be present during all clearing and grubbing activities that result in the initial removal of upland or wetland vegetation that could serve as habitat (i.e., shelter, cover, etc.) for special-status species. The qualified biologist shall conduct a preconstruction sweep of the area identified for clearing and grubbing immediately prior to equipment mobilization to	Prior to, and during construction	District			

Topic / Number	BMP/Mitigation Measure	Time Frame for Implementation	Responsible Monitoring Agency	Verification of Compliance		
				Initials	Date	Remarks
	confirm there are no special-status species present. If any special-status species are detected within the Project footprint, the qualified biologist will flush the individual(s) out of harm's way. The qualified biologist shall remain on-site for the duration of the clearing and grubbing and periodically survey the site ahead of equipment to ensure the Project footprint is clear of special-status species. Should any federal or state-listed species be detected construction activity within 300 feet of the observed individual(s) shall not commence or shall cease if already underway, and the applicable federal and/or state agency (USFWS and/or CDFW) shall be notified.					
BIO-4	1. All palm trees to be removed as part of the Project will be evaluated by a qualified biologist (i.e., a biologist experienced and familiar with bat ecology) for their potential to support roosting bats, by conducting a one-night pre-construction survey two weeks prior to the start of tree removal. a. If the preconstruction survey determines that no special-status bat species or active roosts are present, then trees shall be removed within two weeks following the preconstruction survey. If trees are not removed within the two week period, then another preconstruction survey shall be conducted to determine, once again, whether special-status species are present. Trees shall be removed within two weeks following the repeat survey.	Prior to construction	District			

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	If active special-status bat roosts are present, tree removal shall be avoided during the maternity season (April 15 through August 31). 2. All potential roost trees shall be removed and trimmed in the presence of a qualified biologist. Removal and trimming of trees with potential for roosting will be conducted using a two-step tree trimming process that occurs over 2 consecutive days: a. Day 1, Step 1: Under the supervision of a qualified biologist, tree branches and limbs with no cavities shall be removed by hand (e.g., using chainsaws). This will create a disturbance (noise and vibration) and physically alter the tree. Bats roosting in the tree will either abandon the roost immediately or, after emergence, will avoid returning to the roost. b. Day 2, Step 2: Removal of the remainder of the tree under the supervision of a qualified biologist may occur on the following day. All construction activity in the vicinity of an active roost shall be limited to daylight hours. 3. All construction activity in the vicinity of an active roost shall be limited to daylight hours.					

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BIO-5	Prior to the initiation of construction, an arborist approved by PW shall review the existing Arboretum tree inventory to determine if there are trees present within the Project footprint that have the potential to require protection and/or replacement under County of Los Angeles Department of Public works (PW) or County of Los Angeles Department of Parks and Recreation (DPR) Tree policies, or other state, federal, and/or local laws and policies, as applicable, to ensure impacts to protected trees are less than significant.	Prior to construction	District			
BIO-6	Standard aquatic resource Best Management Practices (BMPs) will be implemented by the Contractor, including: 1. Prior to construction, the Aquatic Resource Specialist will provide an Environmental Tailgate to go over applicable mitigation measures. 2. The Aquatic Resource Specialist shall work with the BMP crew to clearly define any work areas as required by any mitigation measures. 3. The Aquatic Resource Specialist shall be present during all surface water dewatering. The pump intake shall be equipped with exclusionary screens.	Prior to, and during construction	District			

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CR-1	Prior to construction, all personnel associated with the Project should receive cultural resource awareness training. Training shall be conducted by an individual(s) that meet Secretary of Interior (SOI) Professional Qualification Standards in architectural history and archaeology. Training would cover work practices for the proper treatment of cultural resources and tribal cultural resources (TCRs) and ensuring compliance with applicable environmental laws and regulations. This training will include how to maintain the confidentiality of resources at in-situ locations; how to identify cultural resources/historic materials (e.g., the types of resources to look for), include recognizing possible buried resources; the significance of the resources that need to be protected during Project implementation; and treatment of historic materials or upon discovery of archaeological materials, including TRCs and Native American human remains. Native American representatives shall be afforded the opportunity to participate in the cultural resource training to provide Project personnel with tribal perspectives on working in areas sensitive for TCRs.	Prior to construction	District			
CR-2	When conducting work on the boulder retaining walls, retain as much of the original boulders as possible, including pattern of how stones are laid out. When conducting work on the walls, activities should retain as much of the original material as possible. When reuse of material is not acceptable for purposes of maintaining structural integrity, new materials	During construction	District			

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	should closely match the existing materials to mimic historic characteristics. If subtle variations exist between the historic and new materials, such as color or texture, the substitute materials should be varied so they are not conspicuous by their uniformity. This practice does not apply to the concrete replacement because the entirety of the material is intended to be replaced.					
CR-3	Any substitute materials proposed for use in the new retaining wall must be harmonious with historic materials. Substitute material should match the details and craftsmanship of the historic materials. However, it is important to note that chemical compositions may differ between historic and substitute materials. Therefore, chemical composition of the substitute material should be evaluated to ensure compatibility with the historic material, and special care should be taken to install and anchor the substitute material to the historic material. If subtle variations exist between the historic and substitute material, such as color or texture, the substitute materials should be varied so they are not conspicuous by their uniformity. The substitute materials, including types of compounds and boulders, used to reconstruct the walls shall be recorded for future reference in order to guarantee proper care and maintenance through the life of the historic resource.	During construction	District			
CR-4	Inappropriate cleaning and coating treatments are a significant cause of damage to historic masonry structures such as the Lake and Pond cobblestone retaining walls. Any cleaning	During construction	District			

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	processes should be carried out under the guidance and supervision of an architectural conservator to avoid irrevocable damage to the historic resource. Additionally, the retaining walls' historic appearance must be considered before work, as well as a determination of the level of cleanliness to be achieved. Prior to developing a cleaning program, it is important to understand the building materials, which include a combination of local cobblestones, basalt and granite boulders, slate and fired red brick, and unreinforced board formed concrete. Before choosing a cleaning method, different cleaners should be tested and their results evaluated. Some chemicals and acidic cleaners may have an adverse effect on construction materials. Other chemicals may also cause etching or the dissolution of the cobblestones, basalt and granite boulders, and slate and fired red brick. Recommended cleaning methods for the retaining walls include water and chemical methods that do not create adverse conditions for the Lake ecosystem. Water methods soften dirt and soiling material and rinse the deposits from the surface. Chemical cleaners react with dirt, soiling material, or paint to affect their removal, followed by the cleaning effluent being rinsed off the surface with water. Alternative methods to abrasive cleaning of the retaining wall include low-pressure water wash, scrubbing with natural bristles, steam cleaning, or chemical cleaning.					

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CR-5	A U.S. Secretary of the Interior (SOI)-qualified Archaeologist in prehistoric and historical archaeology (36 CFR Part 61) and Native American monitor from Tribe(s) traditionally or cultural affiliated with the site shall be retained by PW prior to ground-disturbing activities. An archaeological monitor, either meeting or working under the direction of an archaeologist who meets the SOI Professional Qualification Standards in archaeology, shall monitor ground-disturbing activities in areas with potential for archaeological or tribal cultural resources at the Project site to minimize disturbance of subsurface archaeological deposits. The qualified archaeologist and archaeological monitor will have experience working in the Los Angeles basin within ancestral tribal territory. The archaeological monitoring will include direct observation of ground-disturbing activities and ground disturbance in areas with potential for archaeological or tribal cultural resources, inspection of exposed surfaces for evidence of cultural resources, and recordation of all activities and findings in daily monitoring logs. Daily log information includes a description of the areas monitored, the nature of the actions being monitored, location and description of any cultural resources identified during monitoring, sample photographs of daily activity (except photographs of human remains), records of conversations regarding daily construction and monitoring activity, and if resources are found, recommendations for on-	Prior to, and during construction	District			

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	site actions, such as security and treatment recommendations. The archaeological monitor recommending the suspension of work in the event of an unanticipated cultural resources discovery during Project activities. Responsibilities shall include cultural resources monitoring and recommending the suspension of work in the event of an unanticipated cultural resources discovery during Project activities. Responsibilities of the SOI-qualified archaeologist shall include evaluation of any finds, issuing clearance to recommence Project activities after suspension of work has been recommended to protect potential cultural resources, analysis and curation of materials, and preparation of a monitoring activities results report conforming to the California Office of Historic Preservation Archaeological Resource Management Reports guidelines. The SOI-qualified archaeologist in consultation with the Native American monitor will determine when no further monitoring is required, such as in the event that bedrock or fill material is reached.					
CR-6	A SOI-qualified Archaeologist, or archaeological monitor working under the direction of a SOI-qualified archaeologist and Native American Monitor from Tribe(s) traditionally or cultural affiliated with the Site, will evaluate all inadvertently discovered potential cultural material to determine if it is a unique archaeological resource. If the find is determined to not be a unique archaeological resource, work may proceed without further	During construction	District			

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	delay. If the find is determined to be archaeologically important, work will stop within a 50-foot radius until a qualified archaeologist can assess the significance of the find. The qualified archaeologist shall have the authority to modify the no-work radius as appropriate, using professional judgement. The qualified archaeologist will carefully inspect the ground surface around the potential discovery and displaced soil to determine whether the discovery constitutes an isolated find (i.e., fewer than three items) or a site (i.e., a feature or three or more items). If no other artifacts or features are identified within 50 feet of the find, it will be determined to be an isolate (unless human remains are present). Non-unique isolated artifacts, or isolated artifacts that are not a TCR, will be documented, reported, and described in the final monitoring report, but will not constitute a discovery. After recording, non-unique and non-TCR isolates will either be discarded or returned to the ground from which they were recovered prior to the completion of ground disturbing activities. Ground-disturbing activity will remain on hold until authorization to resume work has been granted by the qualified archaeologist. Work may continue on other parts of the Project while consultation and treatment are conducted. If significant or potentially significant unanticipated cultural resources are discovered during ground-disturbing activities, such as structural features, unusual amounts of bone or shell, flaked ground stone artifacts, historic-era					

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	artifacts, architectural remains, or human remains, the qualified archaeological monitor in consultation with the Native American monitor will suspend ground-disturbing activity immediately within at least 50 feet of the find. If possible human remains are observed, MM CR-7, described below, should be followed. Based on the initial assessment, appropriate treatment measures will be developed. Treatment measures typically include development of avoidance strategies, capping with fill material, or mitigation of impacts through data recovery programs such as excavation or detailed documentation with appropriate research designs. If, as a result of the resource evaluation and tribal consultation process, the resource is considered to be a TCR, treatment measures will be developed with input from consulting Tribe(s). All collected cultural objects shall be cleaned and cataloged. Final disposition, which may include permanent curation at an appropriate institution, repatriation, or reburial in a secure location onsite if curation is infeasible, will be determined in consultation with DPR, consulting Tribe(s), and the qualified archaeologist.					
CR-7	If human remains are discovered during on-site construction activities, the County of Los Angeles (County) will ensure that the immediate vicinity where the remains are located, according to generally accepted cultural or archaeological standards or practices, is not damaged or disturbed by	During construction	District			

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	further development activity until the County has discussed and conferred, pursuant to PRC Section 5097.98, with the most likely descendants (MLD), as determined by the Native American Heritage Commission (NAHC), regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The County shall immediately notify the Los Angeles County Coroner, who shall then make a determination within two working days as to whether the remains are of Native American origin or whether an investigation into the cause of death is required. If the remains are determined to be Native American, the Coroner shall notify the NAHC within 24 hours. The NAHC will immediately notify the MLD of the deceased. The MLD shall make recommendations to the District within 48 hours for the treatment or disposition, with proper dignity, of the human remains and/or grave goods, which shall be implemented in accordance with PRC Section 5097.98 and Section 15064.5(e) of the State CEQA Guidelines. If the MLD fails to make recommendations within 48 hours, the County may reinter the remains in an area of the property not subject to further disturbance. The NAHC is authorized to resolve any disputes regarding the disposition of such remains, pursuant to Section 15064.5(e) of the State CEQA Guidelines. Work may resume at the County's discretion but will commence only after consultation and treatment have been concluded. Work may continue on other parts					

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	of the Project while consultation and treatment are conducted.					
NOISE-1	Control of construction noise to the extent feasible through the following (or combination thereof) from the pump and generator system used for pond/lake draining activities: 1. Both the pump and generator shall be located as far away from noise-sensitive land uses as practicable.	During construction	District			
PR-1	A qualified paleontologist meeting the Society of Vertebrate Paleontology shall be retained to design and present Paleontological Resources Awareness Training for Project construction personnel. Further, paleontological resource monitoring is recommended for excavations in parts of the Project mapped as having sediments that have the potential to contain fossils. The qualified paleontologist will supervise paleontological monitoring, specimen recovery, specimen preparation, specimen identification, preparation of a final report on paleontological resource monitoring efforts, and curation of significant paleontological resources covered consistent with the guidelines of the Society of Vertebrate Paleontology.	During construction	District			
TCR-1	PW shall retain a Native American monitor from Tribe(s) that have engaged in consultation and requested monitoring prior to the commencement of any ground-disturbing activity in native soils, in conjunction with a SOI-qualified archaeologist and will provide compensation for the Native American monitor	Prior to, and during construction	District			

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	for their time spent. The Native American monitor(s) should be members of the Tribe(s) they represent. A monitoring agreement between each of the monitoring tribe(s) and PW will be prepared prior to ground-disturbing activities in native soils. The Native American monitor(s) will work with the Project's qualified archaeologist during ground-disturbing activities, identify potential Native American TCRs, and communicate concerns regarding TCRs directly to PW and DPR. Additionally, the tribal representatives shall attend the preconstruction cultural resources awareness meeting and will be given the opportunity to provide TCR awareness training to all Project personnel, in cooperation with the qualified archaeologist prior to the start of construction. The Native American monitor(s) shall maintain ongoing collaborative consultation with the qualified archaeologist during ground-disturbing activities. Ground-disturbing activities include, but are not limited to, clearing, grubbing, grading, potholing, tree removal, boring, drilling, demolition, pavement removal, excavation, trenching and, in certain circumstances, auguring work in native soils. As designated by the qualified archaeologist, Native American monitoring will not be required for augering depths, which have no potential for yielding tribal cultural resources. Native American monitoring will not be required for augering depths, as designated by the qualified					

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	archaeologist, which have no potential for yielding tribal cultural resources. Native American monitoring will not be required for work activities that include the demolition and removal of hardscaping material such as existing concrete, asphalt pavement, and pavement base layers. The Native American monitor(s) will complete daily monitoring logs that will provide descriptions and locations of relevant ground-disturbing activities, construction activities performed, soil types, cultural-related materials, and any other facts, conditions, materials, or discoveries of significance to the Tribe(s). The monitoring logs will identify and describe any discovered TCRs and/or Native American human remains and burial goods and will be provided to PW and DPR at the end of ground-disturbing activities. Monitoring logs will be kept confidential with the Project records. The Native American monitor(s) shall have the ability to notify and coordinate with the qualified archaeologist, who has the authority to temporarily stop work and identify a stop work radius, if they find a cultural resource that may require further identification, recordation, and evaluation. If the cultural resource is determined to be of Native American origin, the monitoring Tribe(s) will assess and develop appropriate handling and treatment measures. Ground-disturbing activity within the stop work radius will remain on hold until the discovered					

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	TCR has been fully assessed by the Native American Tribe(s) and authorization to resume work has been granted by the qualified archaeologist. Work may continue on other parts of the Project outside of the stop work zone while consultation and treatment are conducted. On-site tribal monitoring shall conclude when the Tribe(s) and qualified archeologist determine and provide written confirmation that all ground-disturbing activities with the potential to impact TCRs on the Project site or in connection with the Project are complete.					
TCR-2	A TCR is a site, feature, place, cultural landscape, sacred place or object, which is of cultural value to a Tribe(s) AND either: On or eligible for the California Historic Register or other local historic register, OR the lead agency, at its discretion, chooses to treat the resource as a TCR. See: PRC 21074(a)(1)(A)-(B). Upon discovery of any TCR or potential TCR, all construction activities in the immediate vicinity of the discovery shall cease within a radius deemed appropriate by the qualified archaeologist and Native American monitor(s). If the qualified archaeologist in consultation with the Native American monitor(s), as appropriate, determines that the find does not represent a potentially significant cultural resource, work may resume immediately and no agency notifications are required. If the cultural resource is determined to be a TCR,	During construction	District			

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	the qualified archaeologist, in cooperation with the Native American monitor(s) and other authorized staff, shall use flagging tape, rope, or some other means to delineate the area of the find plus a 50-foot no-work buffer zone. The qualified archaeologist, in consultation with the Native American monitor(s), shall have the authority to modify the no-work radius as appropriate, using professional judgement. If potential human remains are observed, MM TCR-3 and MM CR-7 will take effect. Any discovery of cultural resources must be kept confidential and secure to prevent unauthorized access of sensitive information. There shall be no publicity regarding any TCRs discovered or recovered. However, discoveries will be documented and included in a confidential cultural resources monitoring report prepared by the qualified archaeologist, in consultation with the Native American monitor(s), as necessary, and will be submitted to the PW and DPR, the South Central Coastal Information Center (SCCIC), and the NAHC. If the resource is considered to be a TCR, as result of the resource evaluation and tribal consultation process, treatment measures will be developed with input from consulting Tribe(s). All collected cultural objects shall be cleaned and cataloged. Final disposition, which may include permanent curation at an appropriate institution, repatriation, or, if curation is infeasible, reburial in a secure on-site location, will be determined in consultation					

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	with PW and DPR, the consulting Tribe(s), and the qualified archaeologist.					
TCR-3	If Native American human remains and/or grave goods are discovered or recognized on the Project site, then California PRC Section 5097.9 and Health and Safety Code Section 7050.5 shall be followed, in addition to procedures outlined in MM CR-7. PRC 5097.98(d)(1) defines Native American human remains as an inhumation or cremation in any state of decomposition or skeletal completeness. Funerary objects, also called associated grave goods in PRC 5097.98, and human remains shall be treated alike per PRC Section 5097.98 (d)(1) and (2). Any discovery of Native American human remains/grave goods shall be kept confidential.	During construction	District			