Estates Reservoir Replacement

State Clearinghouse # 2008082060

Draft Supplemental Environmental Impact Report

East Bay Municipal Utility District

September 2013

Notice of Availability
Estates Reservoir Replacement Project
Draft Supplemental Environmental Impact Report
September 6, 2013

Notice is hereby given that a Draft Supplemental Environmental Impact Report (EIR) is available for public review. The project proponent is the East Bay Municipal Utility District (EBMUD), 375 Eleventh Street, Oakland California 94607-4240. EBMUD is also the lead agency, pursuant to the California Environmental Quality Act (CEQA).

Project Description. In January 2010, the EBMUD Board of Directors approved the Estates Reservoir Replacement Project and certified the Environmental Impact Report (EIR) for the Project. Since then, EBMUD has advanced the design and construction of the reservoir replacement project and is proposing to modify the project to include the removal of some trees and changes to the pedestrian path. This work will take place later this year or early next in conjunction with the original landscape work which also includes plantings inside the perimeter fence and thinning of bushes adjacent to Estates Drive. Consistent with CEQA, the Draft Supplemental EIR evaluates environmental impacts associated with the proposed changes.

Significant Impacts. Analysis of environmental impacts associated with the proposed work identified potentially significant impacts in the following areas: Visual Quality and Biological Resources. These impacts would be mitigated to less-than-significant levels by implementation of revised mitigation measures and a new mitigation.

Public Review. Persons interested in reviewing the Draft Supplemental EIR or receiving a copy of the Draft Supplemental EIR should contact Tim Fuette, EBMUD, at (510) 287-1324. The Draft Supplemental EIR and all documents referenced in the Supplemental EIR are available for public review at the EBMUD office, 375 Eleventh Street, Oakland. The Draft Supplemental EIR is also available for public review at the Oakland Public Library (Main Branch) and Montclair Branch or on the internet at EBMUD's website www.ebmud.com/water-and-wastewater/project-updates/estates-reservoir-replacement.

Deadlines. The public review period is from September 6, 2013 through October 21, 2013. Comments must be received by October 21, 2013 at 4:30 p.m. Written comments on this Draft Supplemental EIR should be submitted to Tim Fuette, Associate Civil Engineer, MS #701, 375 Eleventh Street, Oakland, CA 94607-4240 or emailed to estates.supplemental.eir@ebmud.com. Action on the Supplemental EIR is currently scheduled to be taken by the EBMUD Board of Directors at a regularly scheduled board meeting in December 2013, at 375 Eleventh Street, Oakland, California.

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East Bay Municipal Utility District

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TABLE OF CONTENTS

Estates Reservoir Replacement Supplemental EIR

SUMMARY

S.1 Introduction

This Draft Supplemental Environmental Impact Report (EIR) assesses the potential impacts of changes to the Estates Reservoir Replacement Project (Project) proposed by the East Bay Municipal Utility District (EBMUD). This document has been prepared in accordance with the California Environmental Quality Act (CEQA) statutes and guidelines. EBMUD is the lead agency for this CEQA process. Written comments about the Project or EIR should be directed to:

Tim Fuette, Project Manager
East Bay Municipal Utility District
375 Eleventh Street (Mail Slot 701)
Oakland, CA 94607-4240
tfuette@ebmud.com

The purpose of this Draft Supplemental EIR is to address minor changes to the landscaping component for the Estates Reservoir Replacement Project Final EIR (SCH 2008082060) certified on January 26, 2010. The original EIR consists of the following documents: the August 2009 Draft EIR; the January 2010 Response to Comments Final EIR and; Resolution 33753-10, which certifies the Final EIR, makes findings, approves the Mitigation Monitoring and Reporting Program (MMRP) and approves and authorizes the Project. This original EIR is referred to herein as the "2010 EIR".

S.2 Project Description

The Draft Supplemental EIR will focus specifically on impacts and mitigations related to two specific modifications to the Project as described in the 2010 EIR. The first modification discussed relates to the relocation of the improved path on EBMUD property. The second modification discussed is to the perimeter landscaping to remove 22 trees, refer to Table 2-1.

S.3 Summary of Impacts

Table S-1 summarizes and compares impacts associated with the 2010 EIR to the impacts analyzed in this Supplemental EIR for the proposed project. Appendix A presents the Revised Mitigation Monitoring and Reporting Program (MMRP), including in full, the measures EBMUD has identified to minimize or avoid the Project's impacts. A ~~strikethrough~~ text indicates that text has been deleted from the 2010 EIR while additions are presented as <u>underlined.</u>

TABLE S-1

Comparison of the 2010 EIR with Proposed Changes Analyzed in This Supplemental EIR

Project-Level Element/Impacts	2010 EIR	Proposed Changes in Supplemental EIR	Discussion
Visual Quality			
Have a substantial, adverse effect on a scenic vista	LTS	LTS=	The proposed tree removal will not change the viewscape in a manner that is substantially different than the existing viewscape and would thus not substantially degrade the existing visual character or quality of the site and its surroundings. The impact remains *less than significant with mitigation* incorporated. The proposed relocation of the path involves constructing two short sections of a low rustic fence along Estates Drive. Thus, there is no additional impact associated with the path relocation and the impacts of the project on short-term visual effects experienced from nearby areas during Project construction remain *less than significant with mitigation* incorporated.
Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway	No Impact	No Impact	
Substantially degrade the existing visual character or quality of the site and its surroundings (Removal of 22 trees): ▪ Short-term visual effects during construction ▪ Alteration of the site's long-term appearance ▪ Effects on views from surrounding area	 LTS LTSM LTSM	 LTS= LTSM+ LTSM+	
Substantially degrade the existing visual character or quality of the site and its surroundings (Path Relocation): ▪ Short-term visual effects during construction ▪ Alteration of the site's long-term appearance ▪ Effects on views from surrounding area	 LTS LTSM LTSM	 LTS= LTSM- LTSM	
Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.	No Impact	No Impact	
Biological Resources			
Substantial adverse effects to any species identified as a threatened, endangered, candidate, sensitive, or special-status species in local or regional plans,	No Impact	No Impact	Changes in the project would result in removal of 22 trees. By incorporating the revised Mitigation Measure 3.4-1 this impact of the proposed change is less than significant. Other potential biological resource impacts would be similar to the 2010 EIR.
Substantial adverse effects to habitat (including habitats for rare and endangered species,	No Impact	No Impact	
Substantial adverse effects to federally protected wetlands (including but not limited to marshes and riparian areas),	No Impact	No Impact	
Substantial interference with movement of any native resident or migratory fish or wildlife species or with established migration or dispersal corridors	LTSM	LTSM=	
Removal or damage to trees considered protected	No Impact	LTSM	
Conflict with any applicable habitat conservation plan	No Impact	No Impact	

LT *Less Than Significant*
LTSM *Less Than Significant with Mitigation*
+ *Impact would be greater than that identified in the 2010 EIR*
– *Impact would be less than that identified in the 2010 EIR*
= *Impact would be the same (or similar) to that identified in the 2010 EIR*

S.4 Issues to be Resolved

The proposed Project modifications include: the planned removal of up to 22 trees along the perimeter of Estates Reservoir and changes of path improvements on EBMUD Property

Other than the modifications related to signage and maintenance of exterior landscaping in relation to the perimeter path, EBMUD does not propose to make any other changes to the Estates Reservoir Replacement Project or to the 2010 EIR.

Chapter 1
Introduction

1.1 Background

On January 26, 2010 the Board of Directors of the East Bay Municipal Utility District (EBMUD) certified the Environmental Impact Report for the Estates Reservoir Replacement Project (2010 EIR) and authorized the implementation of the project. The 2010 EIR mandated Mitigation Measure 3.2-2, in order to mitigate the projects impacts to less than significant on "Visual Quality." Mitigation Measure 3.2-2 required the creation of a Landscape Plan for the project, to be prepared with public input during a Design Phase. During the creation of this Landscape Plan it became evident that certain changes would need to be made to the project that could result in potentially significant impacts that were not discussed in the 2010 EIR. In response to public comment over the proposed changes, the District has prepared this Draft Supplemental EIR.

1.2 Purpose of the Draft Supplemental EIR

EBMUD, as the lead agency, has prepared this Draft Supplemental EIR for the Estates Reservoir Replacement Project in compliance with California Environmental Quality Act (CEQA) Statutes[1] and the CEQA Guidelines[2]. The purpose of this Draft Supplemental EIR is to address modifications to the 2010-approved project, as well as any corresponding impacts and mitigations that were not analyzed in the 2010 EIR.

The first proposed modification to the project as approved in 2010 is the removal of approximately 22 trees along the perimeter of the reservoir property on Estates Drive. The second proposed modification is a revision to the trail improvements on EBMUD property. Other than these two modifications, EBMUD does not propose to make any other changes to the Estates Reservoir Replacement Project.

This Draft Supplemental EIR supplements the analysis presented in the 2010 EIR by describing the proposed modifications of the project and evaluating the potential to generate significant impacts not disclosed in the 2010 EIR. It contains only the information necessary to make the 2010 EIR adequate for the project as revised.

The 2010 EIR which includes the findings and the MMRP is also available for reference at www.ebmud.com.

1. *Public Resources Code 21000-21177.*
2. *California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387.*

1.3 CEQA Draft Supplemental EIR Process

1.3.1 Resources not Further Evaluated in this Draft Supplemental EIR

Section 15128 of the State CEQA Guidelines addresses Effects Not Found to be Significant:

"An EIR shall contain a statement indicating the reasons that various possible significant effects were found not to be significant and were therefore not discussed in detail in the EIR. Such statement may be contained in an attached copy of an initial study."

Furthermore, Section 15083, Early Public Consultation states:

"(a) Scoping has been helpful to agencies in identifying the range of actions, alternatives, mitigation measures, and significant effects to be analyzed in depth in an EIR and in eliminating from detailed study issues found not to be important."

Pursuant to Section 15128 and 15083 (a) of the CEQA Guidelines, this Supplemental EIR shall analyze only those effects identified as potentially significant in the Initial Study prepared for this Project. These effects include: Aesthetics; Biological Resources; and Cultural Resources.

The effects of Noise; Air Quality, Green House Gas and Transportation/ Traffic are not analyzed as part of this Supplemental EIR because the proposed Supplemental EIR work activities are within the 2010 EIR project threshold criteria which were all related to short-term construction impacts. The proposed tree removal construction activity is estimated to take three days to complete using a crew of six; equipment includes chain saw, hauling truck, and a wood chipper. The 2010 EIR project has crew sizes up to 17 workers with a project duration estimated at 18 months to 24 month. Noise emission thresholds were already established for a chain saw and hauling truck while a tree chipper noise emission will be similar to the jack hammer threshold.

The effects of Noise; Air Quality, Geology/Soils; Green House Gas and Transportation/Traffic Work related to path relocation remain the same as the 2010 EIR.

The effects of Geology/Soil environmental factor will not be substantial because removed trees will be chipped and disperse onsite adjacent to removed trees, thus preventing soil erosion. Other effects of Geology/Soils factors do not change from the 2010 EIR impacts.

Effects found to not be significant in the 2010 EIR and excluded from this Supplemental EIR include, Hazards/Hazardous Materials; Public Services; Utilities/Service Systems; Agricultural Resources; Recreation; Population/Housing; and Land Use/Planning. The planned removal of 22 trees and path relocation will not have any impacts on these environmental factors.

1.3.2 Circulation of the Draft Supplemental EIR

EBMUD published a Notice of Preparation (NOP) for the Draft Supplemental EIR on June 21, 2013, which provided a general description of the proposed changes to the approved project. The required 30-day review/comment period for the NOP expired on July 24, 2013. Comments were received from the local community; no comments were received from the responsible or trustee agencies.

This Draft Supplemental EIR is available to local, state, and federal agencies and to interested organizations and individuals who may want to review and comment on the report. Notice was sent directly to every agency, person, or organization that requested notification and the Draft Supplemental EIR is available online at the EBMUD webpage (www.ebmud.com). The publication of the Draft Supplemental EIR marks the beginning of a 45-day public review period. During the 45-day review period, written comments should be mailed or hand delivered to:

Tim Fuette, Associate Civil Engineer
East Bay Municipal Utility District
375 Eleventh Street (Mail Slot #701)
Oakland, CA 94607-4240

1.3.3 Final Supplemental EIR

Written comments received on this Draft Supplemental EIR will be addressed in a Response to Comments document which, together with this Draft Supplemental EIR, will constitute the Final Supplemental EIR. The Response to Comments document will also stipulate any changes to the Draft Supplemental EIR resulting from public and agency input.

After the Final Supplemental EIR has been completed, the EBMUD Board of Directors will then consider certification at a regularly scheduled Board meeting in December 2013. Upon Draft Supplemental EIR certification followed by 30 days after the filing of a notice of determination, EBMUD may proceed with the proposed changes to the project.

1.3.4 Mitigation Monitoring and Reporting

State law requires lead agencies to adopt a Mitigation Monitoring and Reporting Program (MMRP) for those changes to the proposed project that it has adopted or made a condition of approval in order to mitigate or avoid significant effects on the environment. All adopted measures will be included in the revised mitigation monitoring and reporting program to verify compliance.

The EBMUD Board of Directors adopted as conditions of Estates Reservoir Replacement Project approval numerous measures to mitigate potential environmental impacts

associated with the project. Those measures, as revised in Chapter 3 of this Draft Supplemental EIR, are considered part of the proposed project and are also included in the revised MMRP located in Appendix A of this Draft Supplemental EIR. A ~~strikethrough~~ text indicates that text has been deleted from the 2010 EIR while additions are presented as <u>underlined</u>

Chapter 2
Project Description

2.1 Overview

The Estates Reservoir Replacement Project is described in detail in Chapter 2 of the 2010 EIR. The only change to the project description set forth in Chapter 2 of the 2010 EIR is to the "Project Characteristics" as described in Section 2.4 of the 2010 EIR. Those changes are the proposed modifications to the Project as approved in 2010, which are analyzed in this Draft Supplemental EIR. The first modification discussed relates to the relocation of the improved path on EBMUD property. The second modification discussed is to the perimeter landscaping to remove certain trees that are nearly dead, overcrowded with a small understory, and/or declining structurally unsafe (and thus having a high hazard potential). The proposed changes analyzed in this Draft Supplemental EIR are described in Section 2.2.

EBMUD staff prepared a biological assessment and visual simulations resulting from the proposed changes. Findings have been incorporated into Chapter 3 of this Draft Supplemental EIR (Section 3.2, Visual Quality, 3.3 Biological Resource).

2.2 Project Characteristics (Modifications)

2.2.1 The 2010 EIR Landscape Plan

In July 2008, Royston Hanamoto Ally Abey (RHAA) completed a Concept Design Process and Recommendations report for the project that was developed with input from the community through five public meetings that occurred from October 2007 through June 2008. The primary concerns that community members raised during these public meetings on the development of the site plan are graphically identified in the 2010 EIR (2010 Draft EIR, Figure 3.2-4, Primary Concerns, p. 3-2.7) and are listed here for convenience purposes:

- Opportunity for pathway around site property
- Security issues with informal trail along perimeter fence line
- Multiple public and private views into the site
- Security issues due to heavy vegetation
- Maintaining healthy and attractive mature tree canopy around site perimeter
- Security and noise issues for bordering residents
- Fountain operating cost and water usage

These community concerns were incorporated into the concept design for the project and served as the basis for the 2010 EIR Proposed Landscape Plan (2010 Draft EIR, Figure S-2, and 2-3, pp. S-4 and 2-10, respectively).

Perimeter Path

Figures S-2 and 2-3 of the 2010 Draft EIR show an improved path around the perimeter of the project property fronting Estates Drive and connecting to an existing unimproved path.

2010 Draft EIR, p. 3-6.9, paragraph 4, described the following project elements in relation to the path that was to be improved under the proposed landscaping plan:

"As part of the Project, the trail around the site would be improved, and a low wooden fence separating the roadway and path would be constructed, providing a benefit to the community. Four entries to the trail system are proposed at locations that maximize sight distance to the roadway network, as there are no sidewalks in the study area and pedestrians share the roadway with vehicles."

2010 Response to Comments, p. 2.1-8, paragraph 1, further described the path improvements as follows:

"The Draft EIR, Project Characteristics, pages 2-8 through 2-9, as revised, describes all proposed Project elements in detail, including the addition of "an improved (looped) pedestrian path" (page 2-8, paragraph 2) that will be for "for pedestrian use" (page 2-9, bullet 2). The limits of the improved, looped path are shown on Figure 2-3, page 2-10. The improvement of the path is not necessary to accomplish the project objectives, but is being undertaken at the request of neighboring property owners. While the path itself will be improved and looped, the eastern and western limits will generally remain the same to take advantage of existing sight lines. This configuration is being undertaken because a lengthening of the path would shorten the sight distance for example by moving the trail exit towards the middle of the tight radius curve on Estates Drive where the sight distances are shorter . . ."

Tree Removal

The 2010 Draft EIR Figure 2-3, depicting the "proposed public views," indicated that numerous trees would be removed under the project's landscaping plan. However, the text of the 2010 EIR was inconsistent with this depiction, stating the following in regards to the removal of trees:

". . . Existing bushes along the perimeter will be thinned while the lower braches of existing trees will be pruned to address fire prevention and security concerns; this pruning will also open public views into the site . . ." (Project Description, p. S-3, paragraph 3)

"Annual vegetation/tree pruning, consistent with City of Oakland Fire Department Fire Abatement Regulations, will continue to be implemented." (Mitigation Measure 3.2-2, p. 3-2.10, bullet 4)

"No trees are scheduled to be removed from the site, but inadvertent damage may occur during construction . . ." (Mitigation Measure 3.4-1, p. S-8)

"No protected trees that are subject to the City of Oakland's tree ordinance will be removed for this Project. One small oak (3 inches in diameter at breast height) on the south slope of the reservoir may be removed for grading work, as a result of lowering the height of the dam embankment. This tree will be replaced on at least a 3:1 basis. The Project landscape plan outlined in the RHAA Estates Reservoir Concept Design Process and Recommendations Report 2008 (updated 2009) will incorporate native trees such as Coast live oak, California buckeye (Aesculus californica) and California sycamore (Platanus racemosa) in numbers sufficient to compensate for the removal of this one tree, and the impact is less than significant. The landscape plan also includes extensive use of native shrubs and grasses." (Mitigation Impact 3.4-1, pp. 3-4.8 – 3-4.9)

"Extensive tree removal as proposed by commenter was not identified by EBMUD as necessary for achieving the Project objectives, is therefore not part of the defined project scope or budget, and has not been included in the Draft EIR analysis.

The landscape plan prepared for the project and outlined in the Draft EIR does not include removal of trees anywhere on the reservoir site. The evaluation of Biological Resources in the Draft EIR similarly does not include such tree removal, and there is no Project or business purpose associated with such action." (2010 Response to Comments, JJPM-12, p. 2.37-5, paragraphs 1 and 2) *This statement was substantively repeated in response to several comments.*

2010 Draft EIR, Mitigation Measure 3.4-1, pp. S-8 and 3-4.9 states:

"EBMUD will develop and implement a five-year tree monitoring program. Appropriate performance standards may include, but are not limited to a not less than 75 percent survival rate of replacement tree plantings and a requirement that trees be able to be self-sustaining at the end of five years."

Interpretive Signage

The 2010 Response to Comments included the following modification to Mitigation Measure 3.2-1 in response to comments from the Oakland Landmarks Preservation

Advisory Board, for impacts to "Short-term visual effects experienced from nearby areas during Project construction":[3]

". . . Permanent interpretive materials at the reservoir site would include an overview of the history of the reservoir, description and visual of the Royston design, and reference to where more detailed archive information is located, including a video of the active fountains and HALS style documentation. Permanent signage design will be finalized in the Project Design phase in conjunction with the landscape plan" (2010 Draft EIR, Mitigation Measure 3.2-1, p. 3-2.8, and Response to Comments, Text Revisions, p. 3-4, paragraph 2).

2.2.3 Project Changes

The 2010 EIR noted that "The landscape design scheme will be refined during the final design phase, but will remain generally consistent with the landscape plan presented in this EIR and in the 2008 RHAA report (updated 2009)." (2010 Draft EIR, p. 3-2.9, paragraph 6)

The 2010 EIR, MMRP Table, Mitigation Measure 3.2-2, provided, in relevant part:

- A Landscape Plan for the Estates Reservoir Replacement Project will be prepared during the Design Phase that will be consistent with the RHAA Concept Design Process and Recommendations Report 2008 (updated 2009), and ensure that areas disturbed by construction are re-graded and planted to result in landforms that are compatible with existing site topography and landscaping, as well as the neighborhood setting.
- EBMUD will coordinate with neighborhood representatives regarding the placement of new plantings to effect screening, and this input will be incorporated into the Final Landscape Plan.
- Annual vegetation/tree pruning, consistent with City of Oakland Fire Department Fire Abatement Regulations, will continue to be implemented.
- Site improvements will include aesthetic/architectural treatment where facilities are located near to, or are visible from, public trails and residences, namely:
  - . . .
  - Improving the existing trail on EBMUD property, along Estates Drive.
  - Constructing a low, rustic, wooden fence along Estates Drive.
  - . . .

3. The permanent interpretive material was included under Measure 3.2-1, "Visual Quality," due to its similarities with other temporary signage requirements in that mitigation measure; however, as the intent of this signage was to mitigate impacts to cultural resources, it should have been placed under Mitigation Measure 3.5-1 "Cultural Resources."

During the creation of a final Landscape Plan, the EBMUD determined that changes to the project as described in the 2010 EIR would be necessary. These changes are shown in Figure 2.1 of this Draft Supplemental EIR, and are:

Perimeter Path Relocation

Project change - The new perimeter path would be relocated inward away from the shoulder of the Estates Drive and the low rustic wooden fence path component would not be built except at the path access points.

Any proposed path improvements need to provide wheel chair access in order to comply with the Americans with Disabilities Act (ADA). ADA requirements include limiting path grades to not exceed 5.0% percent and installing a 4-foot minimum path width. As a result, locating an ADA-compliant path along the edge of Estates Drive would either require relocating existing utilities on EBMUD property such as street light poles or perform extensive grading that would require removal of up to 20 healthy trees to avoid relocating these utilities. A third option explored and ultimately chosen was to relocate the path to the interior property because it did not require either utilities relocation or as many trees to be removed. The chosen alignment required three trees to be removed versus the 20 healthy trees. Furthermore, it was determined that installing a low rustic wooden fence along the shoulder of Estates Drive without an adjacent perimeter path would limit lateral movement by pedestrians who choose to use the unimproved path along the Estates Drive shoulder, essentially forcing them to walk on the street, causing pedestrian safety concerns. The length of the low, rustic wooden fence will be reduced to locations at the two access points to the perimeter path to improve safety at those points.

Tree Removal

Project Change - 22 trees located between Estates Drive and the security fence surrounding the reservoir will be removed rather than the one tree described in the 2010 EIR. The trees that are proposed to be removed are identified in Table 2-1 as well as shown in Figure 2-1, Site Plan – Proposed Landscaping.

During the creation of a Landscaping Plan a tree assessment was performed by RHAA in order to determine site constraints related to relocating the pedestrian path inward. The objective of the tree assessment was to determine the condition of the trees in the context of health, safety and future management. The RHAA tree assessment identified 54 of 108 trees surveyed that should be removed based on their health, threat to public safety or negative impacts on the health of other trees. The trees that were recommended for removal in the RHAA study were also reviewed by the City of Oakland's arborist and a private scientist hired by a neighbor to the reservoir. After considering the RHAA study and the recommendations of both the City arborist and private scientist, the District has recommended the removal of 22 trees. These trees are shown on Figure 2-1 and are identified in Table 2-1 along with the basis for their removal. Removal of the remaining 32 trees could be deferred for several more years without significant impact on the health of the remaining trees. The removal of these 32 trees is not part of the project.

In addition to having been recommended for removal under the RHAA tree assessment, three of the 22 trees listed in Table 2-1 will need to be removed in order to accommodate the alignment of the ADA-compliant path; identified as numbers 27, 43 and 108.

Note that thinning of the brush/understory and tree pruning to remove dead wood and ivy growth was identified in the 2010 EIR and is still a part of the project.

Interpretive Signage

Mitigation Measure 3.2-1 described in general terms, the contents of the permanent interpretive sign to be installed in order to mitigate temporary visual impacts caused by the project. The purpose of this signage was to provide site visitors with a history of the reservoir. However, Mitigation Measure 3.2-1 did not describe the location in which this sign would be placed. Instead, it stated that "Permanent signage design will be finalized in the Project Design phase in conjunction with the landscape plan."

During the construction phase of the project, a portion of the former roof planter wall was re-used as a retaining wall for an aggregate base pad located at the end of the existing unimproved path. The stone foundations of this base were tagged with graffiti soon after they were installed. EBMUD realized that locating the signage in the proposed open area would require constant maintenance in order to remove graffiti, and that a graffiti-covered sign would not provide the full mitigation to impacts on cultural resources as intended. Therefore, the retaining wall will be removed and the signage will be placed near the existing clearing overlooking the reservoir at the end of the improved ADA path; however, it will be placed on the secured side of the fencing to reduce the likelihood of it being tagged and the associated maintenance.

Because Mitigation Measure 3.2-1 did not specify a location of the proposed interpretive signage, this is not a "change" in the project. Nevertheless, it is included here because the planned installation of the sign has been the subject of neighborhood comments including graffiti and vandalism.

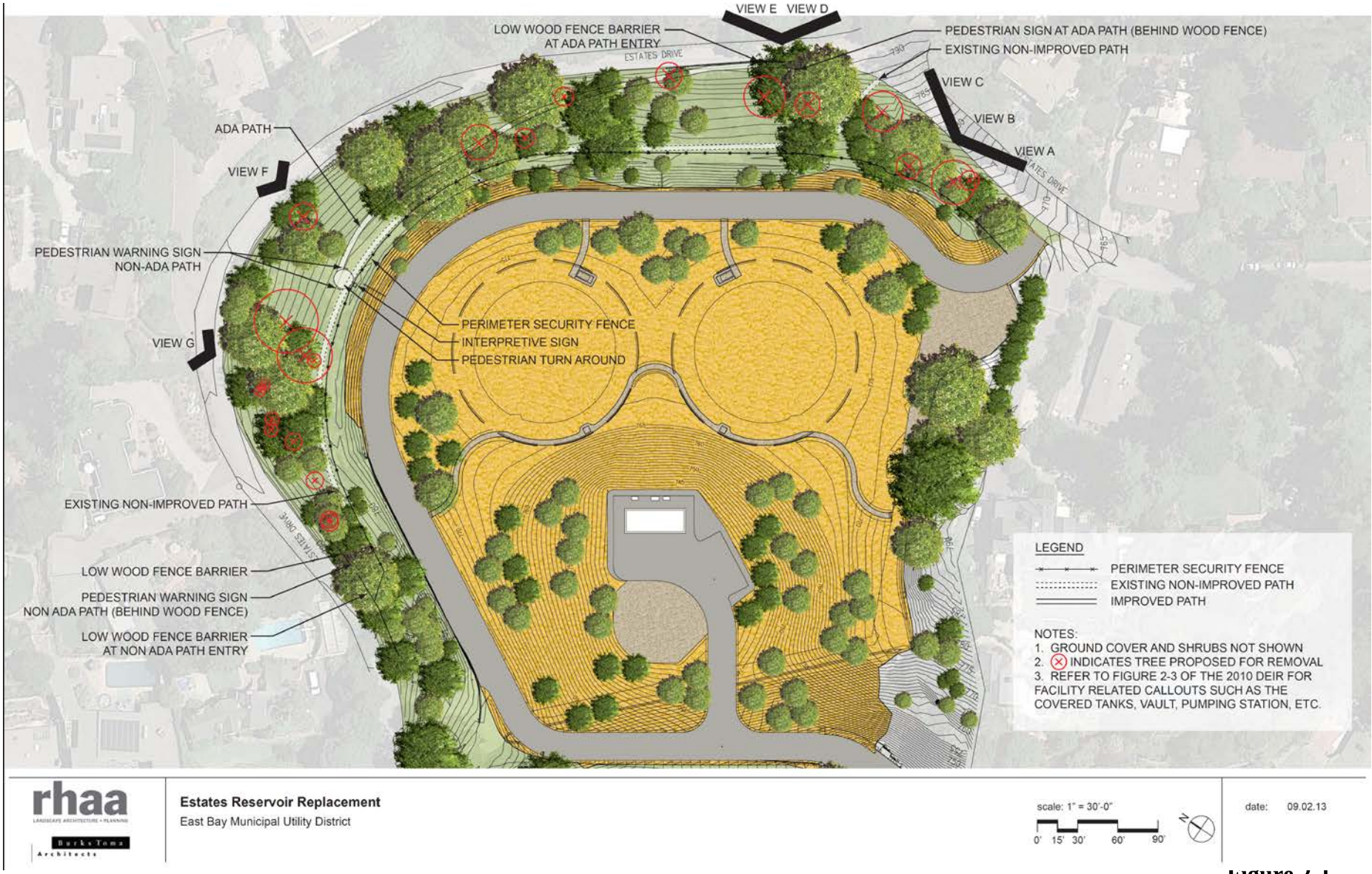

Figure 2-1
Site Plan – Proposed Landscaping

TABLE 2.1
Estates Reservoir Tree Removal Inventory

ID #	Scientific Name	Common Name	DBH[a] *(inches)*	Present Height[b] *(feet)*	Present Spread[c] *(feet)*	Form[d] *(1 - 5)*	Overall Health[e] *(1 - 5)*	Assessment
3*	Quercus agrifolia	coast live oak	6	12	8	3	3	damage to east branch; severe branch die back
5*	Calocedrus decurrens	incense cedar	29	40	18	3	3	thin canopy; declining
9	Pinus radiata	Monterey pine	48	70	50	3	2	signs of beetle; most likely has pitch canker, high hazard potential
10*	Sequoia sempervirens	coast redwood	16	45	5	1	1	very thin - dead or dying
21*	Cedrus deodara	deodar cedar	11	25	18	3	3	thin - growth stunted by eucalyptus
24*	Cedrus deodara	deodar cedar	22	45	30	3	3	poor form – shaded out by eucalyptus
27*	Quercus agrifolia	coast live oak	7	18	15	2	4	topped when young at about 42 inches.
38	Acacia baileyana	Acacia	6	35	15	5	5	volunteer; poor structure, leaning, inappropriate for site
43*	Quercus agrifolia	coast live oak	6	25	10	3	3	very thin canopy - competing for light
61*	Quercus agrifolia	coast live oak	8	20	10	3	3	thin lower canopy; competing with surrounding trees
69*	Quercus agrifolia	coast live oak	12, 13	30	20	2	2	very thin canopy; ivy has reached high in crown; heaving roots
71*	Quercus agrifolia	coast live oak	15	20	20	4	4	competing with cedrus deodara
72*	Quercus agrifolia	coast live oak	5	20	5	2	2	very thin canopy; competing with surrounding trees
75	Quercus agrifolia	coast live oak	2	12	6	3	4	young, small tree; very thin canopy; will conflict with cedrus deodara
76	Quercus agrifolia	coast live oak	3	12	8	4	4	thin canopy; will conflict with cedrus deodara
84	Quercus agrifolia	coast live oak	3	12	6	4	4	competing with surrounding trees; under cedar
86*	Quercus agrifolia	coast live oak	3, 3, 4	12	8	4	4	small understory tree; under cedar
89*	Quercus agrifolia	coast live oak	4, 4	10	10	3	4	crossing branches; under cedar
91*	Quercus agrifolia	coast live oak	5, 4	15	8	2	2	heavy lean; fused trunks; potential for trunk to split and fall
96*	Quercus agrifolia	coast live oak	5	15	8	3	4	lower branch dieback; small understory tree; overcrowding
97*	Quercus agrifolia	coast live oak	4	15	6	3	4	lower branch dieback; small understory tree; overcrowding
108*	Quercus agrifolia	coast live oak	6, 5, 5	15	15	3	3	low and spreading; split at base in largest trunk

Notes:

a. ***DBH*** *– Trunk diameter at breast height (~4.5 feet), measured in inches.*

b. ***Present Height*** *– Approximate tree height, in feet.*

c. ***Present Width*** *– Approximate tree width, or spread, in feet.*

d. ***Form*** *– An assessment of the structural and aesthetic growth of a particular tree, relative to its species' habit. Observed characteristics include presence of co-dominant leaders, included bark, circling roots, trunk lean, crossing or touching branches, as well as general shape. Measured on a scale of 1-5, where (5) excellent, (4) good, (3) fair, (2) poor, (1) extremely poor.*

e. ***Health*** *– An assessment of the overall health of a particular tree, relative to its species and location in the landscape. Observed characteristics include presence of pest infestation, branch/trunk wounds, branch dieback and decay, as well as general vigor and fullness of crown. Measured on a scale of 1-5, where (5) excellent, (4) good, (3) fair, (2) poor, (1) extremely poor.*

Chapter 3
Environmental Setting, Impacts and Mitigation Measures

3.1 Introduction

3.1.1 Organization of Chapter 3

Chapter 3 is organized by environmental discipline, as follows:

- 3.2 Visual Quality
- 3.3 Biological Resources
- 3.4 Cultural Resources

Each section of Chapter 3 updates the following as impacted by the proposed changes to the project. Where no updates are required to a particular section, this is noted below.

3.1.2 Approach to Analysis

This subsection describes the general approach to analyzing the subject environmental resource area and cross references related to issues addressed elsewhere in this Draft Supplemental EIR.

3.1.3 Environmental Setting

This subsection updates the description of the physical environmental conditions of the subject environmental resource area in the project vicinity.

3.1.4 Regulatory Background

This subsection discusses pertinent federal, state, regional, and local laws, regulations, and ordinances, including regional and local plans.

3.1.5 Project Impacts and Mitigation Measures

This subsection is divided into the following three discussions.

Significance Criteria

In Chapter 3, the environmental impacts of the proposed changes to the project are identified as either significant or less than significant. Section 15382 of the State CEQA Guidelines defines a significant impact as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project."

For each environmental resource area evaluated in this Draft Supplemental EIR, criteria for significance have been developed, using the State CEQA Guidelines, applicable city and county standards and policies, and/or the "significance thresholds" of federal, state, regional, or local agencies. An impact that is classified as *significant and unavoidable* would meet the criteria for significance developed for each category of physical environmental conditions. An impact that is potentially significant but would require mitigation measure(s) to reduce the impact to a less-than-significant level is identified as *less than significant with mitigation* incorporated. An impact that would not be significant (because it would not meet the significance criteria) is identified as *less than significant*. A less-than-significant impact includes conditions where no measurable physical change from the proposed project would occur in the physical environmental conditions, or no impact.

Project Impacts

The impact analyses focus on the potential for the proposed changes to the project to result in new significant impacts, or to increase the severity of impacts disclosed in the 2010 EIR. Environmental impacts resulting from the proposed changes to the project were determined by comparing the environmental effects of constructing and operating the proposed project changes with existing environmental conditions. Each section contains an impact summary statement. Following each impact summary statement is the analysis that provides the information and rationale for the impact determination.

Project impacts related to the specific environmental resource area addressed in this subsection are divided into two components of the proposed project changes as appropriate: Relocation of the Perimeter Path and Tree Removal. A chapter discussing the implementation of the existing mitigation measure related to Interpretive Signage is also included. Where there is no nexus between an environmental resource area and a proposed project change, that project change is not discussed.

Mitigation Measures

Section 15126.4(a)(1) of the State CEQA Guidelines states that an EIR "shall describe feasible measures, which could minimize significant adverse impacts . . ." Section 15126.4(a)(3) states that "mitigation measures are not required for effects which are not found to be significant." In this Draft Supplemental EIR, mitigation measures are amended as necessary in order to address all of the potentially significant impacts caused by the proposed project changes. The amendments to the mitigation measures proposed reduce any potential impacts to a *less than significant level with mitigation* incorporated.[4]

Mitigation measures would be incorporated into contract specifications and would be implemented by EBMUD or its contractors, and would be monitored by EBMUD-

4 One exception is to the impacts on cultural resources caused by the removal of the reservoir roof. This impact remains significant and unavoidable. No project changes are proposed in conjunction with this impact. Rather, the implementation of an existing mitigation measure is explained, and the mitigation measure has been amended for the sake of clarity.

appointed personnel or EBMUD construction inspectors. The Mitigation Monitoring and Reporting Program that would be prepared for the proposed project would identify the responsible parties through each project phase, from design and construction to operations and maintenance.

3.1.6 Resources Not Evaluated Further in the EIR

Based on the changes to the project described in Chapter 2 and the environmental impact review performed in the 2010 EIR, no changes are expected with respect to the significance or severity of impacts in the following areas: Geology, Soils, and Seismicity; Hazards and Hazardous Materials; Traffic and Circulation; Greenhouse Gas; Noise and Vibration; and Air Quality.

The effects of Noise; Air Quality, Green House Gas and Transportation/ Traffic were not analyzed as part of this Supplemental EIR because the proposed Supplemental EIR work activities are within the 2010 EIR project threshold criteria which were all related to short-term construction impacts. The proposed tree removal construction activity is estimated to take three days to complete using a crew of six; equipment includes chain saw, hauling truck, and a wood chipper. The 2010 EIR project has crew sizes up to 17 workers with a project duration estimated at 18 months to 24 month. Noise emission thresholds were already established for a chain saw and hauling truck while a tree chipper noise emission will be similar to the jack hammer threshold.

The effects of Noise; Air Quality, Geology/Soils; Green House Gas and Transportation/Traffic Work related to path relocation remain the same as the 2010 EIR.

The effects of soil erosion identified under Geology/Soil environmental factor will not substantial change because removed trees will be chipped and disperse onsite adjacent to removed trees, thus preventing soil erosion. Other effects of Geology/Soils factors do not change from the 2010 EIR impacts.

Effects found to not be significant and excluded from this Supplemental EIR include, Hazards/Hazardous Materials; Public Services; Utilities/Service Systems; Agricultural Resources; Recreation; Population/Housing; and Land Use/Planning. The planned removal of 22 trees and path relocation will not have any impacts on these environmental factors.

3.2 Visual Quality[5]

The two proposed changes to the project that have a *potentially significant* impact on Visual Quality are the removal of 22 trees from the perimeter of the reservoir property and the relocation of the planned perimeter path.

3.2.1 Approach to Analysis

The Approach to Analysis was set forth in the 2010 EIR and forms the basis for analysis performed in this Draft Supplemental EIR. The specific approach to analysis in relation to the proposed changes to the project is detailed below under "Projects Impacts and Mitigation Measures."

3.2.2 Environmental Setting

The environmental setting to the project, including the regional setting and the project area setting, was fully described in the 2010 EIR. Relevant to the proposed changes to the project, the "Project Viewshed and Public View Corridors" was described as follows:

". . . Due to the presence of mature tree cover along the site perimeter and embankment downslope of the reservoir, views of the Estates Reservoir site from Estates Drive and residents' homes are partial and filtered. Pedestrians utilizing the informal footpath along the Project fence line have more direct, eye-level views into the site. Figure 3.2-3 also presents photographic views of the site as seen from adjacent residences and depicts the viewpoint locations. Existing views of the site from residences surrounding and overlooking the site are filtered and partial; the visual focus is the tar and gravel reservoir roof with two large (now dry) fountains and empty planter, which is essentially a "hardscape" view, surrounded by mature trees and shrubs . . ." (2010 Draft EIR, p. 3-2.4)

The 2010 Draft EIR presented a drawing and photographs depicting the existing viewscape (Figure 3.2-3, p. 3-2.6). As part of the analysis of potential impacts of the project in the 2010 Draft EIR, a set of computer-generated visual simulations was produced to illustrate conceptual "before" and "after" "proposed public views" as seen from key public vantage points (Figure 2-3, p. 2-10).

5 " Visual Quality" is referred to as "Aesthetics" in the CEQA Guidelines and is analyzed accordingly here.

3.2.3 Regulatory Background

Federal

No federal regulations directly related to aesthetics and visual resources are applicable to the proposed project. However, the Americans with Disabilities Act requires when a public facility is altered (in this case the path), those alterations be made readily accessible and usable by individuals with disabilities (42 U.S.C.A § 12183{a}{2}).

State

Under California Government Code section 53091, as a local agency and utility district, EBMUD is not subject to local building and land use zoning ordinances (such as tree ordinances) for projects involving "facilities for the production, generation, storage, treatment, or transmission of water." However, it is the practice of EBMUD to work with local jurisdictions during project planning in order to conform to their environmental goals to the extent feasible. Furthermore, as discussed below, the District has incorporated elements of Oakland's Tree Ordinance into its thresholds of significance for the project.

The California Building Code requires that "visitor overlook facilities" and other such public use areas be made accessible (24 C.C.R. § 1105B.3.4). Additionally, the California Building Code requires trails and paths to be constructed "in a manner which will permit at least partial use by wheelchair occupants." (24 C.C.R. § 1132B.2)

Local

The Oakland Tree Ordinance is found in Title 12, Chapter 12.36 of the Oakland Municipal Code. It defines a "protected tree" as,

1. On any property, Quercus agrifolia (California or Coast Live Oak) measuring four inches dbh (diameter breast height) or larger, and any other tree measuring nine inches dbh or larger except Eucalyptus and Pinus radiata (Monterey Pine);
2. Pinus radiata (Monterey Pine) trees shall be protected only on city property and in development-related situations where more than five Monterey Pine trees per acre are proposed to be removed. Although Monterey Pine trees are not protected in non-development-related situations, nor in development-related situations involving five or fewer trees per acre, public posting of such trees and written notice of proposed tree removal to the Office of Parks and Recreation is required per Section 12.36.070A and Section 12.36.080A.
3. Except as noted above, Eucalyptus and Monterey Pine trees are not protected by this chapter.

3.2.4 Project Impacts and Mitigation Measures

Tree Removal Analysis - For purposes of this analysis, visual or aesthetic resources are generally defined as the natural and built landscape features that can be seen. As part of the analysis, a set of computer-generated visual simulations were produced to illustrate existing view and the conceptual "after" visual conditions of the larger trees proposed to be removed as well as several smaller ones. The locations of these public vantage points are identified in Figure 2-1. The evaluation of potential visual impacts associated with the revised landscape plan is based, in part, on a comparison of images portrayed in the simulations, on the proposed landscaping design, and on an assessment of the degree of visual change that the Project would establish. In general, the mature tree canopy that remains after the tree removal still limits the degree of visual change and continues to generally screen or filter views into the site. A description of several public views around the perimeter of Estates Reservoir is proved below and depicted in Figures 3.2-1 through 3.2-9 of this Supplemental EIR.

View A (Figure 3.2-1) is a view of tree No. 5 which is identified in Table 2-1 as a 40-foot tall, 29—inch diameter incense cedar tree. The tree is declining in health and appearance and is not expected to improve. Removing the tree has a visual change as can be seen by comparing the before and after visual conditions. The change in view is less than significant because the adjacent mature tree canopy and natural berm view is maintained. The private view from the across the street has a similar view to public View A, therefore, the impact is less than significant.

View B (Figure 3.2-2) is a view of tree No. 9, which is identified in Table 2-1 as a 70-foot tall, 48-inch diameter Monterey pine tree. The tree is declining in health and appearance; it is likely at the end of its life. Removing the tree has a visual change as can be seen by comparing the before and after visual conditions. The change in view is less than significant because several coast redwood trees located in the background will continue to provide a filtered screen into the reservoir site. Private views from the across the street will have similar views to public View B; therefore, the impact is less than significant.

View C (Figure 3.2-3) is a view of tree No. 10, which is identified in Table 2-1 as a 45-foot tall, 16 inch diameter redwood tree. The tree is dying. Removing the tree has a visual change as can be seen by comparing the before and after visual conditions. The change in view is less than significant because adjacent trees will continue to provide a filtered screen into the reservoir. Private views from the across the street will have similar views to the public View C; therefore the impact is less than significant.

View E (Figure 3.2-5) is a view of tree No. 24, which is identified in Table 2-1 as a 45-foot tall, 22-inch diameter deodar cedar tree. Removing the tree has a visual change as can be seen by comparing the before and after visual conditions. From this vantage point a narrow corridor view will look upon an open-space landscape setting upon tree removal No. 24. This setting remains consistent with that shown View 3 of Figure 2-3 and stated on Page 3-2.9 paragraph 3 of the 2010 EIR; therefore, the change in view is less than significant. Private views directly across the street could possibly have a more open view into the site; however, residences are set-back from Estates Road by over 60 feet and elevated above the road by approximately

View D (Figure 3.2-4), F (Figure 3.2-6), and G (Figure 3.2-7 to 3.2-9) are typical views of shorter trees (smaller or equal to 20 feet height) being removed under the larger mature canopy. In general, both the public and private views remain the same due to other trees located in the foreground and background; therefore the impact is less than significant.

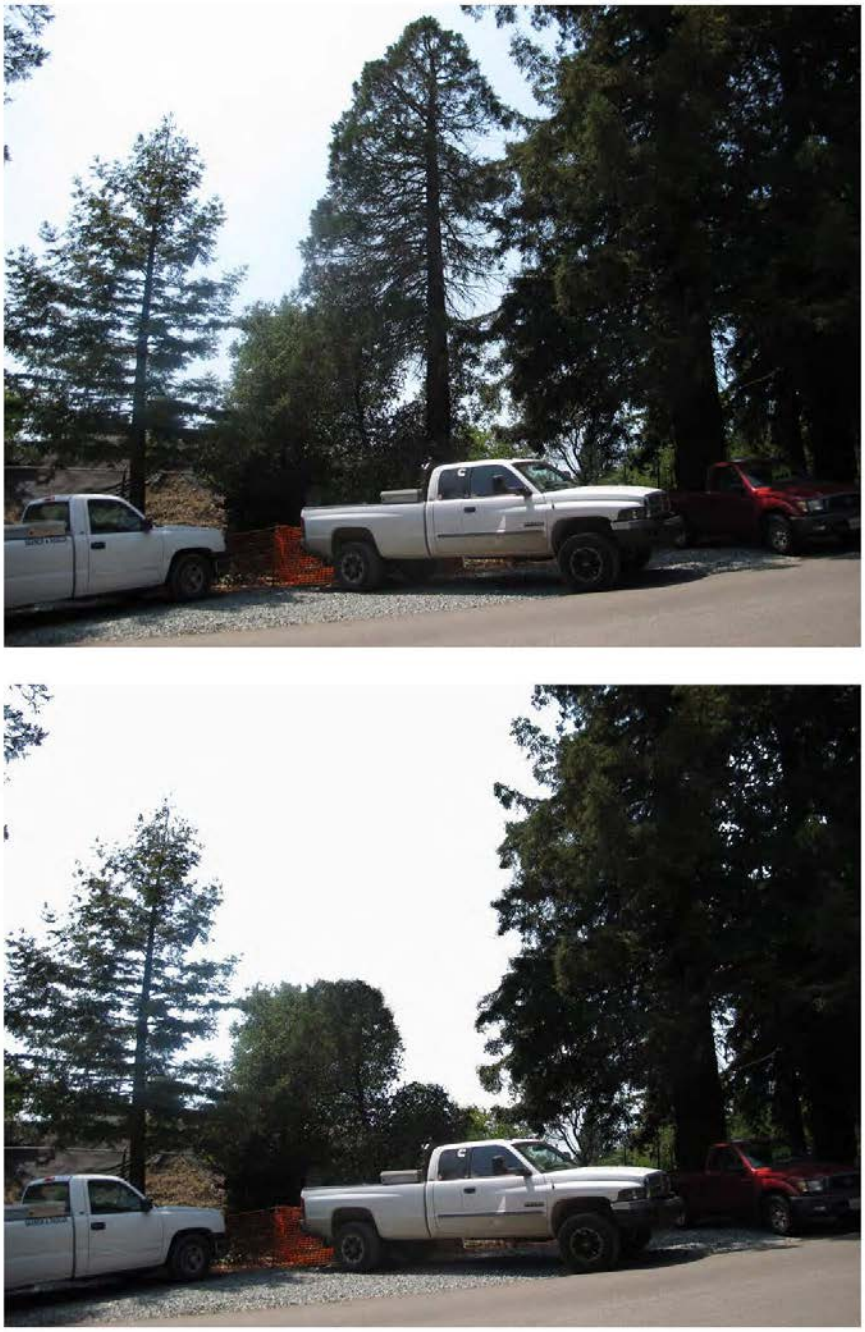

Figure 3.2-1
View A Visual Simulation

VIEW B - TREE #9

Figure 3.2-2
View B Visual Simulation

Figure 3.2-3
View C Visual Simulation

VIEW D - TREE #21

Figure 3.2-4
View D Visual Simulation

VIEW E - TREE #24

Figure 3.2-5
View E Visual Simulation

Figure 3.2-6
View F Visual Simulation

VIEW G - TREE #71

Figure 3.2-7
View G Visual Simulation, Photo 1 of 3

VIEW G - TREE #75 & #76

Figure 3.2-8
View G Visual Simulation, Photo 2 of 3

VIEW G - TREE #72

Figure 3.2-9
View G Visual Simulation, Photo 3 of 3

Path Relocation Analysis - The proposed changes to the project will relocate the path from the perimeter of Estates Drive to the interior of the publicly accessible portion of the reservoir property. The purpose of the low, rustic wooden fence contemplated under the 2010 EIR was to separate Estates Drive (and its vehicle traffic) from the improved perimeter path. Because the improved path would be relocated to the interior of EBMUD's property under the proposed project changes, this separating fence is no longer required and, in fact, presents a safety hazard, as discussed above. The length of the low, rustic wooden fence will be reduced to locations at the two access points to the perimeter path to maintain safety at those points. The relocated perimeter path will also be less visible from the roadway. Thus, the relocation of the path is expected to have less of a visual impact to the project site than the path as originally planned.

Significance Criteria

The significance criteria are described in Appendix C of the 2010 Draft EIR and described in more detail in Section 3.2 of the 2010 Draft EIR, based on Appendix G of the CEQA Guidelines. As stated in the 2010 Draft EIR, ". . . the Project would have a significant impact if it would:

1. Have a substantial, adverse effect on a scenic vista;
2. Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway;
3. Substantially degrade the existing visual character or quality of the site and its surroundings; or
4. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

The significance determination is based on several evaluation criteria, including the extent of Project visibility from sensitive viewing areas such as designated scenic routes, public open space, or residential areas; the degree to which the various Project elements would contrast with or be integrated into the existing landscape; the extent of change in the landscape's composition and character; and the number and sensitivity of viewers. . ." (2010 Draft EIR, pp. 3-2.7 and 3-2.8)

Project Impacts and Mitigation Measures

Impact 3.2-3: The project would have a substantial, adverse effect on a scenic vista (Criterion 1).

Tree Removal - The 2010 EIR concluded that because the project site is not within a defined scenic vista, there would be no impact on scenic vistas (2010 Draft EIR, p. 3-2.10). One basis of this conclusion was that mature trees on the dam downslope and embankment slope towards Woods Drive block or filter distant views of the Bay. None of the trees to be removed under the proposed changes to the project are on the dam downslope and embankment slope; therefore, all proposed changes are within the site that the 2010 EIR concluded was not a scenic vista. Furthermore, as shown in Figures 3.2-1 through 3.2-9

(Draft Supplemental EIR, pp. 3-2.4 through 3-2.12) the removal of the trees will not change the viewscape in a manner that is substantially different than the existing viewscape. Thus, the proposed changes will have a *less than significant* impact.

Path Relocation - The 2010 EIR did not discuss the perimeter trail and low rustic fence in respect to their impacts on scenic vistas. As shown in Figure 2-1, the perimeter path is being relocated to an area that is less visible than the original proposed perimeter path. Both the perimeter path and the rustic fence are on ground level and, as such, have *no impact* on scenic vistas regardless of their configuration.

Impact: The project would substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway (Criterion 2).

The 2010 EIR did not analyze the Criterion 2 effects of the project on "scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway." However, the project is not located along any road designated as a state scenic highway. Therefore, the proposed project changes would have *no impact*.

Impact: The project would substantially degrade the existing visual character or quality of the site and its surroundings (Criterion 3).

Several impacts and mitigation measures were identified in the 2010 EIR. The impacts were categorized in three key topics under Impacts 3.2-1, 3.2-2 and 3.2-4, as follows:

Impact 3.2-1: Short-term visual effects experienced from nearby areas during Project construction.

Tree Removal - The proposed changes to the project would result in the removal of 22 trees. The 2010 Draft EIR, p.3-2.8 discussed the short term visual effects of construction activities related to the project. It stated that existing vegetation would filter views of ongoing construction activities. The trees to be removed under the proposed project will be completed in conjunction with the final site restoration landscape construction activities, thus no new impact will be added in relation to short term visual effects described in the 2010 EIR.

The removal of the trees could potentially substantially degrade the short-term visual effects experienced from nearby areas if the removed trees are left onsite for a significant length of time. This would be a *potentially significant* impact. However, the modification and implementation of Mitigation Measure 3.2-1 would reduce the potentially significant impact to a *less-than-significant* level.

Mitigation Measure 3.2-2 is amended as follows:

> **Measure 3.2-1:** EBMUD will require the contractor to ensure that the construction site is clean by storing building materials and equipment within the proposed staging areas in the reservoir bowl, or in areas removed from public view, and by frequent removal of construction debris that is not to be reused on-site. Construction phasing shall be organized to minimize equipment storage on-site.
>
> The contractor will be required to screen construction activity from residences/properties immediately adjacent to the reservoir site. This privacy screening shall be sufficient to obstruct views into resident's properties from the construction area, and from residences into the construction site. Temporary privacy screening shall be removed once project construction is completed.
>
> Removed trees will be chipped immediately upon removal. Woodchips will spread on site no thicker than 6 inches in any area. Any surplus chips shall be disposed of offsite.
>
> EBMUD will also use temporary interpretive materials to explain the need for the Project during construction, in attractive and simple graphic displays. Temporary signage locations could include, but would not be limited to, areas near the Estates Reservoir entry, along Estates Drive and the residentially developed segments of the truck route. ~~Permanent interpretive materials at the reservoir site would include an overview of the history of the reservoir, description and visual of the Royston design and reference to where more detailed archive information is located, including a video of the active fountains and HALS style documentation. Permanent signage design will be finalized in the Project Design phase in conjunction with the landscape plan.~~[6]

Path Relocation - The construction of the path in its new proposed location is expected to involve construction activities that are substantially similar to those associated with constructing the path on the perimeter of the reservoir property. Because part of the proposed relocation of the path involves not constructing a low rustic fence along Estates Drive, the proposed relocation of the path could involve less construction work than as originally planned. Thus, there is no additional impact associated with the path relocation and the impacts of the project on short-term visual effects experienced from nearby areas during Project construction remain *less than significant with mitigation* incorporated.

6 *The deleted language has been moved to Mitigation Measure 3.5-1 under Cultural Resources, as explained below in Section 3.4.*

Impact 3.2-2: Alteration of the site's appearance and long-term visual effect.

and

Impact 3.2-4: Effects on views from the surrounding area, including public roadways, public trails, open space and residential areas.

The 2010 EIR described the "major alteration in the appearance of the project site" caused by the project, and proposed Mitigation Measure 3.2-2 (repeated in Mitigation Measure 3.2-4) to reduce the impacts to less than significant. The proposed changes to the project would further alter the appearance of the project site and views from the surrounding areas.

Tree Removal - The proposed changes to the project would result in the removal of 22 trees. However, as set forth in detail in the "Tree Removal Analysis" above and shown in as shown in Figures 3.2-1 through 3.2-9, above, the removal of the trees will not change the viewscape in a manner that is substantially different than the existing viewscape, and would thus would not substantially degrade the existing visual character or quality of the site and its surroundings. The impact resulting from the removal of the 22 trees identified in Table 2-1 is therefore considered to be *less than significant*.

Path Relocation - The proposed changes to the project will relocate the path from the perimeter of Estates Drive to the interior of the accessible reservoir property, obviating the need for a lengthy low, rustic wooden fence along Estates Drive. As discussed above in the "Path Relocation Analysis," the relocation of the perimeter path is expected to have less of an impact on long-term visual effect than the path as originally contemplated. It would thus not substantially degrade the existing visual character or quality of the site and its surroundings. The impact resulting from the proposed relocation of the perimeter path is therefore considered to be *less than significant*.

The impacts from the project will therefore remain *less than significant with mitigation* incorporated. However, Mitigation Measure 3.2-2 is amended to reflect the proposed project changes, as follows:

Measure 3.2-2:

- A Landscape Plan for the Estates Reservoir Replacement Project will be prepared during the Design Phase that will be consistent with the RHAA Concept Design Process and Recommendations Report 2008 (updated 2009), and ensure that areas disturbed by construction are regarded and planted to result in landforms that are compatible with existing site topography and landscaping, as well as the neighborhood setting.
- EBMUD will coordinate with neighborhood representatives regarding the placement of new plantings to effect screening, and this input will be incorporated into the Final Landscape Plan.
- The contractor shall be required to warrant landscape plantings for one year after project completion.

- Annual vegetation/tree pruning, consistent with City of Oakland Fire Department Fire Abatement Regulations, will continue to be implemented.
- EBMUD will ensure that the contractor restores graded, disturbed areas to a natural-appearing landform.
- Site improvements will include aesthetic/architectural treatment where facilities are located near to, or are visible from, public trails and residences, namely:
  - Creating a new drainage feature with rocks and stones, around the reservoir valve pit at the base of the excavated basin.
  - Improving the existing trail on EBMUD property, along Estates Drive.
  - ~~Constructing a low, rustic, wooden fence along Estates Drive.~~
  - Constructing a parking area for EBMUD equipment and staff vehicles in the valve pit.

Impact 3.2-5: The project will create a new source of substantial light or glare which would adversely affect day or nighttime views in the area (Criterion 4).

The proposed project changes do not include the installation of any new lights, equipment or other features that would create a new source of substantial light or glare. Thus, the proposed project changes would have no impact under this Criterion.

3.3 Biological Resources

The proposed change to the project that has a potentially significant impact on Biological Resources is the removal of 22 trees from the perimeter of the reservoir property.

3.3.1 Approach to Analysis

Section 3.4 of the 2010 EIR presented a detailed description of impacts associated with construction and operation of the proposed Estates Reservoir Replacement Project on Biological Resources. The section includes a summary of four biological surveys performed in August 2008 that characterized the plants and wildlife community on and adjacent to the Project site. These surveys served as a basis to evaluate impacts the Project would have on biological resources consistent with the significance criteria identified with Appendix G of the CEQA Guidelines. On August 22, 2013, an additional survey was performed to confirm the habitat conditions from the original EIR and to determine if there had been any changes in species use of the site. The follow-up survey confirmed the findings in the 2010 Estates Reservoir EIR biological section. These five biological surveys also serve as the basis for the analysis of the impacts of the proposed tree removal on biological resources.

3.3.2 Environmental Setting

The environmental setting to the project, including the regional setting and the project area setting, was fully described in the 2010 Draft EIR. This description included the results of biological field surveys of the site conducted by EBMUD biologists and botanists in 2008, and the existing vegetation was depicted in Figure 3.2-2 (p. 3-2.4). A comprehensive list of plants observed on the project site was shown in Table 3.4-1 (p. 3-4.2). The August 2013 survey includes five additional plant species not previously listed; California Buckeye (Aesculus califonica), Poison Oak (Toxiocodendron diversilobum), Chervil (Anthriscus caucalis) Prostrate Knotweed (Polygondum aviculare), and Sweet Clover (Melitotus indica).

In describing the existing Biological Resources at the project site, the 2010 Draft EIR stated the following:

"Plant Communities and Wildlife Habitats at Estates Reservoir Site"

"The Project site has no natural plant communities as defined by *A Manual of California Vegetation* (Sawyer and Keeler-Wolf, 1995). Nearly all shrubs and trees on the site were planted to create a visual barrier to mitigate the visual impact of the covered reservoir on the surrounding community. The site is actively landscaped and surrounded by residential housing, making it unlikely that native plants would be present. No rare plant species were observed during surveys. The entire property has been landscaped with ornamentals and exotic and native tree species with Coast live oak (*Quercus agrifolia*) sparsely distributed on

the site. The site is dominated by Cotoneaster (Cotoneaster sp.), Cypress (Cupressus spp.), Firethorn (Pyracantha sp.) and Juniper (Juniperus sp.).

The dominance of introduced plant species on the site provides poor habitat for sensitive wildlife species. Estates Reservoir is completely surrounded by residential development and is not a significant corridor for wildlife." (2010 Draft EIR, pp. 3-4.6 – 3.4.7)

"Aquatic Habitats

There is no aquatic habitat in the Project area.

Special-Status Species Assessment

For the purpose of this EIR, special status species include plant and wildlife species listed as rare, threatened or endangered under the federal and state endangered species acts, candidate species, state and federal species of concern, and plants on the California Native Plant Society (CNPS) lists for CEQA consideration (List 1A, 1B, or 2).

The site was surveyed for sensitive species on August 5 and 19, 2008. The description of the wildlife species potentially occurring within the Project location is based on observation of individuals and/or species sign, analysis of the California Natural Diversity Database (CNDDB), and discussion with area biologists. Species or species sign observed at the site include only black-tailed deer (*Odocoileus hemionus*). No species listed as threatened, endangered, species of special concern by the California Department of Fish and Game (CDFG), or sensitive species by the CNPS were observed.

Queries of the CNDDB indicate that three special status species have been recorded within one mile of the Estates Reservoir Project area. These are: fragrant fritillary (*Fritillaria liliacea*) silver-haired bat (*Lasionycteris noctivagans*), and Bay checkerspot butterfly (*Euphydryas editha bayensis*). There is a one-mile buffer for point records for these species in the CNDDB. Habitat on the Project site is not suitable for these species and they are not likely present. The Bay checkerspot butterfly is listed as extirpated in the area and the host plant for this species is not present on the site or nearby.

Trees on site have the potential to provide nesting habitat for birds from February through July. No bird nests were observed on site during sensitive species surveys or the raptor survey conducted by Gary Beeman.

There are no approved habitat conservation plans in the Project vicinity. Therefore, no further discussion of this topic is provided. . ." (2010 Draft EIR, pp. 3-4.6 – 3.4.7)

For the purposes of this Draft Supplemental EIR including the August 22, 2013 biological survey, the environmental setting remains the same as that described Chapter 3.4 of the 2010 Draft EIR and there have been no changes.

3.3.3 Regulatory Background

The regulatory background related to project impacts on Biological Resources was stated in great detail in the 2010 and is used as the basis for this Draft Supplemental EIR.

3.3.4 Project Impacts and Mitigation Measures

Significance Criteria

The significance criteria are described Appendix C of the 2010 EIR and described in more detail in Section 3.4 of the 2010 Draft EIR (p. 3-4.8), based on Appendix G of the CEQA Guidelines. As stated in the 2010 EIR, the project would have a significant impact if it would result in:

1. Substantial adverse effects to any species identified as a threatened, endangered, candidate, sensitive, or special-status species in local or regional plans, policies, regulations or by lists of species of concern from the CDFG, USFWS, or as defined by Section 15380 of the CEQA Guidelines;
2. Substantial adverse effects to habitat (including habitats for rare and endangered species, as defined by Fish and Game Code 903) or other sensitive natural community identified in local or regional plans, policies, regulations, or by lists compiled by the CDFG or USFWS;
3. Substantial adverse effects to federally protected wetlands (including but not limited to marshes and riparian areas), as defined by Section 404 of the Clean Water Act, or riparian and marsh areas under the jurisdiction of the CDFG, as defined by Fish and Game Codes 1601–1603;
4. Substantial interference with movement of any native resident or migratory fish or wildlife species or with established migration or dispersal corridors;
5. Removal or damage to trees considered protected; or
6. Conflict with any applicable habitat conservation plan.

Project Impacts and Mitigation Measures

Impact 3.4-3: The Project would result in substantial adverse effects to any species identified as a threatened, endangered, candidate, sensitive, or special-status species in local or regional plans, policies, regulations or by lists of species of concern from the CDFG, USFWS, or as defined by Section 15380 of the CEQA Guidelines (Criterion 1).

and

Impact 3.4-4: The Project would result in substantial adverse effects to habitat (including habitats for rare and endangered species, as defined by Fish and Game

Code 903) or other sensitive natural community identified in local or regional plans, policies, regulations, or by lists compiled by the CDFG or USFWS (Criterion 2).

and

Impact 3.4-4: The Project would result in substantial adverse effects to federally protected wetlands (including but not limited to marshes and riparian areas), as defined by Section 404 of the Clean Water Act, or riparian and marsh areas under the jurisdiction of the CDFG, as defined by Fish and Game Codes 1601–1603 (Criterion 3).

The 2010 EIR stated that,

"The Estates Reservoir site is within a large-scale, well established residential neighborhood and has been maintained as a manicured landscape for several decades. Ornamental vegetation on the site and in the surrounding neighborhood has decreased (if not eliminated) the value of on-site vegetation for native wildlife habitat. The Estates Reservoir Project will therefore not have a significant adverse impact on biological resources, or to special status/sensitive plants and communities. Because of the extensive grass, shrub and tree planting proposed as part of the Project, the Project will, in fact, increase the potential for habitat for native species with the planting of native coast live oak, California Sycamore and California buckeye. This impact is considered beneficial and no further discussion is offered nor are mitigation measures required. . . " (2010 Draft EIR, Impact 3.4-3, p. 3-4.10)

It further concluded that,

"The Estates Reservoir site has no jurisdictional wetlands as defined by Section 401 and 404 of the Clean Water Act, and Sections 1600-1616 of the California Fish and Game Code. No construction activities for the Estates Reservoir Replacement Project would occur at or near (within 100 feet) of streams, wetlands, or riparian habitat. Therefore, there would be no impacts from Project construction on features potentially subject to Section 401 and 404 of the Clean Water Act and Sections 1600–1616 of the California Fish and Game Code. . ." (2010 Draft EIR, Impact 3.4-4, pp. 3-4.10 – 3.4-11)

As discussed above, the 2010 EIR also concluded that there were no species identified as a candidate, sensitive or special status plant or animal within the project area and that the project area did not contain suitable habitat for these species. The proposed changes to the project would not change the 2010 EIR's conclusion that the project area contains no habitat suitable for species identified as a candidate, sensitive or special status plant or animal and would thus not impact such a habitat. It would not change the 2010 EIR's conclusion that the project area contains no protected wetlands or riparian areas. Thus, even with its proposed changes, the project continues to have *no impact* under Criteria 1, 2 and 3.

Impact 3.4-2: The Project would result in substantial interference with movement of any native resident or migratory fish or wildlife species or with established migration or dispersal corridors (Criterion 4).

The 2010 EIR stated that because the project site is fenced and surrounded by residential land uses, it does not serve as a wildlife dispersal or migration corridor. (2010 Draft EIR, Appendix C, "Initial Study," p. 14, bullet d) The 2010 EIR's analysis of impacts to raptors and other nesting birds under Criterion 4 was based on the premise that "impacts to raptors and other nesting birds will be limited, if any. All large, mature trees on site will remain and only a few small trees will be removed when the height of the dam embankment is reduced. . . " (2010 Draft EIR, Impact 3.4-2, p. 3-4.9)

Nevertheless, the Draft EIR stated,

"The removal of several trees and shrubs on the south slope behind the reservoir has the potential to result in direct mortality of native birds (and nests) which are protected during nesting under the California Fish and Game Code. In addition, human disturbances and construction noise during the breeding season (including clearing, grading, trimming, and removal of trees, shrubs, and other nesting habitat for pipelines, bore-and-jack pits, and project facilities) could cause nest abandonment and death of young at active nests around the perimeter of the Project area. . ." (Draft EIR, Impact 3.4-2, p. 3-4.9)

The 2010 EIR thus identified the removal of trees as having a *potentially significant* impact on nesting raptors and special status birds. It thus presented Mitigation Measure 3.4-2 in order to reduce the impacts to *less than significant with mitigation* incorporated:

- "EBMUD will avoid disturbing active nests of special-status nesting birds by performing preconstruction surveys and creating no-disturbance buffers. If construction activities (i.e., ground clearing and grading, including removal of trees or shrubs) are scheduled to occur during the nonbreeding season (September 1 through January 31), no mitigation is required.
- If construction activities are scheduled to occur during the breeding season (February 1 through August 31), EBMUD will implement the following measures to avoid potential adverse effects on nesting raptors and other special-status birds.
- EBMUD will retain a qualified wildlife biologist to conduct preconstruction surveys of all potential nesting habitat within 500 feet of construction activities where access is available.
- If active nests are found during preconstruction surveys, EBMUD will create a no-disturbance buffer (acceptable in size to the CDFG) around active raptor nests and nests of other special-status birds during the breeding season, or until it is determined that all young have fledged. The size of these buffer zones and types of construction activities restricted in these areas will be based on existing noise and human disturbance levels at the

Estates Reservoir Project site. Nests initiated during construction are presumed to be unaffected by the activities occurring, and no buffer would be necessary.

- If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further mitigation is required. Trees and shrubs within the construction footprint that have been determined to be unoccupied by special-status birds or that are located outside the no-disturbance buffer for active nests may be removed." (Draft EIR, Impact 3.4-2, pp. 3-4.9 – 3.4-10)

The proposed changes to the product include the removal of 22 trees from the perimeter of the reservoir property. Though it was assumed in the 2010 EIR that no trees would be removed as a part of the project, the actual impacts of tree removal on raptors was nevertheless analyzed in the 2010 EIR and Mitigation Measure 3.4-2 adopted in order to mitigate these impacts to a less than significant level. Mitigation Measure 3.4-2 likewise applies to the proposed changes to the project, and so the impacts of the proposed changes remain *less than significant with mitigation* incorporated.

Impact 3.4-1: The Project would result in removal or damage to trees considered protected (Criterion 5).

The 2010 EIR defined "protected trees" based on Oakland's Tree Ordinance, set forth above. However, it concluded that – with the exception of one small oak tree – no trees would be removed. (Draft EIR, Impact 3.4-1, pp. 3-4.8 – 3-4.9) Under the proposed changes to the project, 22 trees will be removed, 17 of which are considered "protected trees" under the Oakland Tree Ordinance. This is a potentially significant impact.

2010 EIR stated that the one removed oak tree would be replaced on a 3:1 basis, and that the Project landscape plan outlined in the RHAA Estates Reservoir Concept Design Process and Recommendations Report 2008 (updated 2009) will incorporate native trees such as Coast live oak, California buckeye (*Aesculus californica*) and California sycamore (*Platanus racemosa*) in numbers sufficient to compensate for the removal of this one tree, and the impact is less than significant (2010 Draft EIR, Impact 3.4-1, p. 3-4.9). However, because some tree replacement was contemplated under the project itself, no tree replacement was included as a component of a mitigation measure.

The Oakland Tree Ordinance provides for mitigation of the loss of protected trees, stating in relevant part:

Replacement plantings shall be required in order to prevent excessive loss of shade, erosion control, groundwater replenishment, visual screening and wildlife habitat in accordance with the following criteria:

1. No tree replacement shall be required for the removal of nonnative species, for the removal of trees which is required for the benefit of remaining trees, or where insufficient planting area exists for a mature tree of the species being considered.

2. Replacement tree species shall consist of Sequoia sempervirens (Coast Redwood), Quercus agrifolia (Coast Live Oak), Ancutus merciesii (Madrone), Aesculus californica (California Buckeye) or Umbelluiana californica (California Bay Laurel).
3. Replacement trees shall be of twenty-four (24) inch box size, except that three fifteen (15) gallon size trees may be substituted for each twenty-four (24) inch box size tree where appropriate.
. . . (Oakland Municipal Code, Title 12, § 12.36.060{B})

Though the District is not subject to the Oakland Tree Ordinance, it finds that the mitigations set forth in the Oakland Tree Ordinance are appropriate for this project. Therefore, Mitigation Measure 3.4-1 is amended as follows:

Measure 3. 4-1:

- EBMUD will develop and implement a five-year tree monitoring program. Appropriate performance standards may include, but are not limited to a not less than 75 percent survival rate of replacement tree plantings and a requirement that trees be able to be self-sustaining at the end of five years.
- EBMUD will replace all removed protected trees in accordance with the mitigations set forth in the Oakland Tree Ordinance.
  - Replacement trees shall not be required for the removal of nonnative species, or for the removal of trees for the benefit of the remaining trees.
  - Replacement tree species shall consist of Sequoia sempervirens (Coast Redwood), Quercus agrifolia (Coast Live Oak), Ancutus merciesii (Madrone), Aesculus californica (California Buckeye) or Umbelluiana californica (California Bay Laurel).
  - Replacement trees shall be planted on the site with fifteen (15) gallon size trees and at least a 3:1 replacement ratio.

With implementation of Mitigation Measure 3.4-1 as amended, the impact of the proposed changes to the project will be *less than significant with mitigation* incorporated.

Impact: The Project would conflict with any applicable habitat conservation plan (Criterion 6).

The 2010 EIR stated that there is no Habitat or Conservation Plan or other similar plan affecting the project site (Draft EIR, Appendix C, "Initial Study," p. 14, bullet f). That remains true to this date. The proposed changes to the project will not affect this conclusion and thus the project will continue to have *no impact* in relation to Criterion 6.

3.4 Cultural Resources

Cultural Resources- Clarification of the 2010 EIR

The 2010 EIR concluded that the project would have a significant but unavoidable impact on a historical resource through the necessary removal of the roof of the Estates Reservoir, which was designed by noted landscape architect Robert Royston (2010 Draft EIR, Impact 3.5-1, p. 3-5.21).

In order to reduce the significant and unavoidable cultural resource impact of permanently and physically eliminating the roof and fountains, Historic American Landscapes Survey (HALS) style documentation of the Estates Reservoir roof was prepared as a part of Mitigation 3.5-1. Information includes drawings such as as-built/original design plans, historic photographs, and current large-format photographs that record significant landscape and architectural features, including the physical context of the resource, and a written history and description. Archival packages including narrative reports, historic photos and maps were sent to four repositories including the Oakland Heritage Alliance, the History Room at the Oakland Public Library, the City of Oakland Planning Department and the Environmental Design Archives at the University of California at Berkeley.

The City of Oakland Landmarks Preservation Advisory Board requested that EBMUD install permanent interpretive material at the site as part of the project as a further mitigation to the impacts to cultural resources caused by the removal of the reservoir roof. The installation of permanent interpretive materials at the reservoir site was therefore included in a mitigation measure. However, it was included under Mitigation Measure 3.2-1 for temporary impacts to "Visual Quality" due to its similarities with other temporary signage requirements set forth under that mitigation measure (2010 Response to Comments, p. 3-4). It should have been more properly placed under Mitigation Measure 3.5-1 to address impacts to "Cultural Resources."

As discussed above, permanent interpretive signage will be located at the project site in story-board format approximately 24 inches by 36 inches in size. It will contain a brief history of the site, include photographs of the historic roof and fountains. The signage will be placed in an existing clearing at the end of the improved ADA path; however, it will be placed on the secured side of the fencing to reduce the likelihood of it being tagged or otherwise covered in graffiti.

Mitigation Measure 3.5-1 is amended as follows:

> **Measure 3.5-1:** A Historic American Landscapes Survey (HALS) style documentation of the Estates Reservoir roof designed by Robert Royston will be prepared. The level of documentation will be similar to that described in HALS documentation level II, which includes at a minimum measured drawings such as as-builts or original design plans, historic

photographs, if available, and current large-format photographs that record significant landscape and architectural features, including the physical context of the resource, and a written history and description. The documentation will be submitted to the Oakland Heritage Alliance, the Oakland Historical Archives, the Oakland Cultural Heritage Survey staff within the Planning and Zoning Division of the City of Oakland, and the UC Berkeley Historical Archives. The intent is to reduce the adverse effect associated with loss of historical information; it will not prevent the physical loss of the resource and a significant and unavoidable impact will occur.

Permanent interpretive materials at the reservoir site located on EBMUD Website would include an overview of the history of the reservoir, description and visual of the Royston design, and reference to where more detailed archive information is located, including a video of the active fountains and HALS style documentation. Permanent signage design will be finalized in the Project Design phase in conjunction with the landscape plan.

With the implementation of Mitigation Measure 3.5-1 the impacts of the project will remain *significant but unavoidable*.

Chapter 4
REFERENCES

City of Oakland. March 14, 2011. Letter to Bill Kirkpatrick regarding Estates Reservoir Project.

Klinger, Lee. January 29, 2013. Estates Reservoir Tree Removal Assessment.

Mulchaey, Bert. August 26, 2013. Email to Timothy Fuette, regarding Estates Reservoir Plant Survey.

Royston Hanamoto Alley and Abey, Landscape Architects and Planners. August 2010. Tree Assessment and Recommendations, prepared for East Bay Municipal Utility District.

Royston Hanamoto Alley and Abey, Landscape Architects and Planners. March 2013. Estates Reservoir Site Visit with City of Oakland Arborist, prepared for East Bay Municipal Utility District.

Royston Hanamoto Alley and Abey, Landscape Architects and Planners. March 2013. Conference Call with Dr. Lee Klinger, prepared for East Bay Municipal Utility District.

Siegfried Engineering. May 31, 2011. Letter to Bill Kirkpatrick regarding Estates Reservoir Pedestrian Trail.

Appendix A

Mitigation Monitoring and Reporting Program for the Revised Estates Reservoir Replacement Project

REVISED ESTATES RESERVOIR REPLACEMENT
MITIGATION MONITORING AND REPORTING PROGRAM

This mitigation monitoring and reporting program includes all mitigation measures identified in the January 2010 EIR along with the new or revised measures identified in this Supplemental EIR. The attached table presents the MMRP for the Revised Project. A ~~strikethrough~~ text indicates that text has been deleted from the 2010 EIR. Text that has been added to the 2010 EIR is presented as underlined.

REVISED ESTATES RESERVOIR REPLACEMENT PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Impact being Mitigated	Timing Requirement	Responsibility for Implementation	Responsibility for Monitoring	Design Phase Check Box	Construction Phase Check Box	Post-Construction Phase Check Box
VISUAL QUALITY							
Measure 3.2-1: EBMUD will require the contractor to ensure that the construction site is clean by storing building materials and equipment within the proposed staging areas in the reservoir bowl, or in areas removed from public view, and by frequent removal of construction debris that is not to be reused on-site. Construction phasing shall be organized to minimize equipment storage on-site. The contractor will be required to screen construction activity from residences/properties immediately adjacent to the reservoir site. This privacy screening shall be sufficient to obstruct views into resident's properties from the construction area, and from residences into the construction site. Temporary privacy screening shall be removed once project construction is completed. <u>Removed trees will be chipped immediately upon removal. Woodchips will spread on site no thicker than 6 inches in any area. Any surplus chips shall be disposed of offsite.</u> EBMUD will also use temporary interpretive materials to explain the need for the Project during construction, in attractive and simple graphic displays. Temporary signage locations could include, but would not be limited to, areas near the Estates Reservoir entry, along Estates Drive and the residentially developed segments of the truck route. ~~Permanent interpretive materials at the reservoir site would include an overview of the history of the reservoir, description and visual of the Royston design and reference to where more detailed archive information is located, including a video of the active fountains and HALS style documentation. Permanent signage design will be finalized in the Project Design phase in conjunction with the landscape plan.~~ -*This section on interpretive materials has been moved to Cultural Resources.*	Project construction could generate visual impacts experienced in the short-term from nearby areas during construction.	During construction	EBMUD construction contractor	EBMUD Construction Inspector (CI) and Regulatory Compliance (RCO)	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____
Measure 3.2-2: A landscape plan for the Estates Reservoir Replacement Project will be prepared during the Design Phase that will be consistent with the RHAA Concept Design Process and Recommendations Report 2008, and ensure that areas disturbed by construction are re-graded and planted to result in landforms that are compatible with existing site topography and landscaping, as well as the neighborhood setting: ▪ Annual vegetation/tree pruning, consistent with City of Oakland Fire Department Fire Abatement Regulations, will continue to be implemented. ▪ EBMUD will coordinate with neighborhood representatives regarding the placement of new plantings to effect screening, and this input will be incorporated into the Final Landscape Plan. ▪ The contractor shall be required to warrant landscape plantings for one year after project completion. ▪ EBMUD will ensure that the contractor restores graded, disturbed areas to a natural-appearing landform. ▪ Site improvements will include aesthetic/architectural treatment where facilities are located near to, or are visible from, public trails and residences, namely: - Creating a new drainage feature with rocks and stones, around the reservoir valve pit at the base of the excavated basin. - Improving the existing trail on EBMUD property, along Estates Drive. - ~~Constructing a low, rustic, wooden fence along Estates Drive.~~ - Constructing a parking area for EBMUD equipment and staff vehicles in the valve pit. - Replacing the existing six foot high perimeter chain link fence with two inch black webbing with an eight-foot high fence with one-inch webbing, in the same color (black) and at the same location, except for a 130 foot length in the vicinity of the tight curve on Estates Drive, where it will be moved inward by about two feet.	Project construction could alter the site's appearance and long-term visual effects.	During construction Annually During Design phase After construction During construction Design and Construction Phase	EBMUD landscape contractor Maintenance (M) EBMUD Design/Planning General/Landscape contractor Contractor EBMUD Design /Contractor	EBMUD Construction Inspector and Regulatory Compliance Office Regulatory Compliance Office/Maintenance EBMUD Construction Phase Manager/Inspector Construction Inspector and Regulatory Compliance Office Construction Inspector Construction Inspector	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____

Mitigation Measures	Impact being Mitigated	Timing Requirement	Responsibility for Implementation	Responsibility for Monitoring	Design Phase Check Box	Construction Phase Check Box	Post-Construction Phase Check Box
Measure 3.2-4: Implement Measures 3.3-2, as detailed above.	Project construction could affect views from the surrounding area, including public roadways, public trails and open space and residential areas		EBMUD general and landscape contractor	EBMUD Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____
Measure 3.2-5: To the extent possible, EBMUD will ensure that stationary lighting used during nighttime construction (if required) is of limited duration and shielded and directed downward or oriented such that little or no light is directly visible from Estates Drive. No permanent nighttime lights will be constructed on the site.	Project construction could generate new sources of light and glare.	During construction	EBMUD contractor	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____
GEOLOGY, SOILS AND SEISMICITY							
Measure 3.3-1: During the design phase, EBMUD will perform geotechnical evaluations and if required, conduct site specific geotechnical investigation/exploration/testing to reduce or eliminate potential slope hazards. Design and construction specifications will incorporate the recommendations from the geotechnical evaluation for any slope stabilization, which may include some of, the following measures, although this list is not exclusive: ▪ Appropriate slope inclination ▪ Slope terracing ▪ Fill compaction ▪ Soil reinforcement ▪ Surface and subsurface drainage facilities ▪ Retaining walls ▪ Buttresses ▪ Erosion control measures - Sub drain system - Soil nails or anchors	New slopes associated with reservoir construction may be potentially unstable.	During Design Phase	EBMUD Materials Engineering and construction contractor	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____
Measure 3.3-2: During the design phase, EBMUD will perform a geotechnical evaluation and, if required, conduct site specific geotechnical investigations and evaluations to identify the potential for secondary ground failure hazards (i.e., seismically-induced settlement). The geotechnical evaluation will provide recommendations for applicable settlement mitigation measures to be incorporated in the design and construction specifications for the replacement tanks.	Facility damage or service interruptions resulting from strong ground shaking.	During Design Phase	EBMUD Materials Engineering	EBMUD Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____

REVISED ESTATES RESERVOIR REPLACEMENT PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Impact being Mitigated	Timing Requirement	Responsibility for Implementation	Responsibility for Monitoring	Design Phase Check Box	Construction Phase Check Box	Post-Construction Phase Check Box
Measure 3.3-3a: The tank structures will be supported by 1) select engineering fill founded on bedrock after removal of the soils above the bedrock, or 2) cast-in-place concrete pier foundations obtaining vertical support from the bedrock without removing the overlying soils. These measures will reduce potential settlement to within acceptable limits. **Measure 3.3-3b:** EBMUD will include in the contract specifications that any fill will be selected, placed, compacted, and inspected in accordance with plans and specifications prepared by a licensed professional engineer.	Facility damage resulting from settlement or uplift caused by compressible soils.	During construction During Design	EBMUD construction contractor EBMUD Design	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____
Measure 3.3-4: Grading for the reservoir construction will be performed in compliance with the Stormwater Pollution Prevention Plan to control/manage soil erosion and run-off. During grading construction, sprinkling will be performed regularly to control dust at the site. Measures for winterization, including hydro-mulching, straw bale installation, and/or other measures will be performed to minimize soil erosion during the rainy seasons.	Exposure of soils to erosion after removal of the concrete lining within the existing reservoir basin.	During construction	EBMUD construction contractor.	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____
Measure 3.3-5: Due to limited construction working space at the site, stockpiling of imported or locally excavated materials will be minimized. In general, the imported materials will be placed directly at the intended fill areas and the locally excavated materials not proposed for re-use on-site will be off hauled shortly after excavation.	Stockpiled materials from import or excavation of the existing dam could cause localized instability of slopes.	During construction	EBMUD construction contractor.	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____
BIOLOGICAL RESOURCES							
Measure 3. 4-1: EBMUD will develop and implement a five-year tree monitoring program for any protected tress lost or damaged by project construction. Appropriate performance standards may include, but are not limited to a not less than 75 percent survival rate of replacement tree plantings and a requirement that trees be able to be self-sustaining at the end of five years. EBMUD will replace all removed protected trees in accordance with the mitigations set forth in the Oakland Tree Ordinance. ▪ Replacement trees shall not be required for the removal of nonnative species, or for the removal of trees for the benefit of the remaining trees. ▪ Replacement tree species shall consist of Sequoia sempervirens (Coast Redwood), Quercus agrifolia (Coast Live Oak), Ancutus merciesii (Madrone), Aesculus californica (California Buckeye) or Umbelluiana californica (California Bay Laurel). ▪ Replacement trees shall be planted on the site with fifteen (15) gallon size trees and at least a 3:1 replacement ratio.	Loss of or damage to protected trees.	For five years after construction	EBMUD Maintenance.	EBMUD Asset Management and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____
Measure 3.4-2: ▪ EBMUD will avoid disturbing active nests of special-status nesting birds by performing preconstruction surveys and creating no-disturbance buffers. If construction activities (i.e., ground clearing and grading, including removal of trees or shrubs) are scheduled to occur during the non-breeding season (September 1 through January 31), no mitigation is required.	Disturbances to nesting raptors or special status nesting birds.	Prior to construction	EBMUD Biologist	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by	Completed by _____ Date _____	Completed by _____ Date _____

Mitigation Measures	Impact being Mitigated	Timing Requirement	Responsibility for Implementation	Responsibility for Monitoring	Design Phase Check Box	Construction Phase Check Box	Post-Construction Phase Check Box
▪ If construction activities are scheduled to occur during the breeding season (February 1 through August 31), EBMUD will implement the following measures to avoid potential adverse effects on nesting raptors and other special-status birds: ▪ EBMUD will retain a qualified wildlife biologist to conduct preconstruction surveys of all potential nesting habitat within 500 feet of construction activities where access is available. ▪ If active nests are found during preconstruction surveys, EBMUD will create a no- disturbance buffer (acceptable in size to the CDFG) around active raptor nests and nests of other special-status birds during the breeding season, or until it is determined that all young have fledged. The size of these buffer zones and types of construction activities restricted in these areas will be based on existing noise and human disturbance levels at the Estates Reservoir project site. Nests initiated during construction are presumed to be unaffected by the activities occurring, and no buffer would be necessary. ▪ If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further mitigation is required. Trees and shrubs within the construction footprint that have been determined to be unoccupied by special-status birds or that are located outside the no-disturbance buffer for active nests may be removed.					_____ Date _____		
CULTURAL RESOURCES							
Measure 3.5-1: A Historic American Landscapes Survey Historic American Building Survey/Historic American Engineering Record style documentation of the Estates Reservoir roof designed by Robert Royston will be prepared. The level of documentation will be similar to that described in Historic American Landscapes Survey Historic American Building Survey documentation level II, which includes at a minimum measured drawings such as as-builts or original design plans, historic photographs, if available, and current large-format photographs that record significant landscape and architectural features, including the physical context of the resource, of significant architectural design features, and a written history and description. The documentation will be submitted to the Oakland Heritage Alliance, the Oakland Historical Archives, the Oakland Cultural Heritage Survey staff within the Planning and Zoning Division of the City of Oakland, and the UC Berkeley Historical Archives. The intent is to reduce the adverse effect associated with loss of historical information; it will not prevent the physical loss of the resource and a significant and unavoidable impact will occur. <u>Permanent interpretive materials at the reservoir site would include an overview of the history of the reservoir, description and visual of the Royston design, and reference to where more detailed archive information is located, including a video of the active fountains and HALS style documentation. Permanent signage design will be finalized in the Project Design phase in conjunction with the landscape plan</u>. – *Relocated from Measure 3.2-1.*	Substantial adverse change to the historic significance of Estates Reservoir roof. Demolition of Estates Reservoir roof would permanently eliminate a historic resource recommended as eligible for listing on the California Register of Historic Resources.	During the Design phase and prior to construction.	EBMUD Planning and architectural historian	EBMUD Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____
Measure 3.5-2: If deposits of prehistoric or historic archeological materials are encountered during Project activities, all work within 25 feet of the discovery will be stopped and a qualified archeologist meeting federal criteria under 36 CFR 61 will be contacted to assess the deposit(s) and make recommendations. While deposits of prehistoric or historic archeological materials should be avoided by Project activities, if the deposits cannot be avoided, they will be evaluated for their	Substantial adverse changes to the significance of currently unknown historical or prehistorical resources, including unique archaeological resources.	During construction	EBMUD construction contractor and archeologist	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by	Completed by _____ Date _____	Completed by _____ Date _____

Mitigation Measures	Impact being Mitigated	Timing Requirement	Responsibility for Implementation	Responsibility for Monitoring	Design Phase Check Box	Construction Phase Check Box	Post-Construction Phase Check Box
potential historic significance. If the deposits are recommended to be non-significant, avoidance is not necessary. If the deposits are determined to be potentially significant, they will be avoided. If avoidance is not feasible, Project impacts will be mitigated in accordance with the recommendations of the evaluating archaeologist and CEQA Guidelines §15126.4 (b)(3)(C), which require development and implementation of a data recovery plan that would include recommendations for the treatment of the discovered archaeological materials. The data recovery plan will be submitted to EBMUD for review and approval. Upon approval and completion of the data recovery program, Project construction activity within the area of the find may resume, and the archaeologist will prepare a report documenting the methods and findings. The report will be submitted to EBMUD. Once the report is reviewed and approved by EBMUD, a copy of the report will be submitted to the Northwest Information Center.					_____ Date _____		
Measure 3.5-3. Section 7050.5(b) of the California Health and Safety Code will be implemented in the event that human remains, or possible human remains, are located during project related construction excavation**.** In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further disturbance of the site or any nearby area suspected to overlie adjacent remains until the County Coroner has investigated the circumstances, manner and cause of death in accordance with Chapter 10 of the Government Code and determined that the remains are not subject to the provisions of Section 27492 of the Government Code, and the recommendations concerning treatment and disposition of the remains have been communicated to the person responsible for the excavation, per Section 5097.98 of the Public Resources Code. If the remains are recognized as of Native American origin, the County Corner shall contact the Native American Heritage Commission within 24 hours, to provide guidance as to ultimate disposition.	Damage to previously unidentified human remains.	During construction	EBMUD construction contractor and archeologist	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____
TRAFFIC AND TRAFFIC							
Measure 3.6-1: EBMUD contract specifications shall require preparation and implementation of a Traffic Management Plan, and collaboration with the City of Oakland and California Highway patrol, as appropriate. The Plan will include the following elements: ▪ The work hours for each phase of project construction, the process for notifying residents of construction activity, and the means for people to report construction-related problems. ▪ A haul route, based on the route shown on Figure 3.6-5 that shall be provided to all trucks serving the site during the construction period. Should the recommended one-way truck access route not be implemented and trucks routed to Estates Drive south of the project site, there is sufficient capacity on Estates Drive south of the project site to accommodate additional traffic volumes associated with the peak construction period. However, a flagger would be required at the Estates Drive/Park Boulevard intersection to direct traffic though that intersection, with an alternative routing plan. ▪ Flaggers at the Project site entrance and at the curve on Estates Drive immediately west of the Project site to improve traffic safety during regular construction hours. ▪ Flaggers at the Moraga Avenue/Estates Drive intersection during regular construction hours. ▪ A peak-period flagger (7:00am to 9:00am, and 4:00pm to 6:00pm) at the La Salle Avenue/Moraga Avenue/ Mountain Boulevard intersection. ▪ Control and monitoring of construction vehicle movements through the enforcement of standard construction specifications by EBMUD on-site inspectors. Inbound trucks should be given priority over outbound trucks to minimize truck queuing on local streets. ▪ Signage on Estates Drive and La Salle Avenue warning motorists of the	The construction phase of the proposed Project would generate short-term vehicle trips by trucks and construction workers and would represent an increased traffic load on the roadways surrounding the Project site.	Prior to construction	EBMUD construction contractor and EBMUD construction inspector	EBMUD Design Phase Manager	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____

Mitigation Measures	Impact being Mitigated	Timing Requirement	Responsibility for Implementation	Responsibility for Monitoring	Design Phase Check Box	Construction Phase Check Box	Post-Construction Phase Check Box
construction work ahead. ▪ Unimpeded through access to the Montclair Pumping Plant site at all times during reservoir construction. ▪ The Traffic Management Plan shall be enforced by EBMUD construction inspectors.							
Measure 3.6-1a: Implement Mitigation Measure 3.6-1. As noted above.	The addition of traffic during the construction phase of The project would exacerbate an existing deficiency on La Salle Avenue, west of Trafalgar Place. Based on the CEQA significance criteria, this is considered a significant impact.	During construction	EBMUD construction contractor and traffic engineer	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____
Measure 3.6-1b: Implement Mitigation Measure 3.6-1. As noted above.	The addition of traffic during the construction phase of the project would exacerbate an existing deficiency at the SR 13/Moraga Avenue/Estates Drive intersection. Construction traffic would also increase traffic on Estates Drive in locations where the roadway is not wide enough to support two-way travel, potentially creating a traffic hazard. An inadequate turning radius at the La Salle Avenue/Moraga Avenue intersection does not allow conflict free (from opposing vehicles) truck turning movements. Construction related traffic could create potential conflicts between transit buses, pedestrians, and bicyclists. Based on the significance criteria, these impacts are considered significant.	During construction	EBMUD construction contractor and traffic engineer	Construction Inspector and EBMUD Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____
Measure 3.6-2: EBMUD shall provide designated on-site parking areas to accommodate all Project-related parking demand. In the earlier construction phases when there may not be sufficient space on-site to accommodate all parking demand, EBMUD's contractor will secure private off-site parking and provide shuttles to bring workers to and from the Project site.	Project construction would generate a demand for parking spaces to accommodate worker vehicles	During construction	EBMUD construction contractor and traffic engineer	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____

Mitigation Measures	Impact being Mitigated	Timing Requirement	Responsibility for Implementation	Responsibility for Monitoring	Design Phase Check Box	Construction Phase Check Box	Post-Construction Phase Check Box
Measure 3.6-3: EBMUD contract documents will require that road conditions shall be documented for all routes that would be used by construction vehicles both before and after Project construction.	Project construction would cause increased wear-and-tear on roadways used by construction vehicles to access the Project site.	Prior to and after construction	EBMUD construction contractor and traffic engineer	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____
AIR QUALITY							
Measure 3.7-2a: The following diesel control measures will be incorporated by the District into contract specifications: ▪ To minimize potential diesel odor impacts on nearby receptors (pursuant to BAAQMD Regulation 1, Rule 301, Nuisance), construction equipment will be properly tuned. A schedule of tune-ups will be developed and performed for all equipment operating within the project area, particularly for haul and delivery trucks. A log of required tune-ups will be maintained and a copy of the log will be submitted to EBMUD for review every 2,000 service hours. ▪ Fixed temporary sources of air emissions (such as portable pumps, compressors, generators, etc.) will be electrically powered unless the contractor submits documentation and receives approval from EBMUD that the use of such equipment is not practical, feasible, or available (generally contingent upon power line proximity, capacity, and accessibility). California ultra-low sulfur diesel fuel with maximum sulfur content of 15 ppm by weight, or an approved alternative fuel, will be used for onsite fixed equipment not using line power. If sufficient power line capacity is available, EBMUD will endeavor to rent (via the contractor) an electrically-powered concrete crusher in lieu of a diesel powered unit. This will eliminate emissions associated with combustion of approximately 1,800 gallons of diesel fuel. ▪ To minimize diesel emission impacts, construction contracts will require off-road compression ignition equipment operators to reduce unnecessary idling with a two (2) minute time limit. ▪ On-road and off-road material hauling vehicles will shut off engines while queuing for loading and unloading for time periods longer that two (2) minutes. ▪ Off-road diesel equipment will be fitted with verified diesel emission control systems (e.g., diesel oxidation catalysts) to the extent reasonably and economically feasible. ▪ Utilize alternative fuel equipment (i.e., compressed or liquefied natural gas, biodiesel, electric) to the extent reasonably and economically feasible. **Measure 3.7-2b:** To control emissions of particulate matter, the Project shall implement the following fugitive dust and particulate matter emissions control measures suggested by the BAAQMD CEQA Guidelines as applicable (BAAQMD 1999). **Basic Dust Control Measures** The following controls will be implemented at all construction sites: ▪ Water and/or coarse rock all active construction areas as necessary and indicated by soil and air conditions; ▪ Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard; ▪ Pave or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites; ▪ Sweep daily (with water sweepers) all paved access roads, parking areas and	The Project would have the potential to contribute to the already existing violation of air quality standards in the Project vicinity for PM_{10} and $PM_{2.5}$, primarily through fugitive dust emissions of PM_{10} during demolition and construction, and from PM_{10} and $PM_{2.5}$ emissions from diesel-powered construction equipment.	During construction	EBMUD construction contractor	EBMUD CI and RCO	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____

Mitigation Measures	Impact being Mitigated	Timing Requirement	Responsibility for Implementation	Responsibility for Monitoring	Design Phase Check Box	Construction Phase Check Box	Post-Construction Phase Check Box
staging areas at construction sites; and ▪ Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets. ▪ Suspend excavation and grading activity when sustained winds make reasonable dust control difficult to implement, e.g., for winds over 25 miles per hour. ▪ Limit the area subject to excavation, grading, and other construction activity at any one time, as feasible.							
Particulate Matter Emissions Control Measures In addition, the Project shall implement the following measures to reduce particulate matter emissions from diesel exhaust: ▪ Grid power shall be used instead of diesel generators where it is feasible to connect to grid power (generally contingent upon power line proximity, capacity, and accessibility); ▪ The Project specifications shall include 13 CCR Sections 2480 and 2485, which limit the idling of all diesel-fueled commercial vehicles (weighing over 10,000 pounds, both California- or non-California-based trucks) to 30 seconds at a school or 5 minutes at any location. In addition, the use of diesel auxiliary power systems and main engines shall be limited to 5 minutes when within 100 feet of homes or schools while the driver is resting; ▪ The Project specifications shall include 17 CCR Section 93115, Airborne Toxic Control Measure for Stationary Compression Ignition Engines, which specifies fuel and fuel additive requirements; emission standards for operation of any stationary, diesel-fueled, compression-ignition engines; and operation restrictions within 500 feet of school grounds when school is in session; ▪ A schedule of low-emissions tune-ups shall be developed and such tune-ups shall be performed on all equipment, particularly for haul and delivery trucks; and ▪ Low-sulfur (≤ 15 ppmw S) fuels shall be used in all stationary and mobile equipment.					Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____
Measure 3.7-3: Implement Measure 3.7-2a and 2b, as noted above.	The proposed Project would result in an incremental contribution to a cumulative effect for several criteria pollutants for which the San Francisco Bay region is in nonattainment under an applicable federal or state ambient air quality standard**.**				Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____
Measure 3.7-4: Implement Measure 3.7-2a and 2b, as noted above.	The proposed Project would not expose sensitive receptors to substantial pollutant concentrations.				Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____

Mitigation Measures	Impact being Mitigated	Timing Requirement	Responsibility for Implementation	Responsibility for Monitoring	Design Phase Check Box	Construction Phase Check Box	Post-Construction Phase Check Box
GREENHOUSE GASES							
Less Than Significant. Mitigation Measure 3.8-1: Since the half-life of carbon dioxide is approximately 100 years (USEPA 2008), the effects of greenhouse gases affect global climate change over a relatively long time frame. Thus, the 716 metric tonnes of carbon dioxide equivalents emitted by Project demolition and construction activities would remain in the atmosphere for years. Therefore, mitigation measures are recommended to further minimize the potential for any long-term effects of construction emissions on global climate change. EBMUD and its contractors shall implement the following measures to reduce greenhouse gas emissions from fuel combustion: ▪ On road and off-road vehicle tire pressures shall be maintained to manufacturer specifications. Tires shall be checked and re-inflated at regular intervals; ▪ Construction equipment engines shall be maintained to manufacturer's specifications; ▪ Demolition debris shall be recycled for reuse to the extent feasible (excluding wood treated with preservatives). Implementation of Mitigation Measure 3.8-1 (above), in addition to diesel exhaust control measures as described under Air Quality Impact 3.7-2 (Air Quality section 3.7), would reduce and sequester greenhouse gas emissions. Additionally, given that other development projects would be required to implement mitigation measures for significant impacts under CEQA, the overall cumulative greenhouse gas impacts would be further reduced.	The concern is whether the Estates Reservoir Replacement Project, primarily through construction related emissions, individually would impede the state's ability to meet its 2020 greenhouse gas emission reduction goal.	During construction	EBMUD construction contractor	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____ Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____ Completed by _____ Date _____	Completed by _____ Date _____ Completed by _____ Date _____
NOISE AND VIBRATION							
Measure 3.9-1a: Construction at the Estates Reservoir site will be restricted to the weekday hours of operation consistent with the City of Oakland's Noise Ordinance (as listed in Table 3.9-3), as feasible, except during critical water service outages or other emergencies and special situations. Noise-generating activities greater than 90 dBA (impact construction) shall be limited to between 8:00 a.m. and 4:00 p.m., Monday through Friday, Removal of the reservoir lining and columns is expected to take a maximum of 9 weeks, but may be of shorter duration if tasks are overlapping. Any construction activity proposed for special activities outside of the standard hours of 7:00 am to 7:00 pm (Monday through Friday) must be approved by EBMUD.	Construction of the Estates Reservoir Replacement Project could generate intermittent and temporary noise above existing ambient levels.	During construction	EBMUD construction contractor and noise contractor	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____
Measure 3.9-1b: Measures that would be implemented to reduce noise levels during construction include, but are not limited to, the following: ▪ Truck operations (haul trucks and concrete delivery trucks) will be limited to the daytime hours listed in the Project Description (7:00 a.m.-7:00 p.m.). ▪ Best available noise control techniques (including mufflers, intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) will be used for all equipment and trucks, as necessary. ▪ The noisiest phases of construction (such as concrete breaking or concrete grinding) shall be time limited and not extended over several months. ▪ Stationary noise sources will be located as far from sensitive receptors as possible. If they must be located near receptors, adequate muffling (with enclosures) will be used. Enclosure opening or venting will face away from sensitive receptors. Enclosures will be designed by a registered engineer regularly involved in noise control analysis and design.		During construction	EBMUD construction contractor and noise contractor	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____

Mitigation Measures	Impact being Mitigated	Timing Requirement	Responsibility for Implementation	Responsibility for Monitoring	Design Phase Check Box	Construction Phase Check Box	Post-Construction Phase Check Box
▪ Material stockpiles as well as maintenance/equipment staging and parking areas (all on–site) will be located as far as practicable from residential receptors. ▪ An EBMUD contact person will be designated for responding to construction-related issues, including noise. The phone number of the liaison will be conspicuously posted at construction areas, on all advanced notifications, and on the EBMUD Project website. This person will take steps to resolve complaints, including coordinating periodic noise monitoring, if necessary. **Measure 3.9-1c**: EBMUD will make a reasonable effort to limit operation of impact construction equipment during the hours of 8:00 a.m.- 4:00p.m. by implementing the following measures for noise generating activities that may be greater than 90-dBA, including hoe rams, concrete recycling (concrete breakup, pulverizing, rear separation, crushing) and concrete pumping: ▪ If impact equipment (e.g., jack hammers, pavement breakers, and rock drills) is used during project construction, hydraulically or electric-powered equipment will be used wherever feasible to avoid the noise associated with compressed-air exhaust from pneumatically powered tools. However, where use of pneumatically powered tools is unavoidable, an exhaust muffler on the compressed-air exhaust will be used (a muffler can lower noise levels from the exhaust by up to about 10 dB). External jackets on the tools themselves will be used, where feasible, which could achieve a reduction of 5 dB. Quieter procedures, such as drilling rather than impact equipment, will be used whenever feasible. ▪ Erect temporary noise barriers or noise control blankets around the construction site, particularly along on sites adjacent to residential buildings. ▪ Utilize noise control blankets around the major noise sources to reduce noise emission from the site. ▪ Evaluate the feasibility of noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings by the use of sound blankets for example. ▪ Limit the noisiest phases of construction to 10 working days at a time, where feasible. ▪ Notify neighbors/occupants within 300 feet of project construction at least thirty days in advance of extreme noise generating activities about the estimated duration of the activity. The effectiveness of noise attenuation measures shall be monitored by taking noise measurements during noise intensive activities of 90 dBA or greater over a 9 week period. However, it should be noted that although the goal is to limit construction noise to the minimal feasible duration and to reduce noise levels to minimize disturbance to sensitive receptors (adjacent residents), mitigated construction noise could still cause occasional, intermittent or periodic disturbance at the closest residential receptors. In recognition of this possibility and based on the significance criteria, construction noise impacts are therefore considered significant and unavoidable, even with mitigation.							
Measure 3.9-2: The estimated maximum hourly noise levels would not exceed the 70-dBA speech interference criterion. Therefore short-term noise increases due to project related trucks would be less than significant. Implementation of Mitigation Measure 3.9-1.b (above) would also ensure that truck traffic noise would be less than significant.	Construction of the Estates Reservoir Replacement Project could increase noise levels along truck haul routes.	During construction	EBMUD construction contractor	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____

REVISED ESTATES RESERVOIR REPLACEMENT PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Impact being Mitigated	Timing Requirement	Responsibility for Implementation	Responsibility for Monitoring	Design Phase Check Box	Construction Phase Check Box	Post-Construction Phase Check Box
Measure 3.9-3: To prevent cosmetic or structural damage to adjacent or nearby structures, EBMUD will incorporate into contract specifications restrictions on construction whereby surface vibration will be limited to no more than 0.5 in/sec PPV, measured at the nearest residential or other sensitive structure. Implementation of Mitigation Measure 3.9-1c (above) will also ensure that impacts are reduced to a less than significant level. In the unlikely and remote event that the project is demonstrated to have caused any damage to residences, compensation shall be provided to repair any damage caused by the construction. With homeowner permission, EBMUD will conduct pre-construction surveys of homes, sensitive structures and other areas of concern within the area of potential effects due to concrete demolition. During construction, a Project Liaison will be assigned to facilitate communication and expedite claims processing within the legal framework available to all parties.	Construction of the Estates Reservoir Replacement Project could cause vibration that could disturb local residents and cause cosmetic damage to buildings and structures.	During construction	EBMUD construction contractor	EBMUD Construction Inspector and Regulatory Compliance	Spec # _____ Drawing # _____ Completed by _____ Date _____	Completed by _____ Date _____	Completed by _____ Date _____