Volume III

CENTRAL RESERVOIR REPLACEMENT PROJECT

Final Environmental Impact Report
SCH #2018042078

Prepared for
East Bay Municipal Utility District

March 2021

EAST BAY MUNICIPAL UTILITY DISTRICT

ESA

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CHAPTER 7
Introduction to Final EIR

7.1 Project Background

The East Bay Municipal Utility District (EBMUD), as the California Environmental Quality Act (CEQA) lead agency, prepared a Draft Environmental Impact Report (Draft EIR) for the Central Reservoir Replacement Project (Project). The Draft EIR was developed to provide the public and responsible and trustee agencies reviewing the Project with an analysis of the potential effects on the local and regional environment associated with construction and operation of the Project.

Central Reservoir is a 154-million-gallon (MG) open-cut reservoir that was constructed in 1910. The Project includes removal of vegetation and demolition of the existing reservoir, roof, lining, and material storage building, followed by removal of a portion of the reservoir's main embankment and construction of a reinforced tank foundation system, three 17-MG concrete tanks, a new rate control station, a valve structure, service road and site paving, a bioretention area, and security fencing all within the existing reservoir property. The Project site design, with community input, incorporates existing landscaping and a mix of earthen berms, trees, and shrubs to screen the tanks and emphasize the natural setting at the perimeter of the site while balancing earthwork. The Project may also include an access driveway to connect the Redwood Day School parking area to Ardley Avenue.

7.2 Draft EIR Public Review Process

On November 14, 2019, EBMUD, as the CEQA lead agency, released the Draft EIR for the Project for public review and filed a Notice of Completion (NOC) with the Governor's Office of Planning and Research to begin a 60-day public review period (Public Resources Code Section 21161). Concurrent with issuance of the NOC, the Draft EIR was made available to responsible and trustee agencies, other affected agencies, and interested parties, as well as all parties requesting a copy of the Draft EIR in accordance with Public Resources Code Section 21092(b)(3). During the public review period, the Draft EIR was available for review at the following locations:

East Bay Municipal Utility District
375 Eleventh Street
Oakland, CA 94607

Oakland Public Library, Dimond Branch
3565 Fruitvale Avenue
Oakland, CA 94602

Public meetings were held on December 4, 2019 and January 7, 2020 at Manzanita Community School in Oakland to receive comments on the Draft EIR. The 60-day public review period ended on January 13, 2020.

7.3 Purpose of the Final EIR

This Responses to Comments document has been prepared to accompany the Draft EIR and is being issued by EBMUD as part of the Final EIR for the Project. CEQA requires lead agencies that have completed a Draft EIR to consult with and request comments on the environmental document from responsible, trustee, and other agencies with jurisdiction over the resources that could be affected by the Project. The public must also be afforded the opportunity to comment on the Draft EIR. This Final EIR has been prepared to respond to comments on the Draft EIR made by agencies and members of the public.

The Final EIR for the Project consists of the Draft EIR and appendices (Volumes I and II) and this document containing Comment Letters and Responses to Comments, including the updated Mitigation Monitoring and Reporting Program (Volume III). The EBMUD Board of Directors will consider the Final EIR before deciding whether to approve the Project.

7.4 CEQA Requirements

EBMUD has prepared this document pursuant to Section 15132 of the *CEQA Guidelines*, which specifies that "*The Final EIR shall consist of:*

a) The Draft EIR or a revision of the draft.

b) Comments and recommendations received on the Draft EIR either verbatim or in summary.

c) A list of persons, organizations, and public agencies commenting on the Draft EIR.

d) The responses of the Lead Agency to significant environmental points raised in the review and consultation process.

e) *Any other information added by the Lead Agency.*"

7.5 Consideration of Recirculation

If significant new information is added to an EIR after public review, the lead agency is required to recirculate the revised document (*CEQA Guidelines* Section 15088.5). Significant new information includes, for example, a new significant environmental impact or a substantial increase in the severity of an impact. New information is not considered significant unless the document is changed in a way that deprives the public of a meaningful opportunity to comment on a substantial adverse environmental effect of

the Project or comment on feasible mitigation that the proponent has declined to implement.

No new impacts or substantial increases in the severity of impacts have been identified as a result of information presented in the comments on the Draft EIR for the Project. Recirculation of the Draft EIR was thus not deemed to be necessary.

7.6 Future Steps in Project Approval

The Draft EIR was circulated for review, and opportunities for public and agency review and comments were made available in accordance with CEQA. The Final EIR is being made available to commenters for a minimum 10-day period before its consideration for certification.

The EBMUD Board of Directors will consider Final EIR certification and Project approval at the regularly scheduled Board Meeting on April 13, 2021. Due to COVID-19 and in accordance with Alameda County Health Orders and Governor's Executive Order N-29-20 (issued March 17, 2020, and in which suspends portions of the Brown Act), EBMUD Board meetings will be conducted via teleconference, videoconference, or both. Links to view and participate in the EBMUD Board meeting are available at https://www.ebmud.com/index.php/about-us/board-directors/board-meetings.

7.7 Organization of this Document

The Final EIR consists of the Draft EIR and appendices (Volumes I and II) and Comment Letters and Responses to Comments, along with the updated Mitigation Monitoring and Reporting Program (Volume III).

This document is Volume III of the EIR for the Project, which contains four chapters: Chapter 7 is the introduction to the Final EIR, Chapter 8 presents the responses to comments on the Draft EIR, Chapter 9 contains the complete comments, Chapter 10 shows revisions to the Draft EIR, and Chapter 11 contains the Final EBMUD Practices and Procedures Monitoring and Reporting Plan and the Mitigation Monitoring and Reporting Program.

Each comment received is listed in Table 7-1 and identified by comment title, comment author, and date. Submittals include letters, emails, and materials provided at the December 4, 2019 and January 7, 2020 public meetings on the Draft EIR. The full text of all written comments is included in Chapter 9, following the responses to comments. Each submittal is identified by an acronym of the agency or organization, or last name of the individual commenter (as shown in Table 7-1), and each comment is identified by a comment number in the margin; responses use the same numbering system. For example, Comment 1 in the comment letter submitted by the California Department of Transportation (Caltrans) is designated Comment Caltrans-1 and is addressed in Response to Comment Caltrans-1. In addition, a global response has been prepared to address several comments and questions about impacts related to hazardous materials

management and air quality during the demolition of the existing reservoir (refer to Section 8.1).

In addition to the written comments received by EBMUD, staff noted questions and comments at the December 4, 2019 and January 7, 2020 public meetings for the Project, and responses are provided in Section 8.5.

TABLE 7-1
LIST OF COMMENTERS

Comment Title	Comment Author	Date
Agency Comments		
Caltrans	California Department of Transportation	December 30, 2019
DTSC	Department of Toxic Substances Control	January 13, 2020
Organization Comments		
RDS	Redwood Day School	January 13, 2020
Hays	Deann Hays	December 6, 2019
Individual Comments		
Aguilar	Jeanette Aguilar	January 13, 2020
Bellman	Phil Bellman	December 5, 2019
Bostwick	Paul Bostwick	January 5, 2020
Ferracane	Christina Ferracane	December 6, 2019
Goodman	Jenaver Goodman	January 12, 2020
Lemus	Lisa Lemus	November 23, 2019
Maguire	Joycelyn Maguire	November 21, 2019
Mays.1	Adam Mays	December 5, 2019
Mays.2	Adam Mays	December 12, 2019
Oliver.M	Meredith Oliver	January 12, 2020
Oliver.P	Patrick Oliver	January 12, 2020
Romero	Juan Romero	December 10, 2019
Steiger.1	Shonette Marie Steiger	January 13, 2020
Steiger.2	Shonette Marie Steiger	January 13, 2020
Tullock	Cristel Tullock	January 13, 2020
Public Meeting Comments		
PM1	Public Meeting #1	December 4, 2019
PM2	Public Meeting #2	January 7, 2020

CHAPTER 8
Responses to Comments

8.1 Global Responses

8.1.1 Global Response 1 – Hazardous Materials and Air Quality

Some commenters expressed concern about the handling of hazardous materials and impacts to air quality during Project demolition and construction. In response to this concern, EBMUD contracted with an independent consultant with expertise in asbestos abatement to review previous encapsulation activities at the Central Reservoir site and to assist EBMUD in developing Project-specific steps to best implement its asbestos abatement standard practices and procedures and to describe in greater detail the protection of worker and public safety during roof demolition and asbestos handling and related earth moving activities for the Project. Descriptions of the Project-specific steps to implement EBMUD standard practices and procedures that relate to asbestos (as well as air sampling and soil sampling and testing) have been added to the Project Description and are presented in Section 10.2 of Chapter 10, *Draft EIR Revisions*. This Global Response incorporates input from EBMUD's independent consultant (Appendix L of this document) and provides additional information about the handling of hazardous materials and air quality during Project demolition and construction to address the comments received on the Draft EIR. This information, typically developed after completion of CEQA documentation and later in the design process, clarifies and amplifies discussions related to hazardous materials and air quality presented in the Draft EIR, but does not alter the Draft EIR's conclusions with respect to impact significance or severity regarding these topics.

Hazardous Material Removal Procedures

Some commenters asked about measures that would be taken to protect the public during hazardous materials removal, which includes the asbestos in the Central Reservoir transite roof, the PCBs in the Central Reservoir lining, and the lead-containing paint on the Materials Storage Building. Hazardous material removal procedures are described in Draft EIR Section 3.8 (Hazards and Hazardous Materials), pages 3.8-9 to 3.8-20. Specific hazardous material removal techniques were also discussed at the January 7, 2020 Public Meeting and the presentation slides are available on the EBMUD Project Website (www.ebmud.com/central).

As described in Draft EIR Section 3.8 (Hazards and Hazardous Materials), hazardous material removal would generally include securing the demolition area to prevent unauthorized entry, removing the reservoir materials in pieces where possible to minimize the generation of dust, wetting, misting, and/or containment of the materials being demolished to control and prevent dust from leaving the site, and covering all trucks transporting waste materials to recycling and disposal facilities to prevent dust from leaving trucks.

The specific hazardous material removal techniques to be used for the Project have not been determined at this time. As described in Draft EIR Sections 3.2.3 (Air Quality) and 3.8.3 (Hazards and Hazardous Materials), prior to demolition, the contractor would submit detailed (i.e., Project-specific and site-specific) plans of the procedures to address hazardous material removal and dust control. The plans would include the location and layout of containment and decontamination areas, the sequencing of work, the equipment to be used, the handling of materials, a disposal plan including the location of approved disposal site(s), and a detailed description of the methods to be employed to control pollution and to monitor and prevent dust and particulate matter from leaving the site. Possible techniques to prevent dust from leaving the site during demolition that would be described in detail in the plans submitted to EBMUD may include watering/misting, removal from beneath, full containment, partial (modular) containment, encapsulation via a liquid binding product or by wrapping each panel in visqueen plastic. These are just examples and the technique chosen would ultimately be based on the current state of the art for asbestos transite panel removal to prevent particulates from becoming airborne.

The specific requirements for containment employed in a given situation vary based on the nature of the hazard present and the exposure pathway[1], and often there is more than one option in how containment can be achieved. For example, the reservoir's asbestos roofing panels may be disassembled and wrapped up in plastic sheeting prior to removal from the site, which may not require tenting because the panels would not be broken or cut which would eliminate the opportunity for asbestos to become friable[2] and airborne. Similarly, if the paint on the Material Storage Building contains lead, the building could be disassembled into pieces and wrapped in plastic sheeting or contained using other methods.

As described in Draft EIR Section 3.2 (Air Quality) and in revisions to Section 3.8 (Hazards and Hazardous Materials; refer to Section 10.2 of Chapter 10, *Draft EIR Revisions*) and in accordance with the Dust Control and Monitoring Plan, dust would be controlled and prevented from leaving the Project site, which would ensure airborne hazardous materials do not leave the site. As part of the Dust Control and Monitoring Plan, the contractor would be required to implement all necessary dust control measures including the following: water all exposed surfaces with potential to generate dust at least twice daily or cover with coarse rock; water and/or cover soil stockpiles daily; sweep access roads and

1 An exposure pathway refers to the way a person can come into contact with a hazardous substance. There are three basic exposure pathways: inhalation, ingestion, or direct contact. The degree or extent of exposure is determined by measuring the amount of the hazardous substance at the point of contact.

2 Friability is the tendency for asbestos containing materials to break down, chip or crumble under pressure or as a result of abrasion.

public roads adjacent to the site using a wet power vacuum; wash truck tires before leaving the site; water and/or cover stockpiles daily; limit vehicle speeds to 15 miles per hour (mph) on site; install wind breaks on the windward sides(s) of actively disturbed areas of construction; provide gravel or apply non-toxic soil stabilizers on all unpaved access roads, parking areas and staging areas; and suspend work when the average wind speed exceeds 20 mph.

As discussed in revisions to Section 3.8 (Hazards and Hazardous Materials; refer to Section 10.2 of Chapter 10, *Draft EIR Revisions*), EBMUD requires its contractors to prepare an Asbestos Abatement Plan of Action, which is a detailed plan showing the location and layout of decontamination areas, the sequencing of asbestos work, the interface of trades involved in the performance of work, the disposal plan including location of an approved disposal site(s), and a detailed description of the methods to be employed to control pollution. Based on additional recommendations from EBMUD's independent asbestos consultant (refer to the memorandum dated January 27, 2021 in Appendix L), an independent asbestos consultant would be contracted separately with EBMUD to prepare a Feasibility Assessment during the design phase. The Feasibility Assessment would identify all potential methods for removal of the transite roof panels and would select the best method that controls and contains asbestos based on the current condition of the transite roof panels and an understanding of the method used to encapsulate the existing roof. The potential methods that would be evaluated by the Feasibility Assessment include: wetting and misting, removal from beneath the reservoir roof, full containment (i.e., tenting), modular (partial) containment (i.e., tenting), encapsulation (i.e., application of coatings), and other options based on the current state of the art technology. A small-scale pilot study may need to be conducted to confirm that the selected removal approach can be effectively implemented by removing a small test section using the selected method and under full containment with negative air filtration. The independent asbestos consultant would also report to EBMUD during the removal of the transite roof and ensure the work is performed in a manner that is protective of workers and public health, compliant with regulatory requirements, and performed consistent with the selected method from the Feasibility Assessment.

Also as described in Section 10.2 of Chapter 10, *Draft EIR Revisions*, EBMUD would require soil sampling. Based on additional recommendations from EBMUD's independent asbestos consultant (refer to Appendix L), and described in Section 10.2 of Chapter 10, *Draft EIR Revisions*, sampling and testing the soil on site would occur twice: initially to ensure the soil is clean before any demolition and construction activities begin and again after hazardous material abatement measures have been completed and the Central Reservoir and Materials Storage Building have been demolished to ensure the soil is clean before any earthwork activities begin. In the event soil sampling and testing determines concentrations of hazardous materials exist that exceed regulatory thresholds, the contaminated soil would be removed, off hauled, and disposed of in accordance with federal, state, and local laws and regulations.

Hazardous Materials Transportation and Disposal

Commenters also asked how hazardous materials removed from the Project site would be transported and disposed. The transport and disposal of hazardous materials is described in Draft EIR Section 3.8 (Hazards and Hazardous Materials). As detailed in Draft EIR Chapter 2, *Project Description*, and Section 3.8, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 44, Section 1.3(C), which requires the construction contractor to submit a Construction and Demolition Waste Disposal Plan for EBMUD's review and approval. The Construction and Demolition Waste Disposal Plan would identify how the contractor would remove, handle, transport, and dispose of all materials in a safe, appropriate, and lawful manner. For example, the plan would describe how trucks handling hazardous waste would need to be covered to contain the material as it is transported through the surrounding neighborhood and beyond. In addition, hazardous materials must be transported from the Project area in accordance with Resource Conservation and Recovery Act (RCRA) and U.S. Department of Transportation regulations, managed in accordance with the Alameda County Department of Environmental Health regulations, and disposed of in accordance with RCRA and the California Code of Regulations (CCR) at a Class I or Class II licensed facility that is permitted to accept the waste. The construction contractor's compliance with existing regulations and programs is mandatory and would be monitored by EBMUD's construction inspector. In the event of an accidental hazardous materials release, EBMUD's site construction inspector would stop work, and EBMUD's regulatory compliance staff would evaluate the nature and extent of the release and develop a cleanup plan. EBMUD would direct the appropriate cleanup to remove the hazardous materials and test the underlying soil to ensure the hazardous materials have been removed.

Air Monitoring

Several commenters asked whether air monitoring would be conducted and by whom, and how EBMUD would know whether airborne particulates left the site. As discussed in Draft EIR Sections 3.2 (Air Quality), 3.8 (Hazards and Hazardous Materials), and Section 10.2 of Chapter 10, *Draft EIR Revisions*, EBMUD would require air monitoring to protect against contamination of soils, water, adjacent residences and properties, and the airborne release of hazardous materials and dusts (i.e., particulates), and to ensure compliance with BAAQMD regulations and EBMUD standard practices and procedures. To verify that airborne particulates do not leave the site, air monitoring would be conducted at the perimeter of the Project site.

As discussed in Section 10.2 of Chapter 10, *Draft EIR Revisions,* and Draft EIR Section 3.2 (Air Quality), both perimeter air monitoring for airborne asbestos and for airborne particulates would be performed by qualified personnel and overseen by EBMUD staff. A minimum of four particulate monitors would be placed both up- and down-wind of the active work area and airborne asbestos monitors would be placed on the east, west, north, and south property boundary. Air monitoring samples would be handled in accordance with all applicable specifications and guidance, and analyses performed in accordance

with the applicable United States Environmental Protection Agency (U.S. EPA) testing method(s). In the event that air monitoring indicates an increase in dust and particulates due to Project construction, EBMUD's construction inspector would stop work until the cause of the dust and particulates are identified and corrected.

Based on additional recommendations from EBMUD's independent asbestos consultant (refer to Appendix L) and described and evaluated in Section 10.2 of Chapter 10, *Draft EIR Revisions,* an independent hazardous materials consultant with oversight over the construction contractor would be contracted separately to prepare and implement the air monitoring program to ensure the air monitoring program is protective of worker and public health and is compliant with regulatory requirements. Sampling and testing for airborne asbestos fibers would take place daily, but requires laboratory analysis which can take up to 72 hours to obtain results. Because particulate air monitoring would detect asbestos fibers (among other particulates, such as dust), real-time monitors would be used for airborne particulate monitoring to provide real-time detection of particulates that could be an indication of asbestos fibers. This 2-part air monitoring program would be conducted during any dust generating activities, including removal of the transite roof, to provide immediate information as to the effectiveness of the transite roof removal and dust control methods. A study would be completed prior to any construction activities to establish activity specific real-time particulate air monitoring trigger levels (i.e., stop work, increase watering) that would be enforced on the contractor. These airborne particulate action levels and stop work thresholds would be established to ensure the perimeter airborne asbestos fiber action level is not exceeded based on a correlation between airborne particulate concentrations and potential asbestos fiber concentrations. In the event that real-time air monitoring indicates an increase in particulates that exceeds stop work thresholds, EBMUD's construction inspector would stop work until the cause of the particulates is identified and corrected before resuming work again.

At the request of the community, EBMUD would post bi-weekly air monitoring reports that would summarize the laboratory testing results for asbestos on the Project website. The air monitoring data is collected daily and analysis can take up to 72 hours. Following lab testing, the data would be reported to EBMUD, compiled, reformatted, and posted onto the Project website on a bi-weekly basis. These reports would show how the air monitoring asbestos results relate to applicable environmental and public health thresholds. EBMUD would also identify the name and contact information of a Project-specific community affairs representative tasked with promptly addressing questions and inquiries related to potential air quality issues.

Hazardous Material Oversight

Some commenters asked about hazardous material oversight and whether there would be an independent outside agency monitoring and regulating hazardous material removal or air emissions to ensure that all laws and regulations are followed. EBMUD as the lead CEQA agency and Project proponent is responsible for ensuring all laws, regulations, EBMUD Standard Construction Specifications and Procedures, and mitigation measures are implemented. Section 11 of the Final EIR, Final EBMUD Practices and Procedures Monitoring and Reporting Plan and Mitigation Monitoring and Reporting Program,

describes which entity would be responsible for implementing and monitoring each required compliance measure. Whereas many of the measures are wholly the responsibility of EBMUD, review and coordination with regulatory agencies would also be required.

The identification, removal, and disposal of hazardous materials are heavily regulated at the federal, state, and local level to address handling, storing, testing, transportation, and disposing of hazardous materials in a safe manner, as summarized in the Regulatory Framework in Draft EIR Sections 3.8.2 (Hazards and Hazardous Materials) and 3.2.2 (Air Quality). There are numerous agencies involved in the promulgation and enforcement of the laws and regulations that dictate hazardous materials handling activities for the Project. Enforcement associated with those laws and regulations vary by agency (e.g., the U.S. EPA, Bay Area Air Quality Management District [BAAQMD], and Occupational Safety and Health Administration [OSHA]). The overall focus of laws and regulations is on preventing hazardous materials from becoming a public or worker health hazard. For example, the removal of asbestos requires a work plan be submitted to BAAQMD for their review and approval. Other examples include special licensing and training requirements for companies and personnel directly involved in remediation and laboratory testing of hazardous materials. Some agencies have their own enforcement procedures for ensuring compliance with handling hazardous materials (e.g., BAAQMD's site inspections, California Highway Patrol ticketing unsecured loads).

As discussed in Draft EIR Sections 3.2 (Air Quality) and 3.8 (Hazards and Hazardous Materials), EBMUD requires its contractors to comply with EBMUD standard practices and procedures, which are applicable to all EBMUD projects and detail the methods EBMUD requires its contractors to implement. EBMUD's detailed Standard Construction Specifications and Procedures clarify the construction contractor's legal and contractual obligations in implementing appropriate hazardous materials handling and disposal procedures. In addition, EBMUD's construction inspector is required to monitor contractor compliance with those specifications and stop work, as necessary to ensure compliance with the construction specifications.

As described in Draft EIR Sections 3.2.3 (Air Quality) and 3.8.3 (Hazards and Hazardous Materials), prior to demolition, the contractor is required to submit to EBMUD for approval, detailed (i.e., Project-specific and site-specific) plans to address hazardous material removal. A state-certified hazardous waste removal contractor must be retained to implement the abatement measures specified in the plan. Once hazardous material abatement measures have been implemented and the hazardous materials are removed, as stated in Draft EIR Section 3.8 (Hazards and Hazardous Materials), the construction contractor would conduct a clearance examination and provide documentation to confirm that abatement has been completed in accordance with federal, state, and local laws and regulations.

As discussed and analyzed in Section 10.2 of Chapter 10, *Draft EIR Revisions,* EBMUD would contract independently with a state-licensed, experienced and knowledgeable asbestos consultant to prepare a Feasibility Assessment that would select the best method for the removal of the transite roof that controls and contains the asbestos. An

independent asbestos consultant would also report to EBMUD during the removal of the transite roof and ensure the work is performed in a manner that is protective of workers and public health, compliant with regulatory requirements, and performed consistent with the selected method from the Feasibility Assessment.

Public Participation

Several commenters asked if the public can be involved in decisions related to removal of the hazardous materials and if the public would be made aware of the detailed hazardous material removal plans and overall Project schedule when they are known. As described above, prior to demolition, the contractor would submit detailed plans related to hazardous material removal procedures and dust control to EBMUD for review and approval. After the draft plans are submitted, EBMUD would hold a pre-construction meeting with neighbors to present and obtain input on the plans. EBMUD would consider the input received from the community when reviewing the draft plans.

8.2 Responses to Agency Comments

8.2.1 California Department of Transportation

Response to Comment Caltrans-1

This comment is acknowledged.

Response to Comment Caltrans-2

A cross sectional view of the Redwood Day School access driveway is not currently available because the Project has not been approved or designed. If the Redwood Day School access driveway is approved and constructed, the driveway would be sloped away from the freeway or would include facilities (e.g., a v-ditch) to route stormwater from the driveway to the Central Reservoir storm drain system and ultimately to the City of Oakland's stormwater system, and therefore would not impact the freeway.

Response to Comment Caltrans-3

The AM (7:00 a.m. to 9:00 a.m.) and PM (4:00 p.m. to 6:00 p.m.) peak hour operating conditions at the Interstate 880 (I-880) off-ramps and ramp intersections were not directly evaluated in the Draft EIR. The closest study intersections to I-880 are located at East 9th Street/Fruitvale Avenue (Intersection No. 12 as shown on Draft EIR Figure 3.12-1) and East 7th Street/Kennedy Street (Intersection No. 13 as shown on Draft EIR Figure 3.12-1), which were evaluated to represent the first major intersections that would be used by construction vehicles accessing the Project site to/from I-880. As noted in the Transportation Impact Study (Draft EIR Appendix K), the I-880 on- and off-ramps at 29th Avenue were under construction at the time the analysis for the Draft EIR was conducted, and therefore could not be evaluated.

During the analyzed AM and PM peak hours, Project construction would generate up to 9 worker vehicle trips during each of the peak hour periods and no truck trips. The existing

and existing plus Project construction weekday level of service for the AM and PM peak hours for all 16 study intersections are provided in Draft EIR Table 3.12-4. As shown in Draft EIR Table 3.12-4, the average intersection delay per vehicle and level of service at Intersection Nos. 12 and 13 would remain unchanged during both the AM and PM peak hours with the addition of Project construction traffic. Considering the minimal amount of construction truck traffic generated by Project construction during the AM and PM peak hours, and the fact that the average intersection delay per vehicle and level of service would remain unchanged at the study intersections closest to the I-880 ramps, it can be reasonably inferred that operating conditions at the nearby I-880 off-ramps and intersections would similarly be unaffected by truck trips generated by Project construction. Refer to Section 3.12.3, in Draft EIR Section 3.12, Transportation and Circulation, for further analysis of construction-related traffic impacts.

Response to Comment Caltrans-4

As described in Draft EIR Section 3.3 (Biological Resources), a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 44, Environmental Requirements, and Section 3.7, Protection of Native and Non-Native Protected Trees, which includes provisions to ensure the protection of trees that remain during construction. Trees would be protected by installing exclusion fencing around the trees outside of their driplines, avoiding work within the tree protection zone, careful pruning of tree roots within the excavation zone, and careful pruning of tree limbs that may be damaged by heavy equipment. A certified arborist would be provided by EBMUD or its contractor to ensure that tree roots exposed during trench excavation are pruned cleanly, to evaluate any tree injured during construction, and to ensure that injured trees are replaced if deemed necessary.

As described in Draft EIR Section 3.1 (Aesthetics), the Project site design incorporates existing landscaping, a mix of earthen berms, trees and shrubs to screen the tanks and emphasize the natural setting at the perimeter of the site while balancing earthwork. The landscape plan for the Project includes primarily drought-tolerant native tree and shrub species. Most of the trees adjacent to the recreation area would be retained with the Project and the portions of the basin that would be visible from the streets would consist of berms and flat landscaping with mulch, ground cover, trees, and shrubs.

Response to Comment Caltrans-5

There are no impacts to the State Transportation Network resulting from implementation of the Project. EBMUD understands its responsibilities as a lead agency under CEQA. Chapter 11, *Final EBMUD Practices and Procedures Monitoring and Reporting Plan and Mitigation Monitoring and Reporting Program*, includes a list of all impacts identified in the EIR as significant or potentially significant, along with mitigation measures, the party responsible for implementation of the mitigation measures, the party responsible for monitoring and enforcing the mitigation measures, and the timing of implementation of each mitigation measure.

Response to Comment Caltrans-6

Construction of the Project is not expected to encroach into any state right-of-way or require a Caltrans-issued encroachment permit. If it is determined that a Caltrans-issued encroachment permit is necessary, EBMUD would follow the steps provided by the commenter to obtain the permit.

8.2.2 Department of Toxic Substances Control

Response to Comment DTSC-1

As noted in the Draft EIR on page 2-15 of Chapter 2, *Project Description*, and pages 3.8-2 and 3.8-7 of Section 3.8 (Hazards and Hazardous Materials), PCBs are present in the sealants that make up the asphalt panels (i.e., panel craft) in the reservoir liner. The liner and sealant materials do not produce a health risk to water consumers because PCBs have extremely low (undetectable) solubility in water. Because of the stable nature of PCBs (i.e., they do not easily break down or decompose), their low solubility in water, and the fact that the PCB-containing materials are underlain by a layer of concrete, the likelihood of PCBs entering the underlying soil and contaminating the soil are very low. As discussed in Global Response 1, sampling and testing the soil on site before construction and after removal of the Central Reservoir transite roof and liner and Materials Storage Building would be conducted to determine if soils on the Project site contain hazardous materials above regulatory thresholds. If it is determined concentrations of hazardous materials exist that exceed regulatory thresholds, the contaminated soils would then be removed, offhauled and disposed of in accordance with all federal, state, and local regulations before earthwork activities resume.

8.3 Responses to Organization Comments

8.3.1 Redwood Day School

Response to Comment RDS-1

This comment is acknowledged.

Response to Comment RDS-2

Air monitors would not be placed off of the Central Reservoir property because it would reduce the effectiveness of the air monitoring. Air monitors need to be located as close to the source as practicable to protect worker and public health. For detecting dust and particulates generated by construction activities on the Project site, air monitoring at farther distances (i.e., the Redwood Day School Property) would detect lower levels of contaminants since dilution and dispersion would occur with time and distance from the construction activities. In addition, depending on the geometry of the site and wind direction, increasing the source to air monitor distance can allow contaminants that are not associated with the Project (such as from Interstate 580) to be included in the monitored levels, potentially skewing results. Placing air monitors on private property

would also hinder EBMUD's ability to access, maintain, and monitor the air monitoring equipment which would potentially delay results.

As discussed in Draft EIR Section 3.2 (Air Quality), a minimum of four monitors would be placed both up- and down-wind of the active work area during demolition activities with the potential to create dust. One such air monitoring station would be placed at the northeast side of the site, adjacent to the Redwood Day School property.

With regard to the part of the comment that states that the "maximum offsite concentration for certain toxic air contaminants will occur on the School's site", it is important to note that with implementation of EBMUD Standard Specification 01 35 44 Section 3.4(A), which would require the construction contractor to use engines that meet the U.S. EPA's most stringent standards for off-highway diesel engines (referred to as the Tier 4 Final Standards), emissions of toxic air contaminants would be well below the applicable health risk standards, as indicated on Draft EIR pages 3.2-26 through 3.2-28.

Response to Comment RDS-3

At the request of the community, EBMUD would post bi-weekly air monitoring summary reports on the Project website. As required pursuant to EBMUD Standard Specification 01 35 44 Section 3.3(C) and described in Draft EIR Section 3.2 (Air Quality), air monitoring laboratory analysis would be conducted by a California Department of Health Services-certified laboratory, not by the California Department of Health Services. The air monitoring data is collected daily and testing can take up to 72 hours. Following lab testing, the data would be reported to EBMUD, compiled, reformatted, and posted onto the Project website on a bi-weekly basis. These reports would compare air monitoring results to applicable environmental and public health thresholds. EBMUD would also identify the name and contact information of a Project-specific community affairs representative tasked with promptly addressing questions and inquiries related to air quality concerns.

Response to Comment RDS-4

EBMUD is committed to ensuring timely notification of planned construction activities including reservoir demolition and demolition of the asbestos roof. EBMUD would notify Redwood Day School approximately two weeks in advance of potentially disruptive construction activities. EBMUD would also hold a pre-construction meeting with neighbors to discuss the overall notification procedures throughout the Project duration, including notification in advance of demolition.

As discussed in Global Response 1, the Project includes measures to ensure asbestos is controlled and prevented from leaving the Project site and EBMUD would monitor the air during removal of the transite roof. EBMUD would also monitor wind direction as necessary, consistent with local regulations and in accordance with the Dust Control and Monitoring Plan required as part of EBMUD Standard Construction Specification 01 35 44 and as described in Draft EIR Section 3.2 (Air Quality). Also, as described in the Draft EIR Section 3.2 (Air Quality), EBMUD would suspend demolition activities consistent with City of Oakland regulations that require that demolition activities be

suspended when the average wind speeds exceed 20 mph. EBMUD would ensure the community is notified of changes in the planned demolition schedule, if they occur.

Response to Comment RDS-5

As discussed in the Draft EIR, Section 3.10 (Noise), Mitigation Measure NOI-1 requires EBMUD to erect a 16-foot tall temporary noise barrier along EBMUD's property adjacent to the Redwood Day School for the entire construction duration to help reduce construction noise levels and also requires EBMUD to schedule construction activities outside of normal school hours when it is feasible to do so if heavy construction equipment, including but not limited to impact equipment, is operated within 100 feet of the closest classroom or if the noise barrier needs to be temporarily removed to accommodate construction. Feasibility is dependent on the actual construction schedule and if the noisiest work can be completed when school is not in session without impacting the ability of the contractor to complete work within a reasonable time period. By building a noise barrier and by scheduling the noisiest construction equipment (within 100-feet) outside of school hours when feasible, noise levels at the school are expected to be reduced to levels commensurate with the City of Oakland ordinance levels while school is in session.

Response to Comment RDS-6

A 16-foot noise barrier is the tallest temporary barrier that can be feasibly constructed at the Project site adjacent to the Redwood Day School. A taller barrier would require borings and permanent support footings which would render the noise barrier immobile. The noise barrier needs to be temporary and movable in order to accommodate certain periods of construction when the barrier may need to be moved to accommodate equipment and/or construction activities; therefore, a taller noise barrier would not be feasible. Construction and removal of a taller, permanent noise barrier would also introduce additional noise impacts to the Redwood Day School.

It should be noted that with the 16-foot noise barrier, the estimated noise levels are expected to exceed the ordinance standards only at the closest second story levels at the Redwood Day School for a total of about 2 days during demolition, which is less than 1 percent of the total construction schedule. Noise levels at the first story classrooms of the Redwood Day School would be reduced to below the daytime noise ordinance standard with the 16-foot barrier. In addition, noise impacts would be reduced even further with Mitigation Measure NOI-1, which states that EBMUD would schedule construction activities outside of normal school hours when it is feasible to do so if heavy construction equipment, including but not limited to impact equipment, is operated within 100 feet of the closest classroom or if the noise barrier needs to be temporarily removed to accommodate construction.

Prior to demolition, the contractor would submit a Noise Control and Monitoring Plan to EBMUD for approval. After the draft plan is submitted, EBMUD would hold a pre-construction meeting with neighbors to present and obtain input on the plan.

Response to Comment RDS-7

EBMUD is committed to ensuring timely notification of planned construction activities including advance notification of potentially disruptive construction. EBMUD would notify the school approximately two weeks in advance of potentially disruptive construction activities. EBMUD would also hold a pre-construction meeting with neighbors to discuss the overall notification procedures throughout the Project duration, including construction activities that may affect the school.

In addition, Mitigation Measure NOI-1 requires that EBMUD schedule construction activities outside of normal school hours when it is feasible to do so if heavy construction equipment, including but not limited to impact equipment, is operated within 100 feet of the closest classroom or if the noise barrier needs to be temporarily removed to accommodate construction.

Response to Comment RDS-8

As shown on Draft EIR Figures 3.12-2 and 3.12-3, although workers could use Sheffield Avenue to access the Project site, Sheffield Avenue is not a truck route, so no Project-related heavy trucks or machinery would utilize this route during peak or non-peak times. Trucks would use 23rd Avenue, Fruitvale Avenue, East 27th Street, and 25th Avenue to access the Project site. As indicated on Draft EIR page 3.12-14, the number of workers would vary from 3 to 13 per day depending on the construction phase, which would result in maximum one-way worker vehicle trips ranging from 6 to 26 per day.

As described in the Draft EIR Section 3.12 (Transportation and Circulation), compared to existing conditions, average intersection delay would remain virtually unchanged and the level of service (LOS) would remain the same at all study intersections during construction. Therefore, traffic during construction would not present substantial differences compared to existing conditions and impacts would be less than significant.

With regard to the comment requesting multiple points of ingress and egress to the Project during construction, EBMUD has identified multiple points of ingress and egress. There are two main access points, neither of which is located on Sheffield Avenue adjacent to the Redwood Day School. As described in Draft EIR Section 3.12, the primary access point would be the same as the existing site entrance, at the corner of East 29th Street and 25th Avenue, and the secondary access point would be on East 30th Street. The two access points are also shown on Draft EIR Figure 3.12-1.

Response to Comment RDS-9

The Redwood Day School Access Driveway is an optional part of the Project that is contingent on Redwood Day School obtaining City of Oakland approval, obtaining all necessary permits, and complying with Mitigation Measure TRA-1 which requires that the Redwood Day School conduct an operational and safety analysis. If the option is approved by the City of Oakland, the decision to allow Redwood Day School to use the driveway prior to completion of the Project would be made during the design phase and would be based on whether the contractor would need the area to access the site and construct the Project.

To the extent the commenter is concerned that the Project would cause significant increases in traffic in the neighborhood during construction, please note that compared to existing conditions, average intersection delay during all stages of construction would remain virtually unchanged and the LOS would remain the same at all study intersections as previously described in Response RDS-8. Therefore, traffic during construction would not present substantial differences compared to existing conditions and impacts would be less than significant regardless of whether the optional driveway is available for use by Redwood Day School during construction.

8.3.2 Deann Hays

Response to Comment Hays-1

EBMUD responded to the commenter on December 6, 2019 with the email address to which public comments on the Draft EIR could be sent (centralreservoir@ebmud.com). The comment letter from Redwood Day School is addressed in Section 8.3.1 above.

8.4 Responses to Individual Comments

8.4.1 Jeanette Aguilar

Response to Comment Aguilar-1

Please refer to Global Response 1 for details about measures that EBMUD would implement during demolition and construction of the Project to ensure the health and safety of the surrounding neighborhood, and how EBMUD would ensure federal and state regulations are being followed.

With regard to the part of the comment asking how EBMUD would ensure particulates do not leave the site and whether or not the site would be tented, tenting is one possible containment procedure where a structure or surface with hazardous materials is tented (i.e., isolated from its surroundings by an enclosure) to prevent particulate matter from leaving a demolition location. As described in Global Response 1, other containment techniques exist such as misting or wetting the material to prevent particulates from becoming airborne. Also as described in Global Response 1, EBMUD would contract independently with a state-licensed, experienced and knowledgeable asbestos consultant to prepare a Feasibility Assessment that would select the best method for the removal of the transite roof that controls and contains the asbestos. An independent asbestos consultant would also report to EBMUD during the removal of the transite roof and ensure the work is performed in a manner that is protective of workers and public health, compliant with regulatory requirements, and performed consistent with the selected method from the Feasibility Assessment. As described in Draft EIR Sections 3.2.3 (Air Quality) and 3.8.3 (Hazards and Hazardous Materials), prior to demolition, the contractor would submit detailed (i.e., Project-specific and site-specific) plans of the procedures to address hazardous material removal and dust control. The plans would include the location and layout of containment and decontamination areas, the sequencing of work, the equipment to be used, the handling of materials, a disposal plan including location of

approved disposal sites, and a detailed description of the methods to be employed to control pollution and to monitor and prevent dust and particulate matter from leaving the site. Also, as described in Global Response 1, EBMUD would contract independently with a hazardous materials consultant who would implement a two-part air monitoring program including daily laboratory analyses for asbestos fibers and specific real-time air monitors for particulates to provide immediate information as to the effectiveness of the transite roof removal and dust control methods with pre-established particulate action levels and stop work thresholds. EBMUD would also hold a pre-construction meeting with neighbors to present and obtain input on the contractor's plans, once submitted. EBMUD would consider the public's input when reviewing the draft plans.

Response to Comment Aguilar-2

EBMUD was not involved in the activities referred to in West Oakland, Hunters Point, and other bay area neighborhoods, and therefore will not attempt to comment on how hazardous materials may have been handled in those activities. EBMUD speaks with confidence, however, to our standard practices and procedures for hazardous material removal as outlined in the Draft EIR, our strict adherence to federal, state, and local regulations, and our reputation for consistently doing this type of work in the safest way possible. EBMUD has completed reservoir replacement projects throughout its service area, with no ill effects. Examples of other projects in which EBMUD successfully protected the health of workers and local residents were discussed at the January 7, 2020 public meeting, including, Berryman Reservoir in Berkeley, Danville Reservoir in Danville, Summit Reservoir in Berkeley/Kensington, and South Reservoir in Castro Valley. EBMUD's strong track record of safely carrying out removal of hazardous materials demonstrates our commitment to diligently protecting the surrounding community from hazardous materials such as asbestos and PCBs.

Beyond the usual technical measurements and assessments that take place on a project site (and as discussed in Global Response 1), EBMUD would have a construction inspector and an independently contracted hazardous materials consultant reporting directly to EBMUD to oversee the work of the contractor. The independent hazardous materials consultant would ensure the work of the contractor is performed in a manner that is protective of workers and public health, compliant with regulatory requirements, and performed consistent with the selected transite roof removal method. The independent hazardous materials consultant would also prepare and implement the air monitoring program to ensure the air monitoring program is protective of worker and public health and is compliant with regulatory requirements. The construction inspector's oversight duties include monitoring implementation of mitigation measures and EBMUD standard practices and procedures, such as the plans detailed in the Draft EIR that would be implemented to prevent the release of hazardous materials from the site. In addition, to ensure direct contact and an open line of communication with EBMUD during construction, the community would be provided with contact information for an EBMUD Community Affairs Representative and a preconstruction public meeting would occur when EBMUD is developing specific techniques that would be used to prevent asbestos from leaving the site during demolition and construction. During construction, EBMUD would post bi-weekly air monitoring summary reports on the Project website to show

how the air monitoring results relate to applicable environmental and public health thresholds.

8.4.2 Philip Bellman

Response to Comment Bellman-1

This comment is acknowledged and appreciated by EBMUD.

8.4.3 Paul Bostwick

Response to Comment Bostwick-1

Please refer to Global Response 1 for details about steps that would be taken to protect worker and public safety during roof demolition and asbestos handling and related earth moving activities for the Project. These steps include:

- Complying with federal, state and local regulatory requirements for handling hazardous materials (i.e., asbestos);
- Implementing EBMUD's construction practices and procedures;
- EBMUD's construction inspector and independent asbestos consultant oversight of the construction contractor for the removal, transport, and disposal of hazardous materials;
- Special licensing and training requirements for the contractor responsible for abatement of hazardous materials;
- Securing the demolition area to prevent unauthorized entry;
- Establishing decontamination areas to ensure abatement workers do not release hazardous materials into the environment;
- Implementing dust control measures to prevent dust from leaving the site;
- Completing a Feasibility Assessment to determine the best method for removing the transite roof that controls and contains the asbestos;
- Soil sampling and testing before construction begins and after the abatement of hazardous materials from the site and removal;
- Remediation of any soils found to be contaminated in excess of regulatory standards;
- Real-time air monitoring that would be conducted by an independent hazardous materials consultant, the results of which would be compared to pre-established stop work triggers to ensure that airborne asbestos does not leave the Project site;

- Covering all trucks transporting hazardous waste materials; and

- Conducting a preconstruction public meeting that would occur when developing specific techniques that would be used to prevent hazardous materials from leaving the site during demolition and construction.

Response to Comment Bostwick-2

EBMUD is committed to ensuring full compliance with all federal, state, and local regulations related to hazardous materials. There are several ways EBMUD would monitor the Project during hazardous material removal to ensure compliance with all applicable hazardous material-related laws and regulations. As described in detail in Global Response 1, the construction contractor would be monitored by EBMUD's construction inspector and an independently contracted asbestos consultant, who would ensure that the contactor is complying with EBMUD's standard practices and procedures related to regulating hazardous material removal and is removing the transite roof in compliance with the best method selected by a Feasibility Assessment. The EBMUD construction inspector would stop work as necessary to ensure compliance with EBMUD's standard practices and procedures.

Also, as discussed in Draft EIR Sections 3.2 (Air Quality), 3.8 (Hazards and Hazardous Materials), and Global Response 1, real-time air monitoring would be required to ensure compliance with BAAQMD regulations and EBMUD's Standard Construction Specifications and Procedures. Air monitoring would be performed by an independent hazardous materials consultant and overseen by EBMUD staff. Also, at the request of the community, EBMUD would post bi-weekly air monitoring summary reports on the Project website. These reports would compare air monitoring results to applicable environmental and public health thresholds.

8.4.4 Christina Ferracane

Response to Comment Ferracane-1

Draft EIR Appendix D, Arborist Report for the EBMUD Central Reservoir Replacement Project, includes the results of a tree survey that was completed in March 2017, which contains maps that depict trees that are recommended for removal based on tree condition and trees that may potentially be affected by Project development. Appendix C in the Draft EIR, Planning Phase Architectural Design Report, includes multiple conceptual site plans that were considered, as well as the final concept and design. The Central Reservoir Site Plan depicts new trees that would be planted to supplement existing trees, and is included as Figure 9A of the Planning Phase Architectural Design Report, as well as Draft EIR Figures ES-1 and 2-3. Proposed trees are indicated with a solid green center, while existing trees are indicated with an open center.

Figures 10A through 10O in the Planning Phase Architectural Design Report (Draft EIR Figures 3.1-7 through 3.1-12) show existing views of the Project site, as well as visual simulations of 5 and 10 years after construction, to provide examples of what the site would look like after implementation of the Project. Section V.C of the Planning Phase

Architectural Design Report discusses a final planting plan, which includes a plant palette of primarily drought-tolerant native tree and shrub species. Draft EIR Section 2.5.8 (page 2-21) includes a description of the security fencing and Figure 2-11 (page 2-21) shows an example of fence.

Response to Comment Ferracane-2

EBMUD standard practices and procedures related to tree protection and removal are described on pages 3.3-30 and 3.3-31 of Draft EIR Section 3.3 (Biological Resources), as well as in Appendix E, EBMUD Practices and Procedures Monitoring and Reporting Plan. EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 3.7, Protection of Native and Non-Native Protected Trees, has been incorporated into the Project and includes provisions to ensure the protection of trees that remain during construction. Trees would be protected by installing exclusion fencing around the trees outside of tree driplines, avoiding work within the tree protection zone, careful pruning of tree roots within the excavation zone, and careful pruning of tree limbs that may be damaged by heavy equipment. Also, as described in Draft EIR Section 3.3, EBMUD Standard Construction Specification 01 35 44, Environmental Requirements, Section 3.8, Protection of Birds Protected Under the Migratory Bird Treaty Act and Roosting Bats, has been incorporated into the Project and includes provisions for preconstruction biological reconnaissance, including nesting bird surveys, biologic monitoring during construction, delineation of active bird nest avoidance buffer zones, and avoiding nesting seasons where applicable.

Response to Comment Ferracane-3

The temporary noise barrier proposed for the Redwood Day School would be approximately 16 feet tall as described in Mitigation Measure NOI-1. The temporary noise barrier requires a 4-foot horizontal lateral clearing (i.e., footprint) for the barrier supports (K-rail). The noise barrier would be placed several feet (approximately 5-feet, possibly more) from the property line/fence to avoid impinging on the existing trees adjacent to the Redwood Day School property. Based on EBMUD's experience of similar reservoir replacement projects, most recently at Summit Reservoir in Kensington/Berkeley, 10-feet is the minimum buffer distance around structures, trees, or construction activities to allow construction equipment to safely move around. Therefore, approximately 10-feet would be the minimum buffer distance needed on at least one side of the noise barrier to provide room for construction equipment.

8.4.5 Jenaver Goodman

Response to Comment Goodman-1

Please refer to Global Response 1 for details about steps that would be taken to protect worker and public safety during roof demolition and asbestos handling and related earth moving activities for the Project. These steps include:

- Complying with federal, state and local regulatory requirements for handling hazardous materials (i.e., asbestos);

- Implementing EBMUD's construction practices and procedures;
- EBMUD's construction inspector and independent asbestos consultant oversight of the construction contractor for the removal, transport, and disposal of hazardous materials;
- Special licensing and training requirements for the contractor responsible for abatement of hazardous materials;
- Securing the demolition area to prevent unauthorized entry;
- Establishing decontamination areas to ensure abatement workers do not release hazardous materials into the environment;
- Implementing dust control measures to prevent dust from leaving the site;
- Completing a Feasibility Assessment to determine the best method for removing the transite roof that controls and contains the asbestos;
- Soil sampling and testing before construction begins and after the abatement of hazardous materials from the site and removal;
- Remediation of any soils found to be contaminated in excess of regulatory standards;
- Real-time air monitoring that would be conducted by an independent hazardous materials consultant, the results of which would be compared to pre-established stop work triggers to ensure that airborne asbestos does not leave the Project site;
- Covering all trucks transporting hazardous waste materials; and
- Conducting a preconstruction public meeting that would occur when developing specific techniques that would be used to prevent hazardous materials from leaving the site during demolition and construction.

Response to Comment Goodman-2

As described in Draft EIR Section 3.12 (Transportation and Circulation), compared to existing conditions, average intersection delay would remain virtually unchanged and the LOS would remain the same at all study intersections during construction. Therefore, traffic during construction would not present substantial differences compared to existing conditions.

With regard to noise during construction, as described in Draft EIR Section 3.10 (Noise and Vibration), EBMUD has incorporated a range of noise control measures such as requiring the contractor to develop a Noise Control and Monitoring Plan and implement noise control measures (e.g., mufflers or noise-attenuating shields) on all equipment. In response to requests from the community and as described in revisions to Section 3.10 in Section 10.2 of Chapter 10, *Draft EIR Revisions,* Mitigation Measure NOI-1 has been

expanded to include a temporary 6-foot high fence-mounted noise barrier along the western, southern, and eastern site perimeter. With implementation of Mitigation Measure NOI-1 and EBMUD standard practices and procedures applicable to all EBMUD projects, which include noise control measures, no location (or receptor) would experience noise levels in excess of the City of Oakland ordinance levels for more than a total of about 10 work days over the entire 6-year construction period.

8.4.6 Lisa Lemus

Response to Comment Lemus-1

An electronic copy of the Draft EIR was emailed to the commenter on December 2, 2019. The commenter was also informed that the Draft EIR and other Project documents, including appendices and meeting presentations, can be found at www.ebmud.com/central.

8.4.7 Joycelyn Maguire

Response to Comment Maguire-1

An electronic copy of the Draft EIR was emailed to the commenter on December 2, 2019. A hard copy of the Draft EIR was sent to the commenter on the same date, and the commenter was notified that a hard copy of the Draft EIR is also available for review at the Oakland Public Library, Dimond Branch. The commenter was also informed that the Draft EIR and other Project documents, including appendices and meeting presentations, can be found at www.ebmud.com/central.

8.4.8 Adam Mays

Response to Comment Mays 1-1

In response to requests from the community, and as described in revisions to Section 3.10 in Section 10.2 of Chapter 10, *Draft EIR Revisions,* Mitigation Measure NOI-1 has been expanded to include installation of a temporary 6-foot high fence-mounted noise barrier along the existing western, southern, and eastern site perimeter fencing including the area adjacent to the Central Reservoir Recreation Area.

Response to Comment Mays 2-1

Please see Response Mays.1-1, above.

8.4.9 Meredith Oliver

Response to Comment Oliver.M-1

Please refer to Global Response 1 for details about steps that would be taken to protect worker and public safety during roof demolition and asbestos handling and related earth moving activities for the Project. These steps include:

- Complying with federal, state and local regulatory requirements for handling hazardous materials (i.e., asbestos);
- Implementing EBMUD's construction practices and procedures;
- EBMUD's construction inspector and independent asbestos consultant oversight of the construction contractor for the removal, transport, and disposal of hazardous materials;
- Special licensing and training requirements for the contractor responsible for abatement of hazardous materials;
- Securing the demolition area to prevent unauthorized entry;
- Establishing decontamination areas to ensure abatement workers do not release hazardous materials into the environment;
- Implementing dust control measures to prevent dust from leaving the site;
- Completing a Feasibility Assessment to determine the best method for removing the transite roof that controls and contains the asbestos;
- Soil sampling and testing before construction begins and after the abatement of hazardous materials from the site and removal;
- Remediation of any soils found to be contaminated in excess of regulatory standards;
- Real-time air monitoring that would be conducted by an independent hazardous materials consultant, the results of which would be compared to pre-established stop work triggers to ensure that airborne asbestos does not leave the Project site;
- Covering all trucks transporting hazardous waste materials; and
- Conducting a preconstruction public meeting that would occur when developing specific techniques that would be used to prevent hazardous materials from leaving the site during demolition and construction.

Response to Comment Oliver.M-2

No Canary Island Pines are recommended for removal at the southwest corner of the property. Please refer to Response to Comment Oliver P-2 regarding trees to be removed as part of the Project.

Response to Comment Oliver.M-3

As shown on the future site plan, Draft EIR Figure 2-3 (page 2-5), the future access road would be in approximately the same location as the existing access road along the southwest corner of the Central Reservoir property. As indicated in Draft EIR Section

2.7, Operations and Maintenance, worker vehicle trips for operations and maintenance of the Project would remain the same as existing conditions, with approximately 4 trips per month.

Response to Comment Oliver.M-4

Please refer to the response to Oliver. M-1 for details about measures that would be taken to protect the health of the surrounding neighborhood during demolition and construction.

8.4.10 Patrick Oliver

Response to Comment Oliver.P-1

Please refer to Global Response 1 for details about steps that would be taken to protect worker and public safety during roof demolition and asbestos handling and related earth moving activities for the Project. These steps include:

- Complying with federal, state and local regulatory requirements for handling hazardous materials (i.e., asbestos);
- Implementing EBMUD's construction practices and procedures;
- EBMUD's construction inspector and independent asbestos consultant oversight of the construction contractor for the removal, transport, and disposal of hazardous materials;
- Special licensing and training requirements for the contractor responsible for abatement of hazardous materials;
- Securing the demolition area to prevent unauthorized entry;
- Establishing decontamination areas to ensure abatement workers do not release hazardous materials into the environment;
- Implementing dust control measures to prevent dust from leaving the site;
- Completing a Feasibility Assessment to determine the best method for removing the transite roof that controls and contains the asbestos;
- Soil sampling and testing before construction begins and after the abatement of hazardous materials from the site and removal;
- Remediation of any soils found to be contaminated in excess of regulatory standards;
- Real-time air monitoring that would be conducted by an independent hazardous materials consultant, the results of which would be compared to pre-established stop work triggers to ensure that airborne asbestos does not leave the Project site;

- Covering all trucks transporting hazardous waste materials; and

- Conducting a preconstruction public meeting that would occur when developing specific techniques that would be used to prevent hazardous materials from leaving the site during demolition and construction.

Response to Comment Oliver.P-2

As shown on Draft EIR Figure 2-3 (page 2-5), the service road along the southwestern corner of the Central Reservoir property would not extend into the corner of the property that is being referred to in the comment letter, and would therefore not result in any tree removal in that area to accommodate Project construction. The purpose of the service road would remain the same as it is today; to allow worker trucks to access the reservoir and the reservoir site. As indicated in Draft EIR Section 2.7 (Operations and Maintenance) worker vehicle trips for operations and maintenance of the Project would remain the same as existing, with approximately 4 trips per month.

The specific locations of trees to be removed can be found in Table 1 in Draft EIR Appendix D. As indicated in Appendix D, Table 1, no Canary Island Pines or Redwood trees are to be removed in the southwest corner of the property. One Coast Live Oak is recommended for removal in the southwest corner because it is suffering from root rot and it is in poor condition. In addition to the Coast Live Oak to be removed, one of each of the following types of trees must also be removed from the southwest corner of the property because of tree condition (not because of Project construction): 1 Myoporum, 1 Monterey Pine, 1 Deodar Cedar, 1 Victorian Box, 1 Douglas Fir, and 1 Monterey Cypress.

8.4.11 Juan Romero

Response to Comment Romero-1

The commenter has been added to the distribution list for electronic Project notification. EBMUD appreciates the offer for outreach assistance.

Response to Comment Romero-2

EBMUD staff discussed the existing noise at the Project site on the phone with the commenter on January 7, 2020. The noise is from the existing Central Rate Control Station, which is located in the sidewalk near the East 29th Street/25th Avenue entrance. The existing Central Rate Control Station would be moved on the Central Reservoir property as part of the Project, farther from residences, thus decreasing the noise experienced by the neighborhood. Please refer to Section 2.5.4, Rate Control Station, in the Draft EIR Chapter 2, *Project Description*, for a description of the new Rate Control Station proposed as part of the Project. Figure 2-4 (page 2-7) in Draft EIR Chapter 2, *Project Description*, was updated and is included in Section 10.2 of Chapter 10, *Draft EIR Revisions*, and depicts the existing and proposed Rate Control Station location.

8.4.12 Shonette Marie Steiger

Response to Comment Steiger.1-1

EBMUD was not involved in the activities referred to in West Oakland, Sunnydale, Hunters Point, and Flint, and therefore will not attempt to comment on how hazardous materials may have been handled in those activities. EBMUD speaks with confidence, however, to our standard practices and procedures for hazardous material removal as outlined in the Draft EIR, our strict adherence to federal, state, and local regulations, and our reputation for consistently doing this type of work in the safest way possible. EBMUD has completed reservoir replacement projects throughout its service area, with no ill effects. Examples of other projects in which EBMUD successfully protected the health of local residents were discussed at the January 7, 2020 public meeting, including, Berryman Reservoir in Berkeley, Danville Reservoir in Danville, Summit Reservoir in Berkeley/Kensington, and South Reservoir in Castro Valley. EBMUD's strong track record of safely carrying out removal of hazardous materials demonstrates our commitment to diligently protecting the surrounding community from hazardous materials such as asbestos and PCBs.

Beyond the usual technical measurements and assessments that take place on a project site (and as discussed in Global Response 1), EBMUD would have a construction inspector and an independently contracted hazardous materials consultant reporting directly to EBMUD to oversee the work of the contractor. The independent hazardous materials consultant would ensure the work of the contractor is performed in a manner that is protective of workers and public health, compliant with regulatory requirements, and performed consistent with the selected transite roof removal method from a Feasibility Assessment. The independent hazardous materials consultant would also prepare and implement the air monitoring program to ensure the air monitoring program is protective of worker and public health and is compliant with regulatory requirements. The construction inspector's oversight duties include monitoring implementation of mitigation measures and EBMUD standard practices and procedures, such as the plans detailed in the Draft EIR that would be implemented to prevent the release of hazardous materials from the site. In addition, to ensure direct contact and an open line of communication with EBMUD during construction, the community would be provided with contact information for an EBMUD Community Affairs Representative and a preconstruction public meeting would occur when EBMUD is developing specific techniques that would be used to prevent asbestos from leaving the site during demolition and construction. During construction, EBMUD would post bi-weekly air monitoring summary reports on the Project website to show how the air monitoring results relate to applicable environmental and public health thresholds.

Response to Comment Steiger.1-2

Please refer to Global Response 1 regarding measures that would be taken to contain hazardous materials during demolition and the transportation of demolished materials so that there is no health risk to the public. As discussed in Global Response 1, there are numerous agencies involved in the promulgation and enforcement of the laws and

regulations that would dictate hazardous materials handling for the Project. Global Response 1 describes the outside agencies that regulate hazardous material handling.

With regard to the part of the comment asking if the site would be tented, tenting is one possible containment procedure where a structure or surface with hazardous materials is tented (i.e., isolated from its surroundings by an enclosure) to prevent particulate matter from leaving a demolition location. As described in Global Response 1, other containment techniques exist such as misting or wetting the material to prevent particulates from becoming airborne. Also as described in Global Response 1, EBMUD would contract independently with a state licensed experienced and knowledgeable asbestos consultant to prepare a Feasibility Assessment that would select the best method for the removal of the transite roof that controls and contains the asbestos. An independent asbestos consultant would also report to EBMUD during the removal of the transite roof and ensure the work is performed in a manner that is protective of workers and public health, compliant with regulatory requirements, and performed consistent with the selected method from the Feasibility Assessment. As described in Draft EIR Sections 3.2.3 (Air Quality) and 3.8.3 (Hazards and Hazardous Materials), prior to demolition, the contractor would submit detailed (i.e., Project-specific and site-specific) plans of the procedures to address hazardous material removal and dust control. The plans would include the location and layout of containment and decontamination areas, the sequencing of work, the equipment to be used, the handling of materials, a disposal plan including location of approved disposal sites, and a detailed description of the methods to be employed to control pollution and to monitor and prevent dust and particulate matter from leaving the site. Also, as described in Global Response 1, EBMUD would hold a pre-construction meeting with neighbors to present and obtain input on the contractor's plans, once submitted. EBMUD would consider the public's input when reviewing the draft plans.

Response to Comment Steiger.2-1

Draft EIR Section 3.12 (Transportation and Circulation) analyzes existing conditions with added traffic related to operation of the Project and operation of the Redwood Day School Access Driveway Design Option. As indicated on Draft EIR pages 3.12-18 and 3.12-19, the driveway would not generate any new vehicle trips in the Project area; existing vehicles that currently make U-turns on Sheffield Avenue to pick-up or drop-off students at Redwood Day School would be diverted from Sheffield Avenue to Ardley Avenue. Draft EIR impact areas TRA-1, TRA-3, and TRA-4 address potential impacts that could occur as a result of implementation of the Project and the Redwood Day School Access Driveway Design Option. The Draft EIR determined that with implementation of Mitigation Measure TRA-1, which requires that Redwood Day School conduct an operational and safety analysis by a traffic engineer for the Ardley Avenue/new Redwood Day School driveway intersection and implement measures to address safety issues, the Project's operational impacts under the option would be less than significant. TRA-1 also requires that the Redwood Day School obtain approval from the City of Oakland for the driveway and associated operational and safety analysis.

Response to Comment Steiger.2-2

This comment is acknowledged.

8.4.13 Cristel Tullock

Response to Comment Tullock-1

In 2002, EBMUD became aware of the potential environmental issues resulting from exposed transite asbestos roofs at multiple EBMUD reservoirs; a project was initiated to determine the extent of the potential environmental issues and develop a remediation plan for each of the EBMUD Reservoirs. Work at the Central Reservoir site, called the EBMUD Central Reservoir Asbestos Project, included worker exposure monitoring; soil and sediment sampling and remediation; ambient air monitoring, and reservoir water sampling by an environmental consultant, and encapsulation of the transite roof to prevent potential future releases of asbestos. EBMUD contracted with an independent consultant with expertise in asbestos abatement to review and summarize the asbestos abatement activities at Central Reservoir (refer to Appendix L).

As described in the EBMUD Central Reservoir Asbestos Project Summary (in Appendix L), EBMUD tested soil samples and remediated the soil in multiple phases between 2002 and 2005. All soil samples were collected within EBMUD property boundaries and along the property line inside the Central Reservoir Recreation Area. An additional ten samples were collected in the surrounding neighborhood as a background comparison; no asbestos was detected in any of these samples.

The State of California does not have a cleanup standard for asbestos in soil and the Federal EPA uses an asbestos soil standard of 1 percent.[3] In the absence of a state-specific standard and to ensure a high level of public and environmental protection, EBMUD adopted the most conservative regulatory cleanup standard, the California Asbestos Airborne Toxic Control Measure (ACTM) standard of 0.25 percent. Where soil samples exceeded 0.25 percent, EBMUD removed the soil and disposed of it in a certified hazardous waste landfill. A total of 902 cubic yards of soil were removed from within EBMUD's property and the Central Reservoir Recreation Area, immediately adjacent to the Central Reservoir property. After soil cleanup was completed, asbestos was not detected above 0.25 percent in confirmation soil samples.

Response to Comment Tullock-2

As described in Global Response 1, perimeter air monitoring would be performed by an independently contracted hazardous materials consultant and overseen by EBMUD staff. A minimum of four monitors would be placed both up- and down-wind of the active work area during demolition activities and earthwork activities with the potential to create dust. Air monitoring samples would be handled in accordance with all applicable specifications and guidance, and analyses performed in accordance with the applicable U.S. EPA testing method(s). The air monitoring program would utilize a two-part air monitoring program including daily laboratory analyses for asbestos fibers and specific

3 United States Environmental Protection Agency, EPA Response to September 11: Benchmarks Standards and Guidelines to Protect Public Health, July 19, 2002, updated August 14, 2002. Available online at http://www.epa.gov/wtc/benchmarks.htm#dust

real-time air monitors for particulates to provide immediate information as to the effectiveness of the transite roof removal and dust control methods with pre-established particulate action levels and stop work thresholds.

In the event that real-time air monitoring indicates an increase in particulates that exceeds stop work thresholds, EBMUD's construction inspector would stop work until the cause of the particulates are identified and corrected before resuming work again.

EBMUD has completed similar reservoir replacement projects throughout EBMUD's service area with no ill effects. Examples of other projects were discussed at the January 7, 2020 public meeting and include Berryman Reservoir in Berkeley, Danville Reservoir in Danville, and Summit Reservoir in Berkeley/Kensington. An additional example is South Reservoir in Castro Valley.

Response to Comment Tullock-3

Please refer to Global Response 1 for details about steps that would be taken to protect worker and public safety during roof demolition and asbestos handling and related earth moving activities for the Project. These steps include:

- Complying with federal, state and local regulatory requirements for handling hazardous materials (i.e., asbestos);
- Implementing EBMUD's construction practices and procedures;
- EBMUD's construction inspector and independent asbestos consultant oversight of the construction contractor for the removal, transport, and disposal of hazardous materials;
- Special licensing and training requirements for the contractor responsible for abatement of hazardous materials;
- Securing the demolition area to prevent unauthorized entry;
- Establishing decontamination areas to ensure abatement workers do not release hazardous materials into the environment;
- Implementing dust control measures to prevent dust from leaving the site;
- Completing a Feasibility Assessment to determine the best method for removing the transite roof that controls and contains the asbestos;
- Soil sampling and testing before construction begins and after the abatement of hazardous materials from the site and removal;
- Remediation of any soils found to be contaminated in excess of regulatory standards;

- Real-time air monitoring that would be conducted by an independent hazardous materials consultant, the results of which would be compared to pre-established stop work triggers to ensure that airborne asbestos does not leave the Project site;

- Covering all trucks transporting hazardous waste materials; and

- Conducting a preconstruction public meeting that would occur when developing specific techniques that would be used to prevent hazardous materials from leaving the site during demolition and construction.

Also, as described in Response Tullock-2, EBMUD has completed similar reservoir projects throughout EBMUD's service area with no ill effects.

If, in the unlikely circumstance, there is a hazardous material release or if air monitoring exceeds limits such that the health of the community is at risk, work would be stopped and EBMUD would do an exposure assessment to determine the extent of the hazard. If a property is contaminated, EBMUD would work with the homeowner and a third party restoration contractor to develop a remediation plan, perform clean-up work, and then verify the site was safe for habitation.

In addition, to ensure direct contact and an open line of communication with EBMUD during construction, the community would be provided with contact information for an EBMUD Community Affairs Representative and a preconstruction meeting would occur when developing specific techniques that would be used to prevent asbestos from leaving the site during demolition and construction. During construction, EBMUD would post bi-weekly air monitoring summary reports on the Project website to show how the air monitoring results relate to applicable environmental and public health thresholds.

Response to Comment Tullock-4

EBMUD and its consultants are not aware of any decrease in the level of regulation, federal or otherwise, related to asbestos. Draft EIR Sections 3.2.2 (Air Quality) and 3.8.2 (Hazards and Hazardous Materials) describe federal, state, and local regulations related to air quality hazardous materials management (including asbestos control), as well as EBMUD Standard Construction Specifications and Procedures to control the release of hazardous materials that are included as part of the Project. As indicated in Draft EIR Table 3.8-2, the U. S. EPA monitors and regulates hazardous materials, including asbestos, used in structural and building components and their effects on human health. The authority for regulating asbestos has been delegated to the state and local level. The relevant state and local regulations are as listed below:

- California Code of Regulations, Title 8, Division 1, Chapter 4, Article 4, Sections 1529 and 5208: Asbestos

- Bay Area Air Quality Management District Regulation 11, Rule 2: Asbestos Demolition, Renovation and Manufacturing

In addition, as described in Draft EIR Sections 3.2.2 (Air Quality) and 3.8.2 (Hazards and Hazardous Materials), EBMUD's approach to asbestos abatement is consistent with the City of Oakland Standard Conditions of Approval (SCAs) managing asbestos, listed below:

- SCA 27: Asbestos in Structures. The project applicant shall comply with all applicable laws and regulations regarding demolition and renovation of Asbestos Containing Materials (ACM), including but not limited to California Code of Regulations, Title 8; California Business and Professions Code, Division 3; California Health and Safety Code sections 25915-25919.7; and Bay Area Air Quality Management District, Regulation 11, Rule 2, as may be amended.

Additionally, as described in Draft EIR Sections 3.2.2 (Air Quality) and 3.8.2 (Hazards and Hazardous Materials), EBMUD has the following Standard Construction Specifications and Procedures for managing asbestos:

- EBMUD Standard Construction Specification 02 82 13, Section 1.1(A) requires implementation of the following control measures:

    - Furnish all labor, materials, facilities, equipment, services, employee training and testing, permits, and agreements necessary to perform the asbestos removal in accordance with these specifications and with the latest regulations from the U.S. Environmental Protection Agency (U.S. EPA), the Occupational Safety and Health Administration (OSHA), the Bay Area Air Quality Management District (BAAQMD), the Cal/EPA Department of Toxic Substance Control, the California Department of Occupational Safety and Health (DOSH), and other federal, state, county, and local agencies. Whenever there is a conflict or overlap of the above references, the most stringent provision is applicable.

    - Section 1.1(B) requires BAAQMD to be notified at least 10 work days prior to the beginning of demolition of any asbestos containing structures. Section 1.5(B) 1A requires that a detailed plan of the procedures proposed for use in complying with the regulations included in this specification and requires that asbestos abatement be included in the Construction and Demolition Waste Disposal Plan (required in EBMUD Standard Construction Specification 01 35 44, Section 1.3(C)), as discussed in Section 3.8, Hazards and Hazardous Materials.

Response to Comment Tullock-5

As described in response to Tullock-1, soil testing was conducted around Central Reservoir and a summary of the testing activities is provided in Appendix L. EBMUD would not conduct soil testing in the surrounding community as part of the Project because, as described in Global Response 1 and Response Tullock-3, EBMUD and its contractor would have robust measures in place to prevent asbestos or any other hazardous materials from becoming airborne and migrating to the adjacent community.

As discussed in Global Response 1, sampling and testing the soil on site before construction and after removal of the Central Reservoir transite roof and liner and

Materials Storage Building would be conducted to determine if soils on the Project site contain hazardous materials above regulatory thresholds. If it is determined concentrations of hazardous materials exist that exceed regulatory thresholds, the contaminated soils would then be removed, off hauled and disposed of in accordance with all federal, state, and local regulations before earthwork activities resume.

With regard to having a dialog with the community about the soil cleanup activities conducted as part of the EBMUD Central Reservoir Asbestos Project described in Response Tullock-1, EBMUD held a community meeting on January 7, 2020, to discuss hazardous material removal at Central Reservoir. EBMUD has also provided a summary of the activities conducted as part of the EBMUD Central Reservoir Asbestos Project which is provided in Appendix L of this document. If after reviewing the report, you have any further questions, please contact the Community Affairs Representative, Laura Luong, at laura.luong@ebmud.com or at 510-287-0140.

Response to Comment Tullock-6

As described in revisions to Section 3.10 in Section 10.2 of Chapter 10, *Draft EIR Revisions,* Mitigation Measure NOI-1 has been expanded to include a temporary 6-foot high fence-mounted noise barrier along the western (including Ardley Avenue), southern, and eastern site perimeter. With implementation of Mitigation Measure NOI-1 and EBMUD standard practices and procedures applicable to all EBMUD projects, which include noise control measures, no location (or receptor) would experience noise levels in excess of the City of Oakland ordinance levels for more than a total of about 10 work days over the entire 6-year construction period.

Response to Comment Tullock-7

As described in Global Response 1 EBMUD and its contractor would have measures in place to prevent asbestos or any other hazardous materials from becoming airborne to ensure worker and public safety. Examples of measures are described in Draft EIR Section 3.8 (Hazards and Hazardous Materials), and generally include securing the demolition area to prevent unauthorized entry, removing the reservoir materials in pieces where possible to minimize the generation of dust, wetting, misting, and/or containment of the materials being demolished to control and prevent dust from leaving the site, and covering all trucks transporting waste materials to recycling and disposal facilities to prevent dust from leaving trucks.

Regardless of the roof removal means and methods, asbestos removal plans would be prepared in accordance with all federal, state, and local regulations and reviewed and approved to ensure friable material does not enter the air. Real-time air monitoring would be conducted to provide immediate information as to the effectiveness of the transite roof removal and dust control methods. The purpose of “haz mat” suits worn by demolition workers (likely to be common white Tyvek zip-up overalls) is primarily to prevent workers from having direct contact with (i.e., touching) hazardous materials. In addition, the Tyvek suits facilitate the decontamination process for the workers. When workers end a work shift and prepare to leave the work site, each worker removes the Tyvek suit while still onsite and places it in a receptacle that is then sealed and sent to a landfill.

Response to Comment Tullock-8

EBMUD would not install air monitors on private property or in homes adjacent to the Project site because it would not be an effective approach to monitoring the air. Air monitors need to be located as close to the source as practicable to protect worker and public health. For detecting dust and particulates generated by construction activities on the Project site, air monitoring at further distances (i.e., off the site or in homes) would detect lower levels of contaminants since dilution and dispersion would occur with time and distance from the construction activities. In addition, depending on the geometry of the site and wind direction, increasing the source to air monitor distance can allow contaminants that are not associated with the Project (such as from Interstate 580) to be included in the monitored levels, making it difficult or impossible to determine if an increase in dust and particulates is being caused by the Project. Placing air monitors on private property would also hinder EBMUD's ability to access, maintain, and monitor the air monitoring equipment which would potentially delay results. As described in Global Response 1, perimeter air monitoring would be performed by qualified personnel and overseen by EBMUD staff. A minimum of four monitors would be placed both up- and down-wind of the active work area during demolition activities with the potential to create dust.

As described in Response Tullock-1, soil testing has already been conducted around Central Reservoir as described in the EBMUD Central Reservoir Asbestos Project Summary which can be found in Appendix L. As discussed in Global Response 1, additional soil testing on the Project site would be conducted before and after the hazardous materials are removed and the soil tests would be compared to regulatory thresholds. If contaminated soils are found, they would then be removed, off-hauled, and disposed of properly in accordance with federal, state, and local laws and regulations before earthwork activities resume. EBMUD would not be monitoring the soil during active demolition because real-time air monitoring would provide the information necessary to ensure that hazardous materials have not migrated from the Project site to adjacent properties.

Regarding actions to be taken in the event of a hazardous material release, refer to Response Tullock-3.

Response to Comment Tullock-9

EBMUD's customers are supplied through a water system that includes over 90 miles of large diameter pipelines delivering water from Pardee Reservoir in the foothills of the Sierra Nevada, 3 local water supply reservoirs, 5 water treatment plants, 140 pumping plants, 170 distribution reservoirs (e.g., Central Reservoir), and approximately 4,200 miles of distribution pipelines throughout the service area. Approximately 70 percent of the water in each distribution reservoir is reserved as "emergency storage" which is used for fighting fires and meeting customer demands during planned or unplanned interruptions or reductions of capacity of any part of the water system. Planned interruptions or reductions in capacity may occur during maintenance or replacement of any part of the water system. Examples of unplanned interruptions or reductions of capacity (i.e., emergencies) include pipeline breaks, power or communication outages

(e.g., during Pacific Gas and Electric's Public Safety Power Shutoff events), equipment failures, and reductions in water treatment plant rates due to source water quality (e.g., when winter storms increase the turbidity, or cloudiness, of the water in Pardee Reservoir). It is not feasible to identify, collect and store information for all of the circumstances that have resulted in emergency storage being used from EBMUD's reservoirs.

Response to Comment Tullock-10

EBMUD has replaced or is planning to replace several open-cut reservoirs with cylindrical tanks, similar to the Project at Central Reservoir. Some recent examples of open-cuts that have been replaced with cylindrical tanks include Estates Reservoir in Oakland, Summit Reservoir in Berkeley/Kensington, Berryman Reservoir in Berkeley, and South Reservoir in Castro Valley. Open-cut reservoirs planned to be replaced with cylindrical tanks include Leland Reservoir in Lafayette and Piedmont Reservoir in Piedmont.

The commenter is referring to construction at two EBMUD open-cut reservoirs that were not replaced with raised tanks: Danville Reservoir which was rehabilitated by replacing the roof, and Berryman Reservoir which was demolished and replaced with a tank in the basin. Unlike the other two sites, the Central Reservoir is too low relative to the customers it serves and to other reservoirs in the same pressure zone; and unlike the Danville Reservoir site, Central Reservoir is about three times larger than required. Therefore, as described in Draft EIR Section 2.3, Project Purpose and Objectives, Central Reservoir requires replacement with new tanks with a smaller capacity and at a higher elevation to solve operational, water quality and water service reliability issues.

An independent Value Engineering (VE) Study was completed in 2016 for the Central Reservoir and evaluated and compared costs for three different tank designs.[4] As described in Draft EIR Section 4, *Alternatives,* different tank designs included steel tanks, concrete tanks, and a reinforced concrete basin design at the Central Reservoir site. Steel tanks are roughly the same cost as concrete tanks, but concrete tanks require less long-term maintenance which results in lower overall costs and fewer impacts (including lower roof profile) to the community compared to steel. The reinforced concrete basin alternative is less cost effective than the Project, requires additional monitoring, permitting, and other operational costs and would have a roof that would be approximately 14-feet higher than the Project. Therefore, the recommended Project design, three concrete tanks, was selected because it met all of the Project objectives and was the least expensive alternative with the lowest overall impact on the community.

Response to Comment Tullock-11

The commenter presumably is referring to the construction methods that would be utilized for the Project. The construction methods for the Project are described in the Draft EIR Chapter 2, *Project Description,* Section 2.6. As discussed in Global

[4] The Value Engineering Study is part of the administrative record for the Project and available for review on request.

Response 1, a Feasibility Assessment would be prepared for removal of the Central Reservoir asbestos-containing transite roof. The Feasibility Assessment would be prepared by an independent State licensed experienced and knowledgeable asbestos consultant in conjunction with a State licensed asbestos abatement contractor with demonstrated experience with similar projects. The Feasibility Assessment would identify all potential methods for removal of the transite roof panels and would select the best method that controls and contains asbestos based on the current condition of the transite panels and an understanding of the method used to encapsulate the roof. The potential methods that would be evaluated by the Feasibility Assessment include: wetting and misting, removal from beneath the reservoir roof, full containment (i.e., tenting), modular (partial) containment (i.e., tenting), encapsulation or enclosure, and other options based on the current state of the art technology. The contractor responsible for the removal of the transite roof would be required to implement the selected removal approach from the Feasibility Assessment. The independent consultant would also report to EBMUD during the removal of the transite roof and ensure the contractor's work is performed in a manner that is protective of workers and public health, compliant with regulatory requirements, and performed consistent with the selected method from the Feasibility Assessment. Also as discussed in Global Response 1, EBMUD would seek future public participation when developing specific techniques that would be used to prevent asbestos from leaving the site during demolition and construction.

The contractor would be selected once the Project has completed the environmental review process and the Project is designed. Pursuant to the California Public Contract Code and Chapter 6, Article 3 of the Municipal Utility District Act of the State of California, the contract must be awarded to the lowest responsive and responsible bidder. However, EBMUD enforces all of its contracts and the low-bid contractor would be required to comply with all Project requirements.

Response to Comment Tullock-12

An email list was created as part of the environmental review process and will continue to be used to provide information electronically to the community. Please contact the community affairs representative to be added the list: Laura Luong, laura.luong@ebmud.com or 510-287-0140.

Response to Comment Tullock-13

Impacts to wildlife are discussed in Draft EIR Section 3.3 (Biological Resources), which presents information from the investigations of biological resources, including wildlife, undertaken for the Project. Specifically, Section 3.3.5, Impact Analysis (starting on Draft EIR page 3.3-33), analyzes the Project's potential to have substantial adverse effects on special-status species, riparian habitat or other sensitive natural communities, wetlands, and the movement or migration of fish and wildlife. Several databases and literature pieces were reviewed, and surveys of the Project site were conducted as described in Draft EIR Section 3.3.2, Data Collection (refer also to the 29 references used in development of the section that are listed on Draft EIR pages 3.3-48 through 3.3-51). As the information related to wildlife was included and discussed in the Draft EIR for the community to review, no new information is available to present to the community.

Response to Comment Tullock-14

EBMUD met with the following staff from the City of Oakland about the Project: Darin Ranelletti (Planning), Wlad Wlassowsky (Transportation), Ryan Russo (Transportation), Christine Daniel (City Administration), Jason Mitchell (Infrastructure and Operations), and Susan Kattchee (Public Works).

Response to Comment Tullock-15

This comment does not concern issues regarding the adequacy of the Draft EIR under CEQA. Leaks in Central Reservoir have not triggered or contributed to the need for relocation of any neighborhood residents. To the extent the commenter is referring to the 2006 landslide near McKillop Road, piezometers installed near Central Reservoir and in the slide area showed that there was no correlation between reservoir levels and groundwater levels, and therefore, no connection between water leaking from the reservoir and soil conditions that led to the landslide.

8.5 Responses to Public Meeting Comments

8.5.1 Public Meeting #1 – December 4, 2019

Response to Comment PM1-1

The main purpose/benefit of the Project is to replace Central Reservoir, which has reached the end of its useful life and requires removal and disposal of PCBs in the reservoir's interior coating. Replacing the reservoir would also alleviate concerns related to a failing reservoir lining; a roof that does not meet current seismic codes; potential leakage in the upper areas of the panel craft lining, resulting in reduced operating levels; and difficult water quality operations as the existing reservoir is about three times larger than required and is located at an elevation that is too low relative to the customers it serves and other reservoirs in the Central Pressure Zone, creating unusable storage. The Project includes three tanks to be located approximately 20 feet higher that the existing reservoir which would allow more efficient water flow throughout the Central Reservoir service area for daily operations and emergencies. Draft EIR Section 2.3 discusses the purpose and objectives of the Project.

Response to Comment PM1-2

Refer to Response Tullock-14 regarding who EBMUD met with at the City of Oakland.

Response to Comment PM1-3

As noted in Draft EIR Section 2.6.1, construction staging during the demolition and substructure and tank construction phases would be within the existing reservoir property, at the East 30th Street entrance and along the existing auxiliary embankment at the north end of the site. Staging for the Project during the tank construction phase would also be located within the existing reservoir property, at the 25th Avenue entrance, which would

also be used during the site restoration phase. Draft EIR Figure 2-12 shows the locations of construction staging and laydown, parking, and trailer.

Response to Comment PM1-4

The Draft EIR was sent to the 30 federal, state, and local agencies and entities for review and comment noted below. Of the 30 agencies, the California Department of Transportation and the Department of Toxic Substances Control submitted comments which can be found in 8.2 Agency Comments.

1. Bay Area Rapid Transit (BART)
2. Oakland Unified School District
3. Manzanita Community School
4. Manzanita SEED Elementary
5. Noel Gallo, Oakland City Councilmember, District 5
6. Libby Schaaf, Oakland Mayor
7. Friends of Sausal Creek
8. Bike East Bay
9. The Unity Council
10. Housing Authority of the City of Oakland
11. Alameda County Flood Control
12. Department of Toxic Substance Control - Barbara A. Lee, Director
13. State Water Resources Control Board, San Francisco District - Marco Pacheco
14. Caltrans District 4 Office of Transit & Community Planning
15. Division of Safety of Dams (DSOD)
16. Bay Area Air Quality Management District (BAAQMD)
17. Alameda County Public Works
18. San Francisco Bay Regional Water Quality Control Board (SFBRWQCB)
19. City of Oakland Planning & Building, William Gilchrist
20. Oakland Transportation, Wladimir Wlassowsky, Transportation Services Division Manager
21. City of Oakland, Planning and Public Works
22. City of Oakland, Parks and Recreation Department
23. Valentine Lopez, Chairperson, Amah Mutsun Tribal Band
24. Katherine Erolinda Perez, Northern Valley Yokuts Tribe
25. Irenne Zwierlein, Chairperson, Amah/Mutsun Tribal Band
26. Ann Marie Sayers, Chairperson, Indian Canyon Mutsun Band of Costanoan
27. Andrew Galvan, The Ohlone Indian Tribe
28. Charlene Nijmeh, Chairperson, Muwekma Ohlone Indian Tribe of the SF Bay Area
29. Alameda Country (AC) Transit
30. Native American Heritage Commission

Also, the Governor's Office of Planning and Research sent the Draft EIR to the following agencies for review (some of which are duplicative with the list above):

1. Bay Area Air Quality Management District (BAAQMD)
2. California Emergency Management Agency

3. Caltrans District #4
4. Fish and Game Region #3
5. Regional Water Quality Control Board Region #2
6. Department of Toxic Substances Control
7. City of Oakland Planning, Public Works, and Recreation
8. Division of Safety of Dams
9. Alameda County Flood Control

Response to Comment PM1-5

The current Central Reservoir roof does not meet current seismic codes. All Project elements would be designed and constructed based on current seismic code to ensure that facilities meet the latest seismic requirements. Draft EIR Section 3.6.2 discusses the regulatory framework, regarding geology, soils, and seismicity in the Project area.

Response to Comment PM1-6

As indicated in Draft EIR Section 2.6.2, construction would typically occur between 7:00 a.m. and 7:00 p.m., Monday through Friday. On the days when large continuous concrete pours are required for tank construction (approximately 170 days over the 6-years of construction), construction may also need to begin at 6:00 a.m. and concrete delivery trucks could arrive at the site as early as 6:00 a.m.

Response to Comment PM1-7

It is not feasible for murals or other designs to be painted onto the tanks due to the effort and cost that would be necessary to maintain the murals. EBMUD does not have to staff to restore murals on the tanks if they are tagged or when they degrade. Murals on tanks require special skills, tools, and materials to repair if damaged or vandalized. Also, murals would need to be removed and replaced when EBMUD performs maintenance on the walls of the tanks in the future.

Response to Comment PM1-8

Please refer to Global Response 1 for details about steps that would be taken to protect worker and public safety during roof demolition and asbestos handling and related earth moving activities for the Project. These steps include:

- Complying with federal, state and local regulatory requirements for handling hazardous materials (i.e., asbestos);
- Implementing EBMUD's construction practices and procedures;
- EBMUD's construction inspector and independent asbestos consultant oversight of the construction contractor for the removal, transport, and disposal of hazardous materials;
- Special licensing and training requirements for the contractor responsible for abatement of hazardous materials;

- Securing the demolition area to prevent unauthorized entry;
- Establishing decontamination areas to ensure abatement workers do not release hazardous materials into the environment;
- Implementing dust control measures to prevent dust from leaving the site;
- Completing a Feasibility Assessment to determine the best method for removing the transite roof that controls and contains the asbestos;
- Soil sampling and testing before construction begins and after the abatement of hazardous materials from the site and removal;
- Remediation of any soils found to be contaminated in excess of regulatory standards;
- Real-time air monitoring that would be conducted by an independent hazardous materials consultant, the results of which would be compared to pre-established stop work triggers to ensure that airborne asbestos does not leave the Project site;
- Covering all trucks transporting hazardous waste materials; and
- Conducting a preconstruction public meeting that would occur when developing specific techniques that would be used to prevent hazardous materials from leaving the site during demolition and construction.

With regard to mitigating health impacts, in the unlikely circumstance that there is a hazardous material release or if air monitoring exceeds limits such that the health of the community is at risk, work would be stopped and EBMUD would do an exposure assessment to determine the extent of the hazard. If a property is contaminated, EBMUD would work with the homeowner and a third party restoration contractor to develop a remediation plan, perform clean- up work, and then verify the site was safe for habitation.

Response to Comment PM1-9

This comment was provided during the first public meeting held on December 4, 2019. In response to this comment, a second public meeting was held on January 7, 2020 to specifically address the community's concern about air quality and hazardous materials. EBMUD and its consultant, Environmental Science Associates had several staff members present that are specialists in these subject areas to present information and answer questions.

Response to Comment PM1-10

A noise barrier constructed in the middle of the site during construction is not feasible because such a barrier would interfere with Project construction. Furthermore, a noise barrier in the middle of the site would do little to mitigate noise at adjacent receptors because the most impactful noise generating activities occur around the site perimeter.

A noise barrier along the sidewalk on Ardley Avenue could potentially reduce noise levels, but it would block the sidewalk from pedestrian access and it would require relocation of an AC transit bus stop, power poles, and signage. Also, significant tree trimming would be required to accommodate a sound wall on the sidewalk higher than 6-feet which would reduce the amount of visual screening provided by the trees increasing the aesthetic impacts from Ardley Avenue and potentially impact the health of the trees. Therefore, a noise barrier on the sidewalk along Ardley Avenue is not feasible and would cause new impacts on visual resources, pedestrian access and public transportation.

Instead of a noise barrier in the middle of the site or along the sidewalk on Ardley Avenue, in response to requests from the community and as described in revisions to Section 3.10 in Section 10.2 of Chapter 10, *Draft EIR Revisions*, EBMUD has expanded Mitigation Measure NOI-1 to include a temporary 6-foot high fence-mounted noise barrier along the western (including Ardley Avenue), southern, and eastern site perimeter. For Ardley Avenue, the fence-mounted noise barrier would reduce noise levels by approximately 5 dBA without closing the sidewalk or relocating the AC transit bus station. The revised noise levels are shown in Section 10.2 of Chapter 10, *Draft EIR Revisions*.

With implementation of Mitigation Measure NOI-1 and EBMUD standard practices and procedures applicable to all EBMUD projects, which include noise control measures, no location (or receptor) would experience noise levels in excess of the City of Oakland ordinance levels for more than a total of about 10 work days over the entire 6-year construction period.

Response to Comment PM1-11

As discussed in Response RDS-9, the Redwood Day School Access Driveway is an optional part of the Project that is contingent on Redwood Day School obtaining City of Oakland approval, obtaining all necessary permits, and complying with Mitigation Measure TRA-1 which requires that the Redwood Day School conduct an operational and safety analysis. If the design option is approved, the decision to allow Redwood Day School to use the driveway prior to completion of the Project would be made during the design phase and be based on whether the contractor would need the area to access the site and construct the Project.

Response to Comment PM1-12

The driveway would be private. Draft EIR Section 2.8.2 includes more information about the potential Redwood Day School Access Driveway.

Response to Comment PM1-13

Shrubbery cannot be added in front of the perimeter fencing due to EBMUD security practices. Shrubbery creates a visual barrier that would impede EBMUD and the public's ability to detect intruders climbing over the fence and it can hide holes in the fence that can be used for intruders to easily access the site. To enhance aesthetics, a berm and several trees would be constructed along Ardley Avenue, inside the fenceline, to screen

the Project site. Draft EIR Section 2.5.9, Screening and Landscaping, includes more information about the Project's landscaping.

8.5.2 Public Meeting #2 – January 7, 2020

Response to Comment PM2-1

As indicated in Draft EIR Chapter 2, *Project Description*, the Project includes demolition of the existing reservoir, roof, lining, and material storage building. As indicated in Draft EIR Section 2.6.3, construction is estimated to take approximately 6 years, beginning with the demolition phase. After reservoir demolition, a geotechnical investigation would be completed to confirm the characteristics of the subsurface soil followed by construction. Once construction is completed, start-up and testing would take place, and site restoration is the final step.

Response to Comment PM2-2

The reservoir is being raised because it is located at an elevation that is too low relative to the customers it serves and other reservoirs in the Central Reservoir service area, creating unusable storage.

Response to Comment PM2-3

As indicated in Draft EIR Chapter 2, *Project Description*, the proposed tanks would be approximately 20 feet higher than the existing reservoir. Impacts to views in the Project area are analyzed in Draft EIR Section 3.1, Aesthetics, specifically Impact AES-1. Impacts related to scenic vistas were determined to be less than significant.

Response to Comment PM2-4

As discussed in Global Response 1, a Feasibility Assessment would be completed to determine the method for removal of the Central Reservoir asbestos-containing transite roof panels during the design phase. At the beginning of the construction phase, once the contractor has been selected, the contractor would submit detailed, site specific plans for how certain aspects of construction would take place (such as for hazardous materials handling) and EBMUD would review and approve the plans. For hazardous material handling, the plans would include the location and layout of containment and decontamination areas, the sequencing of work, the equipment to be used, the handling of materials, a disposal plan including location of approved disposal site, and a detailed description of the methods to be employed to control pollution and to monitor and prevent dust and particulate matter from leaving the site. After the draft plans are submitted, EBMUD would hold a pre-construction meeting with neighbors to present and obtain input on the plans. EBMUD would consider the input received from the community when reviewing the draft plans.

Because the transite removal method has not been determined yet, it is not yet known if the Central Reservoir transite removal method determined by the Feasibility Assessment would be the same as other sites.

Hazardous material removal techniques were also discussed at the January 7, 2020 Public Meeting and the presentation slides are available on the Project website at www.ebmud.com/central.

Response to Comment PM2-5

As described in Draft EIR Section 3.8 (Hazards and Hazardous Materials) and in revisions to Section 3.8 (Hazards and Hazardous Materials; refer to Section 10.2 of Chapter 10, *Draft EIR Revisions*), sampling and testing for airborne asbestos fibers would take place daily, but requires laboratory analysis which can take up to 72 hours to obtain results. Because particulate air monitoring would detect asbestos fibers (among other particulates, such as dust), real-time monitors would be used for airborne particulate monitoring to provide real-time detection of particulates that could be an indication of asbestos fibers. This 2-part air monitoring program would be conducted during any dust generating activities, including removal of the transite roof, to provide immediate information as to the effectiveness of the transite roof removal and dust control methods. A study would be completed prior to any construction activities to establish activity specific real-time particulate air monitoring trigger levels (i.e., stop work, increase watering) that would be enforced on the contractor. These airborne particulate action levels and stop work thresholds would be established to ensure the perimeter airborne asbestos fiber action level is not exceeded based on a correlation between airborne particulate concentrations and potential asbestos fiber concentrations. In the event that real-time air monitoring indicates an increase in particulates that exceeds stop work thresholds, EBMUD's construction inspector would stop work until the cause of the particulates are identified and corrected before resuming work again.

Response to Comment PM2-6

Ingestion and dermal contact with PCBs are the most common pathways of exposure to humans. Draft EIR Sections 3.2 (Air Quality) and 3.8 (Hazards and Hazardous Materials) contain information about PCBs and other hazardous materials.

Response to Comment PM2-7

EBMUD is not aware of any studies of health effects related to reservoir repair/replacement projects including the Summit Reservoir replacement. EBMUD has implemented numerous reservoir replacement projects similar to the Central Reservoir throughout its system (including Summit Reservoir located in Berkeley and Danville Reservoir located in Danville) as well as during the Central Reservoir Asbestos Project (e.g., the encapsulation of the Central Reservoir transite roof), each of which included collecting air monitoring data to ensure worker and public safety. EBMUD contracted with an independent consultant with expertise in asbestos abatement to review and summarize the activities conducted as part of the Central Reservoir Asbestos Project, including the ambient air monitoring. The summary is provided in Appendix L and explains that there was no health risk to the workers or the general public during the Central Reservoir Asbestos Project.

Response to Comment PM2-8

Draft EIR Section 2.6, Project Construction, describes that the existing reservoir water would be drained by gravity or pumped using a temporary diesel-powered pump to the distribution system as customers use water. Water at the bottom of the reservoir would be sent to the existing stormwater system. EBMUD would treat and dechlorinate the water before discharge into the stormwater system in compliance with EBMUD's Environmental Compliance Manual and state and federal regulatory requirements.

Response to Comment PM2-9

Draft EIR Chapter 1, *Introduction,* provides a description of the Project and an analysis of the potential environmental effects of the Project. Draft EIR Chapter 2, *Project Description*, gives an overview of the scope of Project construction, construction sequencing, schedule, and operations to the extent needed to understand the Project's potential environmental effects. The Draft EIR addresses the potentially significant adverse environmental impacts that may be associated with construction and operation of the Project and identifies appropriate and feasible mitigation measures and alternatives that may be adopted to reduce or avoid significant impacts. Subsequent to publication of the Draft EIR, this Responses to Comments document responds to public comments on the Draft EIR and indicates any necessary changes to text in the Draft EIR. Once the Project is approved, design and construction would follow. As discussed in Global Response 1, a Feasibility Assessment would be completed to determine the method for removal of the Central Reservoir asbestos-containing transite roof panels during the design phase. At the beginning of the construction phase, once the contractor has been selected, the contractor would submit detailed, site-specific plans for how certain aspects of construction would take place (such as for hazardous materials handling) and EBMUD would review and approve the plans. For hazardous material handling, the plans would include the location and layout of containment and decontamination areas, the sequencing of work, the equipment to be used, the handling of materials, a disposal plan including location of approved disposal site, and a detailed description of the methods to be employed to control pollution and to monitor and prevent dust and particulate matter from leaving the site. As discussed in Global Response 1, after the draft plans are submitted, EBMUD would hold a pre-construction meeting with neighbors to present and obtain input on the plans. EBMUD would consider the input received from the community when reviewing the draft plans.

Response to Comment PM2-10

The detailed design is expected to begin in 2024 and be completed in 2026. The public was invited to participate in the landscape design concept portion of the site layout. EBMUD conducted the first community meeting on September 28, 2017 to receive community input on the design concepts. After refining the design concepts based on community input, a second community meeting was held on February 13, 2018 to present the final design concept. Going forward, EBMUD will hold a pre-construction meeting with neighbors to present and obtain input on the contractor's plans (such as for hazardous materials handling), once submitted. EBMUD will consider the public's input when reviewing the draft plans, as described in Global Response 1.

Response to Comment PM2-11

EBMUD monitors the underdrain flows from its reservoirs and evaluates the flow for changes over time which would indicate a leak in the tanks. The new tanks would be designed and constructed to prevent leaks. If unforeseen circumstances cause leakage, a new underdrain system beneath the new tanks that would be installed as part of the Project would collect any leaked water, as described in Draft EIR Chapter 2, *Project Description*. The underdrain consists of underground pipelines that would transport any leaked water to the stormdrain system.

Response to Comment PM2-12

The Project would generate noise typical of heavy construction. For example, equipment such as compactors, generators, and pipe cutters and vehicles such as earth movers and concrete trucks would generate noise. As described in Draft EIR Section 3.10 (Noise and Vibration), EBMUD has incorporated a range of noise control measures such as requiring the contractor to develop a Noise Control and Monitoring Plan and implement noise control measures (e.g., mufflers or noise-attenuating shields) on all equipment. In addition, in response to requests from the community, and as described in revisions to Section 3.10 in Section 10.2 of Chapter 10, *Draft EIR Revisions,* Mitigation Measure NOI-1 has been expanded to include a temporary 6-foot high fence-mounted noise barrier along the western, southern, and eastern site perimeter. With implementation of Mitigation Measure NOI-1 and EBMUD standard practices and procedures applicable to all EBMUD projects, which include noise control measures, no location (or receptor) would experience noise levels in excess of the City of Oakland ordinance levels for more than a total of about 10 work days over the entire 6-year construction period.

Operation of the Project would not generate a new source of permanent, ambient noise, as discussed in Draft EIR Section 3.10 (Noise and Vibration).

Response to Comment PM2-13

The driveway that connects Sheffield Avenue and Ardley Avenue is, as described in Draft EIR Section 2.8.2, the potential Redwood Day School Access Driveway. The driveway would be approximately 500-foot long and 10-foot wide and located on EBMUD property. The driveway would be used by the Redwood Day School patrons for child drop off and pick up. As discussed in Response RDS-9, the Redwood Day School Access Driveway is an optional part of the Project that is contingent on Redwood Day School obtaining City of Oakland approval, obtaining all necessary permits, and complying with Mitigation Measure TRA-1 which requires that the Redwood Day School conduct an operational and safety analysis. If this option is approved, the decision to allow Redwood Day School to use the driveway prior to completion of the Project would be made during the design phase and be based on whether the contractor would need the area to access the site and construct the Project.

Response to Comment PM2-14

Approximately 121 trees would be removed to accommodate Project construction and 22 would be removed because they are in poor health. Appendix D in the Draft EIR, Arborist Report for the EBMUD Central Reservoir Replacement Project, includes the results of a tree survey that was completed in March 2017, which contains maps that depict trees that are recommended for removal based on tree condition and trees that would be retained due to health, but potentially removed by Project development. Appendix C in the Draft EIR, Planning Phase Architectural Design Report, includes multiple conceptual site plans that were considered, as well as the final concept and design. The Central Reservoir Site Plan depicts new trees that would be planted to supplement existing trees, and is included as Figure 9A of the Planning Phase Architectural Design Report, as well as Draft EIR Figures ES-1 and 2-3. Proposed trees are indicated with a solid green center, while existing trees are indicated with an open center.

Response to Comment PM2-15

As described in Response Tullock-1, soil testing was conducted around Central Reservoir as described in the EBMUD Central Reservoir Asbestos Project Summary (refer to Appendix L). EBMUD would not conduct soil testing in the surrounding community as part of the Project because, as described in Global Response 1, EBMUD and its contractor would have measures in place to prevent asbestos or any other hazardous materials from becoming airborne and migrating to the adjacent community.

Please refer to Global Response 1 for details about steps that would be taken to handle hazardous materials during demolition and construction of the Project to ensure asbestos does not contaminate soil in the surrounding neighborhood. These steps include:

- Complying with federal, state and local regulatory requirements for handling hazardous materials (i.e., asbestos);
- Implementing EBMUD's construction practices and procedures;
- EBMUD's construction inspector and independent asbestos consultant oversight of the construction contractor for the removal, transport, and disposal of hazardous materials;
- Special licensing and training requirements for the contractor responsible for abatement of hazardous materials;
- Securing the demolition area to prevent unauthorized entry;
- Establishing decontamination areas to ensure abatement workers do not release hazardous materials into the environment;
- Implementing dust control measures to prevent dust from leaving the site;

- Completing a Feasibility Assessment to determine the best method for removing the transite roof that controls and contains the asbestos;
- Soil sampling and testing before construction begins and after the abatement of hazardous materials from the site and removal;
- Remediation of any soils found to be contaminated in excess of regulatory standards;
- Real-time air monitoring that would be conducted by an independent hazardous materials consultant, the results of which would be compared to pre-established stop work triggers to ensure that airborne asbestos does not leave the Project site;
- Covering all trucks transporting hazardous waste materials; and
- Conducting a preconstruction public meeting that would occur when developing specific techniques that would be used to prevent hazardous materials from leaving the site during demolition and construction.

Also as discussed in Global Response 1, sampling and testing the soil on site before construction and after removal of the Central Reservoir transite roof and liner and Materials Storage Building would be conducted to determine if soils on the Project site contain hazardous materials above regulatory thresholds. If contaminated soils are found, they would then be removed and disposed of in accordance with all federal, state, and local regulations before earthwork activities resume.

Response to Comment PM2-16

Although the Project site has not been tested for lead, as indicated in Draft EIR Section 3.8 (Hazards and Hazardous Materials), it is assumed that lead-based paint may be present at the on-site material storage building due to the age of the building. The material storage building would be tested prior to demolition, and EBMUD Standard Construction Specification 02 83 13, Lead Hazard Control Activities, would be implemented to ensure that before the start of demolition, the contractor would prepare a Lead Demolition Plan detailing handling, engineering control, removal, and disposal procedures for lead-containing materials.

Response to Comment PM2-17

Draft EIR Section 3.3 (Biological Resources) indicates that Sausal Creek and its riparian corridor are outside of the construction footprint. In addition, except for nesting birds and roosting bats, no special-status species have the potential to be present at the Project site (where active construction would occur). As described in the Draft EIR Section 3.3 (Biological Resources), under Impact BIO-1, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 44, Environmental Requirements, Section 3.8, Protection of Birds Protected Under the Migratory Treaty Act and Roosting Bats, which include provisions for preconstruction biological

reconnaissance, including nesting bird surveys, biologic monitoring during construction, and delineation of active bird nest avoidance buffer zones. In addition, as indicated in the Draft EIR Section 3.3 (Biological Resources), under Impact BIO-4, during both the construction and operational phases, the activities proposed at the Project site would not interfere substantially with the movement of wildlife species or impede the use of wildlife nursery sites. EBMUD has not had an issue with animal displacement on past construction projects.

Response to Comment PM2-18

Draft EIR Section 2.6.2, Construction Equipment and Trips, describes truck routes and indicates that truck traffic for off-hauling, large equipment deliveries, and material deliveries would access the Project site via the most direct route using the City of Oakland designated truck routes on 23rd Avenue and Fruitvale Avenue between the Project site and I-880. Construction workers would likely access the Project site via I-580. Both the main entrance to the reservoir, at the northwest corner of the 25th Avenue and East 29th Street intersection, as well as the auxiliary entrance on East 30th Street would be used during construction.

As described in the Draft EIR Section 3.12 (Transportation and Circulation), compared to existing conditions, average intersection delay would remain virtually unchanged and the LOS would remain the same at all study intersections during construction. Therefore, traffic during construction would not present substantial differences compared to existing conditions and impacts would be less than significant.

Response to Comment PM2-19

There would be no interruption of EBMUD service during construction of the Project. Table 2-1, Project Objectives, in the Draft EIR states an objective of the Project is to "maintain water service and emergency flows during construction."

CHAPTER 9
Comment Letters

The comment letters and other submittals received regarding the Draft EIR are included in this chapter.

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DEPARTMENT OF TRANSPORTATION
DISTRICT 4
OFFICE OF TRANSIT AND COMMUNITY PLANNING
P.O. BOX 23660, MS-10D
OAKLAND, CA 94623-0660
PHONE (510) 286-5528
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

December 30, 2019

SCH #2018042078
GTS # 04-ALA-2018-00478
GTS ID: 10460
ALA/580/PM 41.85

Aaron Hope, Project Manager
East Bay Municipal Utility District
375 Eleventh Street, MS 701
Oakland, CA 94623-1055

Central Reservoir Replacement Project – Draft Environmental Impact Report (DEIR)

Dear Aaron Hope:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Central Reservoir Replacement Project. We are committed to ensuring that impacts to the State's multimodal transportation system and to our natural environment are identified and mitigated to support a safe, sustainable, integrated and efficient transportation system. The following comments are based on our review of the November 2019 DEIR.

Project Understanding

The East Bay Municipal Utility District (EBMUD) is proposing the Central Reservoir Replacement Project, which includes replacement of the existing 154-million gallon (MG), open-cut Central Reservoir with three new 17-MG concrete tanks within the existing reservoir basin. The project includes removal of vegetation and demolition of the existing reservoir, roof, lining, and material storage building, followed by removal of a portion of the reservoir's main embankment, construction of a reinforced tank foundation system, three 17-MG concrete tanks approximately 20 feet higher than the existing reservoir, a new rate control station, a valve structure, service road and site paving, a bioretention area, and security fencing all within the existing reservoir property. The project site design, with community input, incorporates existing landscaping, a mix of earthen berms, trees and shrubs to screen the tanks and emphasize the natural setting at the perimeter of the site while balancing earthwork. The Project also includes an

1

access driveway to connect the Redwood Day School parking area to Ardley Avenue. The project is directly adjacent to Interstate (I-) 580 and regional access for trucks is provided from I-880. 1 cont.

Hydraulics

Please provide a cross sectional view taken across eastbound I-580 and extending across the proposed Redwood School Access Driveway. The proposed access driveway shall not drain onto the existing freeway cut slope and shall be sloped away from the highway. 2

Highway Operations

Please state the construction traffic impacts on the I-880 off-ramps at High Street, 23rd Avenue, 29th Avenue, and Kennedy Street during the AM and PM peak hours. Additionally, state what impact will the expected average of 28 truck trips per hour have on the I-880 off-ramp intersections. 3

Landscape Architecture

Caltrans recommends that the protection of the existing trees during construction be monitored by a certified arborist. Also, planting and grading around the facility should include slope stabilizing ground covers, tree groves where the slope and access roads allow, and rounded, planted hills as seen from the streets. 4

Lead Agency

As the Lead Agency, EBMUD is responsible for all project mitigation, including any needed improvements to the State Transportation Network (STN). The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures. 5

Encroachment Permit

Please be advised that any work or traffic control that encroaches onto the State right-of-way (ROW) requires a Caltrans-issued encroachment permit. To obtain an encroachment permit, a completed encroachment permit application, environmental documentation, six (6) sets of plans clearly indicating the State ROW, and six (6) copies of signed, dated and stamped (include stamp expiration date) traffic control plans must be submitted to: Office of Encroachment Permits, California DOT, District 4, P.O. Box 23660, Oakland, CA 94623-0660. To download the permit application and obtain more information, visit https://dot.ca.gov/programs/traffic-operations/ep/applications. 6

Thank you again for including Caltrans in the environmental review process. Should you have any questions regarding this letter, please contact Andrew Chan at 510-622-5433 or andrew.chan@dot.ca.gov.

Sincerely,

Mark Leong
District Branch Chief
Local Development - Intergovernmental Review

c: State Clearinghouse

From: Ahrling, Ryan@DTSC <Ryan.Ahrling@dtsc.ca.gov>
Sent: Monday, January 13, 2020 4:50 PM
To: centralreservoir
Subject: DTSC Review - CEQA EIR Central Reservoir Replacement Project

Hello,
I represent the Department of Toxic Substance Control, a responsible agency, reviewing the Draft Environmental Impact Report (EIR) for the East Bay Mud Municipal Utility District Reservoir Replacement Project. Upon review of the document, DTSC requests the following comments be addressed in the revised EIR:

- A discussion of Polychlorinated Biphenyls (PCBs) is included in Section 3.8 of the Draft EIR. A discussion of residual PCBs in soil is not included within this section. As the reservoir lining is noted to be worn in certain areas, the likelihood of PCB contamination within the underlying soil is possible. Include a discussion of potential residual soil contamination from the reservoir liner within the revised EIR report. 1

Please feel free to reach out with any questions or concerns.

Best,
Ryan Ahrling

Environmental Scientist
Site Mitigation and Restoration Program
Department of Toxic Substances Control
700 Heinz Avenue
Berkeley, California 94710-2721
(510) 540-3817
Ryan.Ahrling@dtsc.ca.gov

REDWOOD DAY

RDS
KINDERGARTEN-8TH GRADE
3245 Sheffield Ave Oakland, CA 94602 510.534.0800 rdschool.org

Dear EBMUD:

We are writing to address several issues outlined in the EIR for the Central Reservoir project that will significantly impact Redwood Day School (the "School). Our comments relate to air quality, noise, traffic, and circulation.

Redwood Day serves approximately 400 children, some as young as five years old, and approximately 80 faculty and staff throughout the academic year and to some extent during our winter, spring and summer breaks. In addition, members of the greater Oakland community use our facilities when school is not in session.

Our concern is always with those we serve, who in many respects represent our most vulnerable populations. We must take care to ensure that the environment in which they live, learn, and play is adequately protected. 1

Air Quality

Given that this project will occur a few feet from our campus and that, as noted on page 3-2-26 of the EIR, the maximum offsite concentration of certain toxic air contaminants (TACs) will occur on the School's site, we request that at least one of the four required air monitoring stations be installed on our campus. However, we feel it would be most protective to locate two air monitoring stations on campus in order to adequately monitor air quality conditions at both our lower school, at the east side, and our middle school, at the west side, of our campus. 2

We also request that all results of air quality analysis performed by the California Department of Health Services be shared with the School as soon as they become available and at regular intervals. These measures will allow us to confirm and assure our community that healthy air quality standards are being maintained. We request that EBMUD provide a community liaison who can interpret air quality information for our school community and neighbors and address questions and concerns they may have. 3

Additionally, we ask that the School receive adequate notification of the planned dates on which the demolition of asbestos containing structures will take place. We also request that during these times EBMUD undertake monitoring of projected and current conditions (e.g., wind direction) that could result in higher exposures on the school site. We request that this information be made available in a timely manner to enable us to make appropriate decisions regarding school operations and/or whether to reduce or eliminate outdoor activities in accordance with our unhealthy air protocols. 4

Noise

While our School is continuously occupied from 7 am to 6:30 pm, our students receive instruction from 8:15am to 3:15pm daily. Excessive noise during these hours will severely disrupt our program, limiting students' ability to concentrate, learn, and study. Table 3.10-2 shows that construction noise will be at the greatest levels during these hours. We request that EBMUD identify available options to modify the schedule to reduce noise during these hours. 5

We appreciate the proposed 16ft noise barrier being planned as a mitigation measure. However, we are concerned that this will be inadequate. As also noted in table 3.10-2, there will be times when daytime noise levels on our campus exceed the maximum allowable noise thresholds for a School, even with this barrier. As mentioned in the EIR, there will be particular disruption to the second story classrooms of one of our middle school buildings. Note however, the two story building used by our lower school will be significantly impacted as well. Because of this, we request that EBMUD increase the height of the noise barrier to ensure noise levels comply with the ordinance and, where appropriate, to a height above our facilities. We also request that we are able to review and comment on the contractors Noise Control and Monitoring Plan once developed. 6

Finally, we would like a schedule of planned construction activities a minimum of two weeks in advance so that we can plan exams around the noisiest periods of time and ask that where possible, the activities generating the highest noise levels be scheduled either before or after school hours or on days when the School is not in session. This will allow us to successfully continue our program during the extensive six-year construction period. 7

Traffic and Circulation

Redwood Day is located in a residential neighborhood and we are always working to alleviate traffic congestion. Neighborhood traffic is most congested at peak times when students arrive and leave school (i.e., 7:45 – 8:30am and 2:45- 3:45pm). As the analysis of peak traffic volumes on page 3-12-2 depicts, Sheffield Avenue north of the School accounts for a significant percentage of the daily volume of traffic in the area. Therefore, we request that the movement of heavy trucks and machinery be scheduled outside of these hours, and away from Sheffield Avenue to reduce the impact on traffic congestion on neighbors and the School community. We request that EBMUD identify multiple points of ingress and egress to minimize this harmful impact on the School, its neighbors, and the community of which it is a part. 8

Finally, we want to express our appreciation to EBMUD for including a design option in the EIR that would allow for the School's use of the access driveway to Ardley. This access would provide a significant benefit to the local neighborhood as it will enable vehicles to queue on private property, rather than public streets, during school drop-off and pick-up times. During public hearing #3 it was noted that the timing of the School's use of the driveway will be considered during the detailed design phase of the project. Given the disruption that will be caused by EBMUD's protracted construction and given the neighborhood's on-going concerns regarding traffic, we believe that it will be a significant contribution to the overall community if Redwood Day is able to use the driveway as soon as possible. For this reason, we encourage EBMUD to consider all options that will allow the School to utilize this driveway as early as possible and even during a pre-development period. This would allow us to develop an effective circulation pattern and reduce the school's impact on neighborhood congestion. This improvement will significantly mitigate the increase in traffic expected to result from the construction activities. 9

We appreciate your consideration of the items noted above and look forward to your response.

Sincerely,

John Loeser
Head of School

Deann Hays
CFOO

From: Deann Hays [mailto:dhays@rdschool.org]
Sent: Friday, December 6, 2019 9:54 AM
To: Luong, Laura
Subject: Central Reservoir Project

Hi Laura,

It was nice meeting you on Wednesday night. Redwood Day is interested in submitting a comment to the EIR and would like to understand the process. I know it was mentioned that we can fill out cards but is there a way of submitting these electronically? 1

I appreciate any information you can provide.

Thank you,
Deann

Deann Hays, CFOO
510.534.0804 x232

Redwood Day
3245 Sheffield Avenue
Oakland, CA 94602
www.rdschool.org

From: J Aguilar [redacted]
Sent: Monday, January 13, 2020 9:57 PM
To: centralreservoir; Luong, Laura
Subject: Concerned 23rd Ave resident re Central Reservoir demolition

Dear EBMUD,

I am a homeowner who lives directly across the street from the reservoir and am very concerned about the potential health hazards the demolition may cause. As a concerned parent of a young child with Asthma, I would like to know what specific precautions will be implemented to ensure residents' health is protected. How will you ensure fine particulate doesn't get into the air or garden soil? Will the area be tented to trap the fine particulate matter? Will there be any independent outside agency monitoring and ensuring all federal/state regulations (at minimum) are being strictly followed? 1

Asbestos & PCB (polychlorinated biphenyl) are well known carcinogens which pollute air & soil. It is my understanding that the Central Reservoir contains both under its roof & stilts. Upon demolition particles can become airborne, polluting the area, jeopardizing the health of residents, especially children and the elderly. There are examples in West Oakland, Hunters Point, and other bay area neighborhoods where regulations were supposed to be strictly followed and were not, putting residents at risk and negatively impacting their health. 2

I would appreciate a response to my concerns and more information.

Thank you.

Best,
Jeanette Aguilar

From: Philip Bellman [redacted]
Sent: Thursday, December 5, 2019 9:21 AM
To: centralreservoir
Subject: Central Réservoir Replacement Draft EIR

I think the draft EIR is excellent and addresses many neighborhood concerns expressed over the past 2 years. I reviewed the draft EIR and it well addresses construction hazards, air quality, traffic, and aesthetic landscaping. Wow! It even has a plan for protecting our resident bats!

I think the revisions to the Ardley Street landscaping are great. With the berm and new landscaping, the street view will be greatly enhanced over the current view of the covered reservoir. The black fencing along the street adds security while still permitting views of the new plantings. I would encourage the use of native trees and shrubs like oaks, buckeye and redwoods that grow well in the area. 1

Thank you for including the neighborhood in your planning process. I appreciate your explanations of how this project will enhance the water infrastructure for all of the east bay. Any inconvenience to the neighborhood during demolition and construction is small in comparison to the larger longterm value. I look forward to watching this project move forward.

Best wishes,

Phil Bellman
[redacted]

From: Paul Bostwick [redacted]
Sent: Sunday, January 5, 2020 1:37 PM
To: Luong, Laura
Subject: Re: EBMUD Public Meeting for Central Reservoir Replacement Project January 7, 2020

I meant to write this a long while back. but maybe some thinking early monday morning will still help.

It struck me at the Dec 4th meeting that the primary health concern expressed there (the ones that lead to scheduling the Jan 7th meeting) were about how the dangerous materials were going to be handled in the demolition and in the construction… I suspect that, dealing with this all the time as EBMUD people do, there is a degree to which you take for granted a bunch of steps and procedures that the general public is unaware of and would be comforted to know about. 1
Things like the containment procedures for the removal crews and the transportation and such. The sets of laws and regulations that control all of this are not broadly known and are pretty impressive. Just going over them in outline and making clear who regulates and inspects that work and on what schedule it happens would be a super foundation for the disclosures.

My issue is, assuming all the above, how will we know if it is going off track, before it is too late to do something about it in mid-project? 2

I have a different meeting that night so I will not see you then. Have a great meeting and happy new year.

-Paul

From: Christina Ferracane [redacted]
Sent: Friday, December 6, 2019 6:39 AM
To: centralreservoir
Subject: Questions to Help Provide Comments on DEIR

CAUTION – This email came from outside of EBMUD. Do not open attachments or click on links in suspicious emails.

HI EBMUD Staff -

I am reaching out to get clarifications that will help me craft DEIR comments.

(1) Can you point me to a site plan illustrating existing and proposing landscaping, including existing/new/removed trees and existing/new fencing? I understand there's a list of trees to be removed; is there a similar list of trees to be planted? I was also specifically looking for a site plan to get a visual for this, similar to what was included in the Leland Reservoir DEIR. 1
(2) Related to trees, can you point to me where it discusses EBMUD standard practices related to tree protection (for remaining trees) and tree removal (for example, to avoid bird nesting season). 2
(3) What are the dimensions (footprint, height, buffer from other activities) needed for the temporary sound wall that's proposed for Redwood Day school? 3

Thanks,
Christina Ferracane

From: Jenaver Goodman [redacted]
Sent: Sunday, January 12, 2020 4:49 PM
To: centralreservoir
Subject: EIR comments

Dear Mr. Hope,
I am writing today with concerns regarding demolition and rebuild at the central reservoir in Oakland. I live nearby, on 23rd Avenue and have been informed that asbestos and other toxins may be present at the site, which will soon be removed. As a mother, organic gardener, and human, I'd like to express concern that these toxins may be released during the deconstruction. How will EBMUD ensure that toxic particulates will not be released into the air during demo and transport? 1
I'm also concerned about noise pollution during demolition and construction and traffic impacts, but health and safety are my number one concern. 2
Thank you very much for your time.
Sincerely,
Jenaver Goodman
[redacted]

From: Lisa Lemus [redacted]
Sent: Saturday, November 23, 2019 4:26 PM
To: centralreservoir
Subject: draft report for Central reservoir

I am emailing to receive a copy of the draft report for Central Reservoir.
Please email it to [redacted]

or mail it to [redacted]

1

Thanks,
Lisa Lemus

From: Joy Maguire [redacted]
Sent: Thursday, November 21, 2019 2:23 PM
To: centralreservoir
Subject: Copy of draft plan

Hello, we live at [redacted], directly across from Redwood Day. Please mail a copy of the Draft EIR to us in time to review before the December 4 meeting, which we will also attend. 1

Thank you.

Joycelyn Maguire and Robert M. Peers
[redacted]

From: Adam Mays [redacted]
Sent: Thursday, December 5, 2019 2:03 PM
To: centralreservoir
Cc: Luong, Laura
Subject: Noise barrier along Central Recreation Area?

Hello,
I am a homeowner and my property backs up on the Central Recreation Area, which is adjacent to the Central Reservoir. My family and I enjoy playing and relaxing in the Central Recreation Area, and can frequent it at any time of the day. I am concerned about the impact the project will have on the park. In the mitigation plan presented at the meeting on December 4, I noted that the Temporary Noise Barrier did not extend the entire perimeter of the project. Was a Temporary Noise Barrier along the perimeter with the park considered? I would urge you to include it along the park, if not around the entire project, in your plan to allow us to enjoy the park during construction, and limit the sound in the neighborhood. 1

Thank you.

Adam Mays

From: Adam Mays [redacted]
Sent: Thursday, December 12, 2019 1:22 PM
To: centralreservoir
Cc: Luong, Laura
Subject: Re: Noise barrier along Central Recreation Area?

Hello,
As a follow-up to my previous email- I've heard from neighbors that at the meeting this issue was discussed, and the fact that the border between the park and the reservoir slopes, rendering a sound barrier ineffective, was raised. I would point out that only part of the border has a significant slope, and so I request that a sound barrier be extended along the park border at least from Redwood Day past the baseball field, basketball court, and climbing structure, which is flat. 1

I would appreciate it if you would confirm receipt of this message. Thank you.

-Adam Mays

From: Meredith Oliver [redacted]
Sent: Sunday, January 12, 2020 8:22 PM
To: centralreservoir
Subject: Central Reservoir Project

Hello,
My property backs up to the Central Reservoir in Oakland (2914 23rd Ave). I have a few concerns about the project that I hope you can help me with. First, a neighbor told me that there is asbestos in the current reservoir covering that could become airborne during the reconstruction. I'm wondering what specific steps EMBUD is taking to insure the health and safety of the neighborhood during construction. 1
Secondly, the proposed plans show that the primary service road will be beyond my house. Will this result in the removal of Canary Island Pines that are currently on the southwest corner of the property? These trees are so beautiful and special to me and our neighborhood- I'm hoping they can remain despite the construction. I'd also like to know how much traffic the service road expects to have on a daily basis after project completion. 2 3 One of the best things about our property has always been the *absence* of roads/traffic behind our house. 23rd Ave is a very busy, loud street and it has always been so wonderful to have relative calm and quiet at the back side of our house. Many animals, including birds, raccoons, opossum, wild turkeys, etc... inhabit that corner of the property. It's been so special to have that little oasis in an otherwise paved and chaotic city.
I'm really hoping you can accomplish the necessary update of the reservoir without endangering the health of the neighborhood and without taking away much of what makes our area so lovely. 4
Thank you,
Meredith Oliver

From: Patrick Oliver [redacted]
Sent: Sunday, January 12, 2020 8:46 PM
To: centralreservoir
Subject: re: draft EIR comments

CAUTION – This email came from outside of EBMUD. Do not open attachments or click on links in suspicious emails.

Hi!
My name is Patrick Oliver, and I am property owner adjacent to the Central Reservoir site, at [redacted].
I am writing in regards to the draft EIR for the Central Reservoir Replacement Project.
I am concerned about the presence of asbestos and other possible contaminants at the site, and how they will handled and disposed of. 1
Do you have a plan in regards to such toxics?
Also, I am concerned about the construction of a primary service road in the southwest corner of the property.
Are you planning to remove any of the Canary Island pines, Live Oaks or Redwood trees in this area? 2
That would be regrettable and should be avoided.
Please let me know what your plans are for this road as well.
Thanks for your time and attention
_Patrick Oliver

From: Juan Romero [redacted]
Sent: Tuesday, December 10, 2019 10:13 AM
To: Luong, Laura
Subject: Hello from Juan!

Hi, Laura!

We met at the Central Reservoir Public Meeting on 12/4/19. I wanted to connect with you so that I can be added to the distribution list that exists for communication related to the project. Also, as an Air District employee, please let me know how i may support your outreach efforts. As I mentioned, I live directly across from the 25th/29th Reservoir Access road. 1

I am working on drafting some public comments and I will submit them when complete. I did however have a question relating to the existing facility: 2

I've noticed that there's a loud, grinding noise that intermittently comes from the facility. I'm assuming its a pump. I don't actually know. I was wondering if you could tell me what that is and how that may change when the new reservoir is constructed.

Thank you,

Juan M Romero, MPA

From: Shonette Marie Steiger [redacted]
Sent: Monday, January 13, 2020 2:14 PM
To: centralreservoir
Cc: rkaplan@oaklandca.gov; dkalb@oaklandca.gov; nfortunatobas@oaklandca.gov; lmcelhaney@oaklandca.gov; sthao@oaklandca.gov; ltaylor@oaklandca.gov; lreid@oaklandca.gov; ngallo@oaklandca.gov; Shonette Marie Steiger
Subject: EBMUD Central Reservoir Construction & Environmental Racism

Dear EBMUD Project Management, Engineers, & Personnel,

The community members and myself are gravely concerned about the potential negative health impacts related to planned demolition & construction of Central Reservoir. This concern was brought to your attention during the December 4th, 2019 public meeting held at Manzanita Community School. The subsequent meeting held on January 7th, with 12 EBMUD representatives, engineers, contracted employees was meant to alleviate our health concerns. Only 7 participating residents were present, given holiday season and short notification of added meeting. Your contractors & management emphasized adherence to federal, state, and local guidelines regarding removal and local transport of hazardous materials. However, informed community members are aware that these very statements have been made by corporations responsible for violations of safety guidelines, influencing the negative health impacts and clusters of cancers in West Oakland, Sunnydale (SF), Bay View Hunter's Point (SF) neighborhoods. We, the neighbors of Tuxedo Park/Reservoir Hills recall and adamantly discuss Flint, Michigan and their "best interest" in the health of their citizens.

Exposure to asbestos and PCB (polychlorinated biphenyls) contained within the Central Reservoir site, are well known carcinogens. The EPA's empirical research resulted in findings stating that PCBs are dangerous to human and animal life. We also are aware that contractors typically cut corners to save time & corporate monies. Thus, the potential exposure of these hazardous materials to air and water are paramount, in spite of planned adherence to protocol and standards, as stated by representatives. Environmental racism is not just a historical phenomenon, but continues to exist, in spite of federal, state, and local standards regarding hazardous materials. Reservoir Hills/ Tuxedo Park are communities of color, like so many others, violated with environmental pollutants and benign neglect by entities "adhering to federal, state guidelines". 1

What outside agencies will monitor the demolition and transport of hazardous materials throughout our residential neighborhoods, with vulnerable populations, besides EBMUD hired and paid contractors? How will our air and soil in the immediate vicinity be protected? Will the entire site be tented to encapsulate cancer causing particulates. Thank you. 2

Sincerely,

Shonette Steiger, MSN, BSN, RN, PHN

[redacted]

From: Shonette Marie Steiger [redacted]
Sent: Monday, January 13, 2020 2:41 PM
To: centralreservoir
Cc: Shonette Marie Steiger; rrusso@oaklandca.gov; oakdot@oaklandca.gov; ngallo@oaklandca.gov
Subject: EBMUD Allowance of Redwood Day School to have Special Road /Ardley Avenue, 94602
Attachments: 23rd Ave Truck Damages rt Speeding.JPG

Dear EBMUD Central Reservoir Project Management Team,

Ardley Avenue and 23rd Avenue have historically experienced many traffic related congestion, accidents, and speeding. Several complaints and requests have been submitted to City of Oakland Transportation Department to address residents concerns, with no avail. The arrangement of Redwood Day School, located on 3245 Sheffield Ave, to have a special road access to Ardley Avenue is unfeasible, not acceptable, and presents additional environmental stressors to current residents. RDS may create a car pool from Mountain Blvd., were most of the families and students reside, as they pay $31,000 annual tuition for K-8th grade attendance. They can also arrange private bus transport, as an option to the congestion caused by parents on Sheffield. Diverting the traffic congestion to an already problematic area, with speeding, accidents, and damages to personal property will not be agreed upon by constituents. 1

Residents will address the City of Oakland, Department of Transportation and City Council, regarding such stated proposal and the negative impact this would impose on property owners. Please reconsider your agreement with RDS. Thank you. 2

Shonette Steiger, MSN, BSN, RN, PHN
[redacted]


California
7K82912

From: [redacted]
Sent: Monday, January 13, 2020 4:07 PM
To: centralreservoir
Cc: dist5@acgov.org
Subject: EIB Public Comment

CAUTION – This email came from outside of EBMUD. Do not open attachments or click on links in suspicious emails.

Hello EBMUD:

Please review the following and respond to all.

1. You were asked to provide details regarding the soil testing that you conducted around the neighborhood that will be impacted by your project. Please provide the results of the soil tests that you conducted. Please include the specific areas that were tested. What are the results of the tests? 1

2. You stated that the air quality of the area will be continuously tested. Please provide in detail what your protocol is to respond if the levels increase to a level of concern. Have you worked in a site and the levels rose to a concern? If so, how did you respond and address the issue? 2

2a. If there is a a concern, it means hazardous materials were released into our community. The particles will enter our homes and soil. Please provide in detail how you will address this issue. How will you restore the soil and address the air quality inside of the homes in the neighborhood? 3

3. Please list all Federal regulations regarding asbestos removal that have been rolled back since 2014? 4

4 it would be helpful if you would commit to pre and post testing of the soil in the surrounding community. It would include providing all of the related test results in a report and follow up dialogue would be helpful. Are you willing to make this commitment to the neighborhood? If so, when will the test be conducted? You indicated that you have completed soil testing in the land adjacent previously. When will you make those test results available and provide opportunity for a dialogue with the community to discuss? 5

5. The plan is to build a sound wall on the Redwood Day side. A sound wall along Ardley should be erected also. What step need to be taken to assure you will erect a sound wall on Ardley? 6

6. The corrugated roof might be removed in cut pieces the plan would be to wrap the cut pieces. In the sample the workers were wearing hazardous clothing, but they were conducting the work in the open air. How is that a safe process? 7

7. If there is contamination of the soil on our properties and our air quality is impacted, what will you do to address those issues? Will you install air quality testers inside the homes closest to the construction site? Will you monitor the soil in the surrounding properties surrounding the construction site for the entire period of the project? The pre test would be our baseline. 8

8. Please provide in detail the times any of the reservoirs were used in an emergency. 9

9. The construction of the Danville Reservoir is a flat. Berkeley is topped with tar and gravel. You say that you need to erect the tall cylinders because they need to be elevated for the flow and other reasons. However, isn't that the concern for all reservoirs? Is it more cost effective to build the cylinders In this community and not opt for a potentially more expensive option like you did in Danville and Berkeley? Please provide the cost comparisons and explanation as to why you chose one approach over the other. 10

10. Since the contractor will determine the method used, there should be a couple of community members allowed to be apart of the contractor selection process. This should also be the process for determining the method used in this project. Will you commit to allowing one or two members of the community to participate at that level with this project? If. So, what are the next steps? If not, please explain why 11

11. Are you willing to create an email list and use it to circulate information electronically to the community? 12

12. Please provide details of your wildlife impact study. If you have not completed one, what is your plan regarding completing a plan and presenting the results to the community? 13

13. Please provide the. names of Oakland departments and the related staff that you have met with in developing this project. 14

14. Please provide in detail information about what caused the reservoir to leak to the point residents had to be relocated in the past Please provide a map that shows the residential homes and properties that were damaged. What steps were taken to restore those properties? What addresses were impacted? 15

Thank you in advance for your responses.

Be well,

Cristel Tullock
[redacted]

ESA

180 Grand Avenue
Suite 1050
Oakland, CA 94612
510.839.5066 phone
510.839.5825 fax

meeting notes

project	Central Reservoir Replacement Project	project no.	D160330
date	December 4, 2019	time	6:30 – 8:30 p.m.
present	EBMUD: Dave Rehnstrom, Aaron Hope, Bill Maggiore, Laura Luong, Mona Favorite-Hill ESA: Jill Hamilton, Mike Manka, Alena Maudru	route to	
subject	Draft EIR Public Meeting #1		

1. Is the main benefit of the Project increased pressure? How does going from more million gallons of storage to less improve this system for EBMUD? [1]
2. Who did EBMUD meet with at the City of Oakland to discuss the Project? [2]
3. Where will construction staging occur? [3]
4. What environmental state and local health agency is evaluating the Project in the EIR? [4]
5. How does this project improve seismic safety of the reservoir? [5]
6. What are the standard construction hours for the Project? [6]
7. Can murals or some design go on the tanks to improve aesthetics? [7]
8. What is being done to control the air pollutants and reduce cancer risk associated with demolition of the existing reservoir and construction of the proposed tanks? What will be done the mitigate the health impacts? [8]
9. Can a summary of the effects of air quality emissions, PCBs, and asbestos be provided? [8]
10. Can a follow up meeting be held to discuss air quality issues? [9]
11. Has EBMUD considered a perpendicular noise wall extending into the middle of the site, like along the south side of the reservoirs? [10]
12. Can the sidewalk along Ardley be closed during construction to accommodate a noise barrier? [10]
13. When would access to the Redwood Day access driveway be allowed? Not until after construction? [11]
14. Is the Redwood Day School driveway public or private? [12]
15. Can shrubbery be added to screen the fence? [13]

ESA

180 Grand Avenue
Suite 1050
Oakland, CA 94612
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510.839.5825 fax

meeting notes

project	Central Reservoir Replacement Project	project no.	D160330
date	January 7, 2020	time	6:30 – 8:30 p.m.
present	EBMUD: Dave Rehnstrom, Aaron Hope, Bill Maggiore, Laura Luong, Mona Favorite-Hill, Javier Prospero ESA: Jill Hamilton, Mike Manka, Heidi Rous, Michael Burns	route to	
subject	Draft EIR Public Meeting #2		

1. Is this a total demolition project? 1
2. Is the cleanup of the reservoir supposed to start in 2026? How long will the whole project take? 1
3. Why is the reservoir being raised? 2
4. How high will the new tanks be? Will they disrupt views? 3
5. Has EBMUD determined what methods will be used to handle hazardous materials during demolition of the reservoir? Will methods that were used on previous projects be used for this one? 4
6. What do the air quality monitors measure? 5
7. What is the pathways for PCBs? 6
8. Is EBMUD aware of any studies of health effects, or data available related to Summit Reservoir or other reservoir repair/replacement projects? 7
9. How will the reservoir be drained? 8
10. What information is in the Draft EIR versus what will be figured out for the Project later? 9
11. When does the Project design happen? Does the public get to weigh in? 10
12. What kind of detection will the new tanks have for leakage into the ground? 11
13. What kind of noise will be generated from the Project? 12
14. What is the proposed street from Ardley Avenue? 13
15. What trees will be removed on the Project site? 14
16. Will EBMUD conduct pre and post testing of soils in the surrounding area? 15

17. Was the Project site tested for lead? 16

18. What will be done to protect wildlife by Sausal Creek and stop animals from leaving the site and going into adjacent properties? 17

19. What streets will be most impacted by construction trucks? 18

20. Will water service be cut off during construction? 19

CHAPTER 10
Draft EIR Revisions

10.1 Introduction

This chapter presents revisions that have been made to the Draft EIR text. These revisions provide corrections, additions, or clarifications as requested by specific comments. The text revisions are organized by chapter. Underlined text represents language that has been added to the Draft EIR; text shown with ~~strikethrough~~ has been deleted from the Draft EIR.

10.2 Text Revisions

10.2.1 Executive Summary

Section S.5, Summary of Impacts

Page S-25, Table ES-2, has been revised as follows to reflect changes made to Draft EIR Section 3.8, Hazards and Hazardous Materials (refer to Section 10.2.3, below):

Section 1.3(D), Spill Prevention and Response Plan

1. Submit plan detailing the means and methods for preventing and controlling the spilling of known hazardous substances used on the jobsite or staging areas. The plan shall include a list of the hazardous substances proposed for use or generated by the Contractor on site, including petroleum products, and measures that will be taken to prevent spills, monitor hazardous substances, and provide immediate response to spills. Spill response measures shall address notification of the Engineer and appropriate agencies including phone numbers; spill-related worker, public health, and safety issues; spill control, and spill cleanup.

2. Submit a Safety Data Sheet (SDS) for each hazardous substance proposed to be used prior to delivery of the material to the jobsite.

Section 1.3(E) Dust Control and Monitoring Plan (Details as listed under Impact AIR-1)

Section 3.3(B) Dust Control (Details as listed under Impact AIR-1)

Section 3.3(C) Dust Monitoring During Demolition and Construction (Details as listed under Impact AIR-1)

Section 3.3(D) Dust Control System Compliance (Details as listed under Impact AIR-1)

Page S-26, Table ES-2, has been revised as follows to reflect changes made to Draft EIR Section 3.8, Hazards and Hazardous Materials (refer to Section 10.2.3, below):

Procedure 711, Hazardous Waste Removal

EBMUD Environmental Compliance Manual, Section 9, Trench Spoils Field Management Practices

Page S-33, Table ES-3, has been revised as follows to reflect changes made to Draft EIR Section 3.10, Noise and Vibration (refer to Section 10.2.3, below):

Mitigation Measure NOI-1: Noise Control Measures

EBMUD shall erect a 16-foot tall K-rail mounted temporary noise barrier along EBMUD's property adjacent to the Redwood Day School for the entire construction duration. The noise barrier will be Sound Transmission Class (STC) rated and specific to sound attenuation applications. There may be some periods of construction when the noise barrier may be temporarily moved or dismantled to accommodate the Project construction area. EBMUD will schedule construction activities outside of normal school hours when it is feasible to do so if heavy construction equipment, including but not limited to impact equipment, is operated within 100 feet of the closest classroom or if the noise barrier needs to be temporarily removed to accommodate construction.

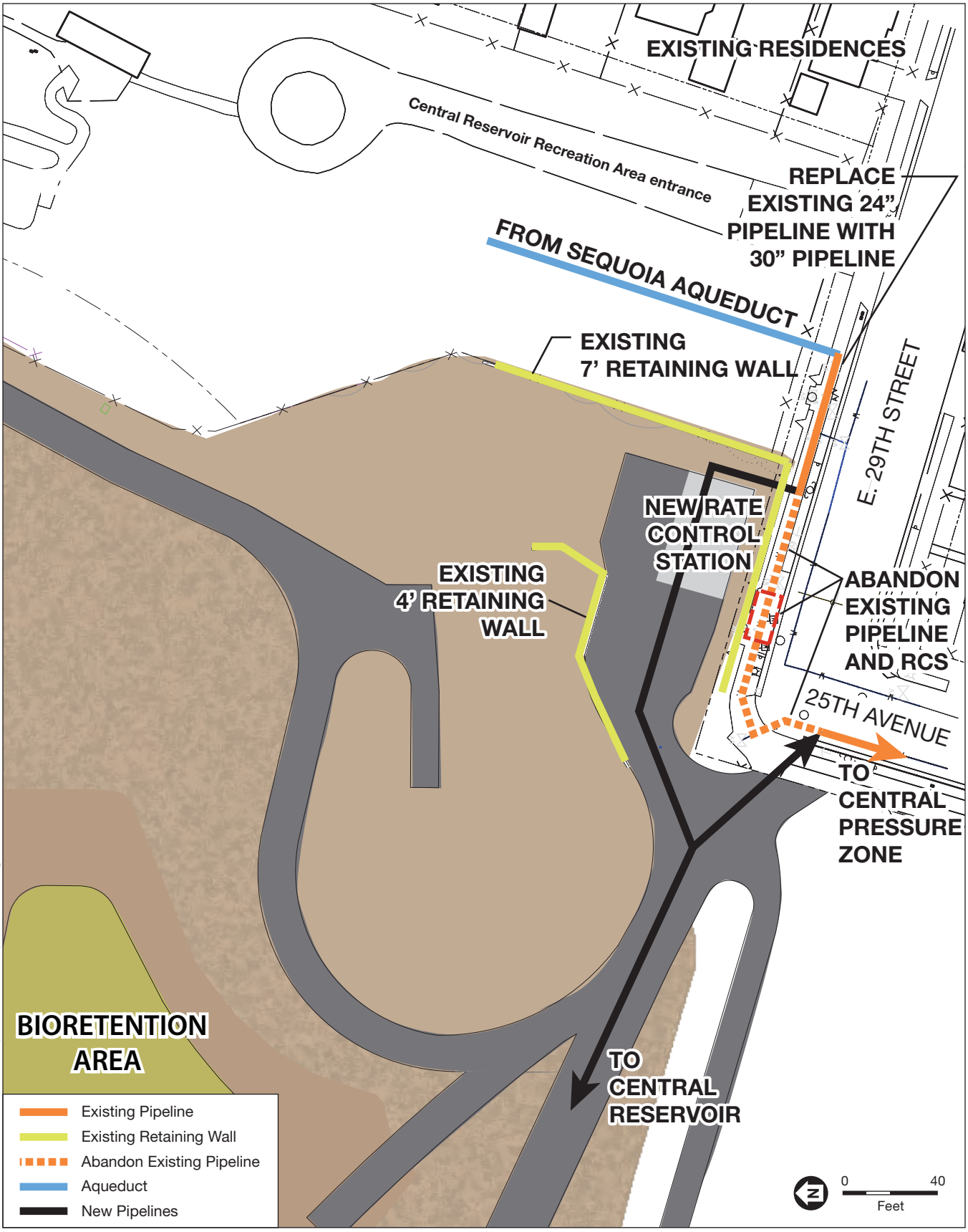
Additionally, noise barriers consisting of 6-foot-high acoustical paneling will be attached to the fencing along the western, southern and eastern site perimeter, except in areas where the 16-foot tall K-rail mounted temporary noise barrier is used along the Redwood Day School boundary as shown on revised Figure 3.10-3. No fence mounted noise barriers would be used along the northern site boundary between the site and I-580.

10.2.2 Chapter 2, Project Description

Page 2-7, Figure 2-4 has been revised as shown below to clarify and make easier to read.

Page 2-28, the second sentence of the first paragraph has been revised as follows to correct errata:

"…exported from the site. Temporary stockpiling of the excavated soil would occur on site within the existing reservoir property, as shown on Figure 2-12 ~~Figure 2-4~~. Excavated soil would be temporarily stockpiled and reused. The temporary soil stockpile height would vary throughout the substructure construction phase, with an estimated maximum height of approximately 10- to 15-feet higher than the existing main embankment."



D160330.00 - EBMUD Central Reservoir Replacement EIR\05 Graphics-GIS-Modeling\Illustrator

SOURCE: EBMUD, 2018; ESA, 2020

EBMUD Central Reservoir Replacement Project

Figure 2-4
Proposed Central Rate Control Station Replacement

ESA

Page 2-31, the last sentence of the first paragraph under Section 2.6.3, Construction Schedule and Hours, and been revised as follows to correct errata:

> For purposes of analysis in the Draft EIR, construction is estimated to take approximately 6-years, beginning with the demolition phase occurring approximately in 2026. After reservoir demolition, a geotechnical investigation would be completed to confirm the characteristics of the subsurface. The construction would begin in approximately 2028, following demolition and the geotechnical investigation. The construction is expected to be completed in approximately 203~~0~~1, with start-up and testing, and site restoration to be completed in approximately 203~~1~~2.

Page 2-34, the Section 2.8.2, Redwood Day School Access Driveway, has been revised as follows to clarify the description of the Redwood Day School driveway:

> As part of the Project, EBMUD is considering a design option to potentially lease a strip of property and authorize Redwood Day School to construct a private driveway along the north end of the existing reservoir property at Ardley Avenue. The potential driveway is shown on Figure 2-3. The driveway would be approximately 500-feet long and 10-feet wide. The driveway will be sloped away from the freeway or will include facilities (e.g., a v-ditch) to route stormwater from the driveway to the Central Reservoir storm drain system and ultimately to the City of Oakland's stormwater system.

Page 2-36, the end of Section 2.9, EBMUD Practices and Procedures, has been revised as follows to include Project-specific steps to implement some of EBMUD's standard practices and procedures related to hazardous materials and air quality:

> EBMUD worked with an independent consultant with expertise in asbestos abatement to develop Project-specific steps to implement EBMUD's standard practices and procedures related to air monitoring, asbestos abatement, and soil sampling and testing (refer to Appendix L). Typically, this effort occurs during the design phase. The Project-specific steps for implementing and complying with EBMUD's standard practices and procedures related to air monitoring, asbestos abatement, and soil sampling and testing are listed below.
>
> - **Air Monitoring.** EBMUD Specification 01 35 44, Environmental Requirements, EBMUD Specification 02 82 13, Asbestos Control Activities, and 01 35 24 Project Safety Requirements collectively require the construction contractor to prepare and implement an air monitoring program to protect against contamination of soils, water, adjacent residences and properties, and the airborne release of hazardous materials and dusts. For the Project, an independent hazardous materials consultant with oversight over the construction contractor will be contracted separately to prepare and implement the air monitoring program to ensure the air monitoring program is protective of worker and public health and is compliant with regulatory requirements. Sampling and testing for airborne asbestos fibers will take place daily, but requires laboratory analysis, which can take up to 72 hours to obtain results. Because particulate air monitoring

will detect asbestos fibers (among other particulates, such as dust), real-time monitors will be used for airborne particulate monitoring to provide real-time detection of particulates that could be an indication of asbestos fibers. This 2-part air monitoring program will be conducted during any dust generating activities, including removal of the transite roof, to provide immediate information as to the effectiveness of the transite roof removal and dust control methods. A study will be completed prior to any construction activities to establish activity-specific real-time particulate air monitoring trigger levels (i.e., stop work, increase watering) that will be enforced by the contractor. These airborne particulate action levels and stop work thresholds will be established to ensure the perimeter airborne asbestos fiber action level is not exceeded based on a correlation between airborne particulate concentrations and potential asbestos fiber concentrations. In the event that real-time air monitoring indicates an increase in particulates that exceeds stop work thresholds, EBMUD's construction inspector would stop work until the cause of the particulates are identified and corrected before resuming work again.

- **Asbestos Abatement Plan of Action.** EBMUD Specification 02 82 13, Asbestos Control Activities, requires an Asbestos Abatement Plan of Action be prepared by the construction contractor, which is a detailed plan showing the location and layout of decontamination areas, the sequencing of asbestos work, the interface of trades involved in the performance of work, disposal plan including location of approved disposal site, and a detailed description of the methods to be employed to control pollution. For the Project, an independent asbestos consultant will be contracted separately with EBMUD to prepare a Feasibility Assessment during the design phase. The Feasibility Assessment will identify all potential methods for removal of the transite roof panels and will select the best method that controls and contains asbestos based on the current condition of the transite roof panels and an understanding of the method that was used to encapsulate the existing roof. The potential methods that will be evaluated by the Feasibility Assessment include: wetting and misting, removal from beneath the reservoir roof, full containment (i.e., tenting), modular (partial) containment (i.e., tenting), encapsulation (i.e., application of coatings), and other options based on the current state of the art technology. A small-scale pilot study may need to be conducted to confirm that the selected removal approach can be effectively implemented by removing a small test section using the selected method and under full containment with negative air filtration. To inform the Feasibility Study and advance the project timing, the *Asbestos Hazard Control Specifications Review* (NES 2021 provided in Appendix L) provides details on how the asbestos contractor will comply with EBMUD Specifications that will be incorporated into the Feasibility Study. The independent asbestos consultant will also report to EBMUD during the removal of the transite roof and ensure the work is performed in a manner that is protective of workers and public health, compliant with regulatory requirements, and performed consistent with the selected method from the Feasibility Assessment.

- **Soil Sampling and Testing.** EBMUD's Environmental Compliance Manual's Trench Spoil BMPs requires soil sampling and testing in advance of construction

where evidence of contamination has been found. The results of pre-Project sampling for asbestos on soil is summarized in the *Asbestos Project Summary* (NES 2020 provided in Appendix L). For the Project, sampling and testing the soil on site will be occur twice: initially to ensure the soil is clean before any demolition and construction activities begin and again after hazardous material abatement measures have been completed and the Central Reservoir and Materials Storage Building have been demolished to ensure the soil is clean before any earthwork activities begin. In the event soil sampling and testing determines concentrations of hazardous materials exist that exceed regulatory thresholds, the contaminated soil will be removed, off hauled, and disposed of in accordance with federal, state, and local laws and regulations.

10.2.3 Chapter 3, Environmental Setting, Impacts, and Mitigation Measures

Section 3.2, Air Quality

Page 3.2-24, Table 3.2-3 has been revised as follows to correct errata:

TABLE 10.2-1
UNMITIGATED AVERAGE DAILY CONSTRUCTION EMISSIONS

	Construction Emissions (pounds/day)[a]			
	ROG	**NO_X**	**Exhaust PM_{10}**	**Exhaust $PM_{2.5}$**
Project Construction Emissions	2.2	16	0.6	0.5
BAAQMD Threshold	54	54	82	54
Exceed Threshold?	No	No	No	No

NOTE:

a Emissions estimates in Appendix F are based on 2024 to 2029 values, but construction is estimated to begin in 2026 and end in 2032. Improvements in technology and regulatory requirements will reduce emissions over time and, therefore, the emissions estimates presented herein are conservative because emissions will be lower when construction is expected to occur.

SOURCE: Calculations and ~~by ESA,~~ CalEEMod Modeling by ESA included as Appendix F, October 2018.

Page 3.2-27, Table 3.2-4 has been revised as follows to correct errata:

TABLE 10.2-2
MAXIMUM HEALTH RISKS FROM PROJECT CONSTRUCTION

Health Risk at Maximally Exposed Receptors[a]	Maximum Cancer Risk (in a million)	Chronic Risk (Hazard Index)	Maximum $PM_{2.5}$ concentration
Uncontrolled Emissions			
Residential Receptor - Infant	**14.2**	0.008	0.037
Residential Receptor - Child	4.8	0.008	0.037
Residential Receptor - Adult	0.7	0.008	0.037
Project-level Threshold	10	1.0	0.3
Significant?	**Yes**	**No**	**No**
(MEIR) Redwood Day School Receptor - Child	5.5	0.009	0.042
MEIR - Adult	0.8	0.009	0.042
Project-level Threshold	10	1.0	0.3
Significant?	**No**	**No**	**No**
Emissions with Implementation of Best Available Control Technology with all Tier 4 Construction Equipment			
Residential Receptor - Infant	2.2	0.001	0.006
Residential Receptor - Child	0.7	0.001	0.006
Residential Receptor - Adult	0.1	0.001	0.006
Project-level Threshold	10	1.0	0.3
Significant?	**No**	**No**	**No**
Redwood Day School Receptor - Child	0.8	0.001	0.007
Redwood Day School Receptor - Adult	0.1	0.001	0.007
Project-level Threshold	10	1.0	0.3
Significant?	**No**	**No**	**No**

NOTE:

a Health risks presented in this table and Appendix F are based on 2024 to 2029 values, but construction is estimated to begin in 2026 and end in 2032. Improvements in technology and regulatory requirements will reduce emissions over time and, therefore, the emissions estimates presented herein are conservative because emissions will be lower when construction is expected to occur. ~~See Appendix F for AERMOD model outputs and health risk calculations.~~

SOURCE: ESA AERMOD model outputs and health risk calculations ~~Modeling~~ included in Appendix F, October 2018.

Section 3.7, Greenhouse Gas Emissions

Page 3.7-14, Table 3.7-2 has been revised as follows to correct errata:

TABLE 10.2-3
ESTIMATED ANNUAL GREENHOUSE GAS EMISSIONS FROM CONSTRUCTION

Year[a]	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
2026~~4~~	1,032.3	0.16	<0.01	1,036.2
2027~~5~~	563.0	0.06	<0.01	564.6
2028~~6~~	568.6	0.06	<0.01	570.3
2029~~7~~	746.5	0.09	<0.01	748.7
2030~~28~~	693.7	0.06	<0.01	695.2
2031~~29~~	551.8	0.06	<0.01	553.3

Notes:

a Emissions estimates in Appendix F are based on 2024 to 2029 values, but construction is estimated to begin in 2026 and end in 2032. Improvements in technology and regulatory requirements will reduce emissions over time and, therefore, the emissions estimates presented herein are conservative because emissions will be lower when construction is expected to occur.

SOURCE: Calculations provided by ESA 2018 (Appendix F)

Section 3.8, Hazards and Hazardous Materials

Pages 3.8-12 through 3.8-18 of Section 3.8, Hazards and Hazardous Materials, have been revised as follows to include additional information regarding Project-specific steps to implement some of EBMUD's standard practices and procedures related to hazardous materials and air quality:

Asbestos Control Activities. EBMUD Standard Construction Specification 02 82 13 requires that the contractor submit a detailed plan of the procedures to address ACM, called an Asbestos Abatement Plan of Action (Plan). The P~~p~~lan shall include the location and layout of decontamination areas, the sequencing of asbestos work, the interface of trades involved in the performance of work, disposal plan including location of approved disposal site, a detailed description of the methods to be employed to control pollution, description of use of portable HEPA ventilation system, method of removal to prohibit visible emissions in work area (including suppressing air-borne particulates using a minimum of two misting units operated simultaneously), and packaging of removed asbestos debris. As described in Section 2.9 in Chapter 2, *Project Description*, EBMUD has developed Project-specific steps to implement EBMUD's standard practices and procedures related to asbestos abatement (refer to Appendix L). In accordance with those Project-specific steps, t~~T~~he Plan will be developed based on a Feasibility Assessment completed during design, that will identify all potential methods for removal of the transite roof panels and will allow EBMUD to select the best method to control and contain asbestos based on the current condition of the transite roof panels and an understanding of the

method used to encapsulate the existing roof. The potential methods that will be evaluated by the Feasibility Assessment include: wetting and misting, removal from beneath the reservoir roof, full containment (i.e., tenting), modular (partial) containment (i.e., tenting), encapsulation (i.e., application of coatings), and other options based on current state of the art technologies. A small-scale pilot study may need to be conducted to confirm that the selected removal approach can be effectively implemented by removing a small test section using the selected method and under full containment with negative air filtration. An independent asbestos consultant will also report to EBMUD during the removal of the transite roof and ensure the work is performed in a manner that is protective of workers and public health, compliant with regulatory requirements, and performed consistent with the selected method from the Feasibility Assessment.

All workers performing work shall meet the requirements of the Asbestos Certification issued by the California Contractors State License Board. During demolition procedures, the contractor shall protect against contamination of soils, water, adjacent residences and properties, and the airborne release of hazardous materials and dusts. Asbestos materials uncovered during the demolition activities shall be disposed of in an approved manner complying with all applicable federal, state, and local regulations. Transportation equipment for removal of ACM shall be suitable for loading, temporary storage, transit and unloading of waste without exposure to persons or property. Contractor shall removal all evidence of ACM materials from the jobsite that are related to Project demolition.

EBMUD Specifications 01 35 44, Environmental Requirements, 02 82 13, Asbestos Control Activities, and 01 35 24, Project Safety Requirements, collectively require the construction contractor to prepare and implement an air monitoring program to protect against contamination of soils, water, adjacent residences and properties, and the airborne release of hazardous materials and dusts. Air monitoring for airborne concentrations of asbestos will be conducted at the east, west, north and south property boundaries and concentrations greater than regulatory control limits would require the Contractor to stop work and correct the conditions causing the excessive levels. As described in Section 2.9 in Chapter 2, EBMUD has developed Project-specific steps to implement EBMUD's standard practices and procedures related to air monitoring (refer to Appendix L). In accordance with those Project-specific steps, an independent hazardous materials consultant with oversight over the construction contractor will be contracted separately to prepare and implement the air monitoring program to ensure the air monitoring program is protective of worker and public health and is compliant with regulatory requirements. Sampling and testing for airborne asbestos fibers will take place daily, but requires laboratory analysis which can take up to 72 hours to obtain results. Because particulate air monitoring will detect asbestos fibers (among other particulates, such as dust), real-time monitors will be used for airborne particulate monitoring to provide real-time detection of particulates that could be an indication of asbestos fibers. This 2-part air monitoring program will be conducted during any dust generating activities, including removal of the transite roof, to provide immediate information as to the effectiveness of the transite roof removal and dust control methods. A study will be completed prior to

any construction activities to establish activity specific real-time particulate air monitoring trigger levels (i.e., stop work, increase watering) that will be enforced on the contractor. These airborne particulate action levels and stop work thresholds will be established to ensure the perimeter airborne asbestos fiber action level is not exceeded based on a correlation between airborne particulate concentrations and potential asbestos fiber concentrations. In the event that real-time air monitoring indicates an increase in particulates that exceeds stop work thresholds, EBMUD's construction inspector would stop work until the cause of the particulates are identified and corrected before resuming work again.

Lead Hazard Control Activities. EBMUD Standard Construction Specification 02 83 13 requires that, before the start of demolition, the contractor shall prepare a Lead Demolition Plan detailing handling, engineering control, removal and disposal procedures for lead-containing materials. All workers performing work shall meet the requirements of the California Department of Health Services lead-related construction interim certification. The lead work area will be isolated using caution tape, and the job site shall be secured at all times. During demolition procedures, the contractor shall protect against contamination of soils, water, adjacent buildings and properties, and the airborne release of hazardous materials and dusts. Transportation equipment for removal of lead-containing materials shall be suitable for loading, temporary storage, transit and unloading of waste without exposure to persons or property. Contractor shall removal all evidence of lead-containing materials from the jobsite that are related to Project demolition.

Submittal of Dust Control and Monitoring Plan. EBMUD Standard Construction Specification 01 35 44, Section 1.3(E) requires that the contractor submit a Dust Control and Monitoring Plan detailing the means and methods for controlling and monitoring dust generated by demolition and other work on the site for the Engineer's acceptance prior to any work at the jobsite. The specification requires that the plan shall:

- Comply with all applicable regulations including but not limited to the BAAQMD visible emissions regulation[1] and Public Nuisance Rule.[2]
- Include items such as measures to control fugitive dust emissions generated by construction activities.
- Outline best management practices for preventing dust emissions, provide guidelines for training of employees, and procedures to be used during operations and maintenance activities.
- Include measures for the control of paint overspray generated during the painting of exterior surfaces.

[1] BAAQMD Regulation 6, Particulate Matter and Visible Emissions, limits the quantity of particulate matter in the atmosphere through the establishment of limitations on emission rates, concentration, visible emissions and opacity.

[2] BAAQMD Regulation 1-301, Public Nuisance, limits air contaminants which cause a public nuisance to any considerable number of persons or the public.

- Detail the equipment and methods used to monitor compliance with the plan.

Dust Control. EBMUD Standard Construction Specification 01 35 44, Section 3.3(B) requires the Contractor to implement all necessary dust control measures, including but not limited to the following:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered minimum two times per day or as directed by the Engineer.
- Water and/or coarse rock all dust-generating construction areas as directed by the Engineer to reduce the potential for airborne dust from leaving the site.
- Water and/or cover soil stockpiles daily.
- Cover all haul trucks entering/leaving the site and trim their loads as necessary.
- Using wet power vacuum street sweepers (dry power sweeping is prohibited) to:
  - Sweep all paved access road, parking areas, and staging areas at the construction site daily or as often as necessary.
  - Sweep public roads adjacent to the site at least twice daily or as often as necessary.
- All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
- Gravel or apply nontoxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
- Site accesses to a distance of 100 feet from the paved road shall be treated with 12-inches of compacted coarse rock.
- Sandbags or other erosion control measures shall be installed to prevent silt run-off to public roadways from sites with a slope greater than 1 percent.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible.
- Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
- Wind breaks (e.g., fences) shall be installed on the windward sides(s) of actively disturbed areas of construction. Wind breaks should have a maximum 50 percent air porosity.

- The simultaneous occurrence of excavation, grading, and ground disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.
- All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
- All vehicle speeds shall be limited to 15 mph or less on the construction site and any adjacent unpaved roads.

Dust Monitoring During Demolition and Construction. EBMUD Standard Construction Specification 01 35 44, Section 3.3(C) requires the Contractor shall provide air monitoring per the Dust Control and Monitoring Plan along the perimeter of the job site. A minimum of 4 stations, one on each side of the EBMUD property, shall be established, capable of continuous measurement of total particulate concentration when any dust generating activity is occurring. Dust monitoring shall include:

- Contractor shall not emit from any source for a period or periods aggregating more than 3 minutes in any hour, a visible emission which is as dark as or darker than No. 1 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree.
- Contractor shall not emit from any source for a period or periods aggregating more than 3 minutes in an hour an emission equal to or greater than 20 percent opacity as perceived by an opacity sensing device, where such device is required by Air Quality Management District regulations.
- All environmental and personal air sampling equipment shall be in conformance with the Association of Industrial Hygiene and National Institute of Safety and Health (NIOSH) standards.
- All analysis shall be completed by a California Department of Health Services certified laboratory for the specific parameters of interest.
- The Contractor shall provide to the Engineer, within 72 hours of sampling, all test results.

Dust Control System Compliance. EBMUD Standard Construction Specification 01 35 44, Section 3.3(D) requires the dust control system to comply with the Dust Control and Monitoring Plan and any applicable laws and regulations.

Hazardous Waste Removal. Procedure 711, Hazardous Waste Removal, defines hazardous waste and establishes responsibilities for removal of hazardous wastes from EBMUD facilities. Procedure 711 outlines specific steps and responsibilities for: characterizing the waste and determining what analyses are needed to classify the waste; coordinating waste disposal, reuse or recycling issues; labeling, storing, inspecting, and maintaining inventory records for the waste; and reviewing, signing,

and tracking any hazardous waste handling and disposal requirements and hazardous waste manifests.

EBMUD Environmental Compliance Manual

EBMUD's Environmental Compliance Manual requires implementation of procedures during construction to protect workers and the environment (EBMUD, 2010). The Trench Spoil Best Management Practices Program is applicable to the Project and would require the proper disposal of spoil, which is excess material removed from the pipeline trench. The program requires site investigation and the collection and analysis of soil, slurry, and groundwater samples if needed, and depending on the results of the investigation, advanced soil, slurry, and groundwater disposal arrangements.

As described in Section 2.9 in Chapter 2, EBMUD has developed Project-specific steps to implement EBMUD's standard practices and procedures related to soil sampling and testing (refer to Appendix L). In accordance with those Project-specific steps, sampling and testing the soil on site will occur twice: initially to ensure the soil is clean before any demolition and construction activities begin and again after hazardous material abatement measures have been completed and the Central Reservoir and Materials Storage Building have been demolished to ensure the soil is clean before any earthwork activities begin. In the event soil sampling and testing determines concentrations of hazardous materials exist that exceed regulatory thresholds, the contaminated soil will be removed, off hauled, and disposed of in accordance with federal, state, and local laws and regulations.

3.8.3 Impact Analysis

Methodology for Analysis

Information for the assessment of impacts relative to hazards and hazardous materials is based on a review of literature research (i.e., fire severity zone maps provided by CAL FIRE), the Cortese List (which includes the DTSC EnviroStor database and the~~Cortese List,~~ SWRCB's GeoTracker database), and the City of Oakland General Plan. The information was used to identify potential impacts on workers, the public, or the environment.

The Project is regulated by the various laws, regulations, and policies summarized in the *Regulatory Framework* section. Compliance by the Project with applicable federal, state, and local laws and regulations is assumed in this analysis, and local and state agencies would be expected to continue to enforce applicable requirements to the extent that they do so now.

The analysis of hazards and hazardous materials impacts in this section takes into account that EBMUD would incorporate its Standard Construction Specifications and Procedures into all Project activities. The requirements include preparation of plans that outline procedures to follow to ensure the safe and lawful handling of hazardous materials, implementation of plans, and documentation of compliance. EBMUD

reviews submittals for conformance with the requirements of the contract document and specified laws and regulations. EBMUD worked with an independent consultant with expertise in asbestos abatement to advance development of the Project-specific steps to implement EBMUD's standard practices and procedures related to air monitoring, asbestos abatement, and soil sampling and testing. This effort informed required plans (i.e., Project Safety and Health Plan required in Specification 01 35 24 and Construction and Demolition Waste Disposal Plan required in Specification 01 35 44). EBMUD's independent consultant with expertise in asbestos abatement prepared two reports, provided in Appendix L. The Asbestos Project Summary (NES 2020) provides a review of previous asbestos evaluations and remediation activities at the Central Reservoir site, and the Asbestos Hazard Control Specifications Review (NES 2021) provides details on how the asbestos contractor will comply with EBMUD Specifications.

A significant impact would occur if, after considering the features described in the Project Description and the required compliance with regulatory requirements, an impact would still occur. For those impacts considered to be significant, mitigation measures are proposed to reduce the identified impacts.

[*Significance Criteria* and *Criteria Requiring No Further Evaluation* subsections have been omitted from this document due to no revisions to Draft EIR text.]

Impacts and Mitigation Measures

Impacts HAZ-1 and HAZ-2: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment. (Criterion 1 and 2)

Construction

During the Project demolition and new construction phases, construction equipment and building materials may include the following substances: fuels, oils and lubricants, solvents and cleaners, cements and adhesives, paints and thinners, degreasers, cement and concrete, and asphalt mixtures. Relatively small amounts of the previously listed substances, which are not considered acutely hazardous, would be transported, used, and disposed of during construction. The routine use or an accidental spill of hazardous materials could result in inadvertent releases, which could adversely affect construction workers, the public, and the environment. Workers handling hazardous materials are required to adhere to OSHA and Cal/OSHA health and safety requirements. Hazardous materials must be transported to and from the Project area in accordance with RCRA and USDOT regulations, managed in accordance with the ACDEH regulations, and disposed of in accordance with RCRA and the CCR at a facility that is permitted to accept the waste. Since compliance with existing regulations and programs is mandatory, Project construction

activities are not expected to create a potentially significant hazard to the public or the environment.

Implementation of the Project would involve the demolition and removal of existing structures, as described in Chapter 2, *Project Description*. As described in Section 3.8.1, Environmental Setting, hazardous building materials are known to be present in the structures and include ACM, LBP, PCBs, and pentachlorophenol. The demolition activities could release hazardous building materials. As described in Section 3.8.2, numerous existing regulations require that demolition and construction activities that may disturb or require the removal of hazardous materials be inspected and/or tested for the presence of hazardous materials. If present, the hazardous materials must be managed and disposed of in accordance with applicable laws and regulations, as further described below.

General Procedures to Address Hazardous Materials During Construction

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 24, Project Safety Requirements, Section 1.3(B), Project Safety and Health Plan, and Standard Construction Specification 01 35 44, Environmental Requirements, Section 1.1(B), Site Activities, Section 1.3(A), Storm Water Management, Section 1.3(B), Water Control and Disposal Plan, Section 1.3(C), Construction and Demolition Waste Disposal Plan, and Section 1.3(D), Spill and Prevention Response Plan, Section 1.3(E), Submittal of Dust Control and Monitoring Plan, Section 3.3(D), Dust Control System Compliance, Section 3.3(C), Dust Monitoring During Demolition and Construction, Section 3.3(B), Dust Control, ~~and~~ Procedure 711, Hazardous Waste Removal, and EBMUD Environmental Compliance Manual, Trench Spoil Best Management Practices Program.

Implementation of EBMUD Standard Construction Specification 01 35 24, Section 1.3(B), would require that before the start of construction, the contractor would prepare a Project Safety and Health Plan, approved by EBMUD, that addresses anticipated hazards related to hazardous substances, fall protection, confined spaces, and trenches or excavations. The plan would also describe measures for worker protection and control of ground movement. The plan must include drawings and details of system(s) to be used, the area in which each type of system will be used, dewatering, means of access and egress, storage of materials, and equipment restrictions. The contractor would also prepare an Excavation Safety Plan, approved by EBMUD, that describes measures for worker protection and control of ground movement.

Through implementation of EBMUD Standard Construction Specification 01 35 44, Section 1.1(B), Site Activities, and Section 1.3(A), Storm Water Management, activities on the construction site would be controlled to prevent the discharge of sediment and/or other pollutants in stormwater. Section 1.3(A), Storm Water

Management, would require the submittal of a SWPPP, which would describe measures to be implemented to prevent the discharge of contaminated stormwater runoff from the worksite.

Implementation of EBMUD Standard Construction Specification 01 35 44, Section 1.3(B), Water Control and Disposal Plan, would require that the contractor submit a detailed Water Control and Disposal Plan for EBMUD's acceptance prior to any work at the jobsite. The plan would comply with requirements of all applicable discharge permits, and the contractor would maintain proper control of the discharge point to prevent erosion, scouring of bank, nuisance, contamination, and excess sedimentation into receiving waters.

Implementation of EBMUD Standard Construction Specification 01 35 44, Section 1.3(C), Construction and Demolition Waste Disposal Plan, would require that prior to construction, the contractor must prepare a Construction and Demolition Waste Disposal Plan and submit a copy of the plan for EBMUD's acceptance prior to disposing of any material (except for water wastes, which shall be addressed in the Water Control and Disposal Plan). The Construction and Demolition Waste Disposal Plan shall identify how the contractor will remove, handle, transport, and dispose of all materials required to be removed in a safe, appropriate, and lawful manner in compliance with all applicable regulations of local, state, and federal agencies having jurisdiction over the disposal of removed materials. As discussed above in *Methodology for Analysis*, EBMUD's independent consultant with expertise in asbestos abatement has provided details on how the asbestos contractor will comply with EBMUD Specifications.

Implementation of EBMUD Standard Construction Specification 01 35 44, Section 1.3(D), Spill and Prevention Response Plan, would require that prior to construction, the contractor shall submit a Spill and Prevention Response Plan detailing the means and methods for preventing and controlling the spilling of known hazardous substances used on the worksite or staging areas, and shall include a list of the hazardous substances proposed for use or generated by the contractor on site.

Implementation of EBMUD Standard Construction Specification 01 35 44, Section 1.3(E), Dust Control and Monitoring, 01 35 44, Section 3.3(B) Dust Control, Section 3.3(C) Dust Monitoring During Demolition and Construction collectively would require that prior to construction, the contractor shall submit a Dust Control and Monitoring Plan detailing the means and methods for controlling and monitoring dust generated by demolition and other work on the site. The contractor would be required to implement all necessary dust control measures in compliance with the Dust Control and Monitoring Plan and all applicable regulations. A minimum of four particulate air monitoring stations would be required along the perimeter of the job site when any potentially dust generating activity is occurring. An independent hazardous materials consultant with oversight over the construction contractor will be contracted separately to prepare and implement the air monitoring program to ensure the air monitoring program is protective of worker and public health and is compliant with regulatory requirements. The air monitoring program will utilize specific real-time air

monitors for particulates during any demolition activities and any activities that could create dust to provide immediate information as to the effectiveness of the hazardous materials abatement and dust control methods. A study will be completed prior to any construction activities to establish activity specific real-time air monitoring trigger levels (i.e. stop work, increase watering) that will be enforced on the demolition and construction contractor. Section 3.8.2, *Regulatory Framework*, provides additional details on the requirements for dust control and monitoring. As discussed above under *Methodology for Analysis*, EBMUD's hazardous materials consultant has provided Project-specific guidance on how the asbestos contractor will comply with EBMUD Specifications.

Implementation of EBMUD Procedure 711, Hazardous Waste Removal, will define hazardous wastes and establish responsibilities for the removal of hazardous wastes from EBMUD facilities; require the contractor to carry out specific steps and responsibilities for characterizing waste and determining what analyses are needed to classify the waste; coordinate waste disposal with EBMUD's Environmental Compliance Manual; ensure correct labeling, storing, inspecting, and maintaining of inventory records for waste; and require reviewing, signing, and tracking of any hazardous waste handling, disposal requirements, and hazardous waste manifests.

EBMUD Environmental Compliance Manual, Trench Spoil Best Management Practices Program, will require sampling and testing the soil on site twice: initially to ensure the soil is clean before any demolition and construction activities begin and again after hazardous material abatement measures have been completed and the Central Reservoir and Materials storage building have been demolished to ensure the soil is clean before any earthwork activities begin. In the event soil sampling and testing determines concentrations of hazardous materials exist that exceed regulatory thresholds, the contaminated soil will be removed, off hauled, and disposed of in accordance with federal, state, and local laws and regulations.

Asbestos Containing Materials

As described in Section 3.8.1, the reservoir roof contains ACM. During demolition, the roof would be dismantled, removed, and disposed of at a licensed facility permitted to accept the wastediscarded. As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 02 82 13, Asbestos Control Activities (described in Section 3.8.2), which requires that the contractor submit a detailed plan of the procedures to address ACM. The plan shall include the location and layout of decontamination areas, the sequencing of asbestos work, the interface of trades involved in the performance of work, disposal plan including location of approved disposal site, a detailed description of the methods to be employed to control pollution, description of the use of portable high efficiency particulate air (HEPA) ventilation system, method of removal to prohibit visible emissions in the work area (including suppressing air-borne particulates using a minimum of two misting units operated simultaneously), and packaging of removed asbestos debris.

The contractor's procedures for removing the reservoir roof will be based on the results of a Feasibility Assessment prepared during the design phase by an independent asbestos consultant contracted separately with EBMUD. The Feasibility Assessment will identify all potential methods for removal of the transite roof panels and select the best method that controls and contains asbestos based on the current condition of the transite panels and an understanding of the method used to install the encapsulation. The potential methods that will be evaluated by the Feasibility Assessment include: wetting and misting, removal from beneath the reservoir roof, full containment (i.e. tenting), modular (partial) containment (i.e. tenting), encapsulation (i.e application of coatings), and other options based on the current state of the art. A small-scale pilot study may need to be conducted to confirm that the selected removal approach can be effectively implemented by removing a small test section using the selected method and under full containment with negative air filtration. As previously discussed in Section 3.8.2, EBMUD will also contract an independent asbestos consultant with oversight over the construction contractor whom will also report to EBMUD during the removal of the transite roof and ensure the work is performed in a manner that is protective of workers and public health, compliant with regulatory requirements, and performed consistent with the selected method from the Feasibility Study.

As described in Section 3.8.2, EBMUD Specification 01 35 44, Environmental Requirements, EBMUD Specification 02 82 13, Asbestos Control Activities, and 01 35 24, Project Safety Requirements, the contractor will be required to conduct air monitoring to ensure workers and the public are not exposed to asbestos. Monitoring for airborne concentrations of asbestos will be conducted at the east, west, north and south property boundary and concentrations greater than regulatory control limits would require the contractor to stop work and correct the conditions causing the excessive levels. Sampling and testing for airborne asbestos fibers will take place daily and will include both real-time particulate air monitoring and laboratory analysis. This two-part air monitoring program will be conducted during any dust generating activities, including removal of the transite roof, to provide immediate information as to the effectiveness of the transite roof removal and dust control methods. In the event that real-time air monitoring indicates an increase in particulates that exceeds stop work thresholds, EBMUD's construction inspector would stop work until the cause of the particulates are identified and corrected before resuming work again.

Pursuant to state and local regulations, as well as EBMUD Standard Construction Specification 02 82 13, a site-specific Hazard Control Plan would be prepared and a State-Certified ACM removal contractor would be retained. Wastes from abatement and demolition activities would be transported to and disposed of at a Class I or a certified Class II landfill permitted to accept such waste. Once all abatement measures have been implemented, the contractor would conduct a clearance examination and provide documentation that testing and abatement were completed in accordance with federal, state, and local laws and regulations.

The required compliance with these regulations, along with implementation of EBMUD Standard Construction Specifications and Procedures during Project construction, would ensure that the Project's impacts related to the release of ACM into the environment would be less than significant.

Section 3.10, Noise and Vibration

Page 3.10-19, Table 3.10-7 has been revised as follows to correct errata:

TABLE 10.2-4
MAXIMUM ALLOWABLE RECEIVING NOISE THRESHOLDS OF SIGNIFICANCE APPLICABLE TO PROJECT CONSTRUCTION

Noise Measurement Location/ Nearest Sensitive Receptors	Maximum Allowable Noise Level (L_{eq}[1]) at the Property Line of Nearest Sensitive Receptor				
	Central Reservoir Recreation Area	**Redwood Day School**	**Southern Residences** [3]	**Ardley Avenue Residences**	**23rd Avenue Residences**
Daytime Construction Noise Limit for Work of 10 Workdays or Less 7:00 a.m.–7:00 p.m. Weekdays	85-dBA	80-dBA	80-dBA	80-dBA	80-dBA
Daytime Construction Noise Limit for Work Exceeding 10 Workdays 7:00 a.m.–7:00 p.m. Weekdays	70-dBA	65-dBA	65-dBA	65-dBA	65-dBA
Daytime Construction Noise Limit 7:00 a.m.–7:00 p.m. Weekends	55-dBA				
Evening Noise Limit (All Sources)[2] 7:00 p.m.–10:00 p.m. Weekdays and Weekends	60-dBA				
Nighttime Noise Limit (All Sources)[2] 10:00 p.m.–7:00 a.m. Weekdays and Weekends	NA (Recreation Area is closed) ~~57-dbA~~	57-dBA	46-dBA	52-dBA	52-dBA

NOTES:

1 During nighttime hours, the construction noise limits revert to applicable nighttime operational noise level standards, which are presented in terms of the L_{33} metric, the most stringent limit identified which is applied to the hourly L_{eq} as calculated by the Roadway Construction Noise Model (RCNM) using equipment usage factors.

2 The City of Oakland Noise Ordinance identifies different time periods applicable to nighttime hours. Consequently, this analysis applies separate appropriate standards for the 7:00 p.m. to 10:00 p.m. period (evening hours) and the 10:00 p.m. to 7:00 a.m. period (nighttime hours). Noise levels in this row are based on the "Nighttime Leq (10:00 p.m. to 7:00 a.m.)" readings in Table 3.10-2. NA = Not applicable as Central Reservoir Recreation Area is closed at night.

3 Southern Residences include the Oakland Heights Nursing and Rehabilitation facility and residences near East 29th Street/25th Avenue.

SOURCE: ESA; adapted from Section 17.120 of the Oakland Planning Code.

Pages 3.10-23 through 3.10-45 of Section 3.10, Noise and Vibration, including Figure 3.10-3 (Draft EIR page 3.10-27), have been revised as follows in response to comments for additional information regarding noise barriers and other construction noise control measures:

TABLE 10.2-5
NOISE LEVELS FROM SITE PREPARATION AND DEMOLITION ACTIVITIES AT SENSITIVE RECEPTORS ADJACENT TO THE PROJECT SITE

Receptor	Principal Noise Sources	Reference Noise Level (dBA)[1]	Distance to Receptor[2] (feet)	Usage Factor	Adjusted L_{eq} Level (dBA)[3]	L_{eq} Level (dBA) with Mitigation[4]	Threshold dBA	Exceeds Noise Ordinance[5]	
								No MM	With MM
Redwood Day School	Backhoe	78	50	40%	74	57	65	Yes	No
Redwood Day School	Front End Loader	79	50	40%	75	58	65	Yes	No
Redwood Day School	Hoe Ram	90	50	20%	83	66	65	Yes	Yes
Redwood Day School	Excavator	81	50	40%	77	60	65	Yes	No
Redwood Day School	Concrete Crusher	90	150[7]	20%	73	56	65	Yes	No
Redwood Day School	Trucks	77	50	17 per hour	60	43	65	No	No
Redwood Day School	**Combined Total**	**NA**	**50**	**NA**	**85**	**68**	**65**	**Yes**	**Yes**
Ardley Avenue Residences	Backhoe	77.6	75	40%	70	65~~NA~~	65	Yes	No~~A~~
Ardley Avenue Residences	Front End Loader	79.1	75	40%	72	67~~NA~~	65	Yes	Yes~~NA~~
Ardley Avenue Residences	Hoe Ram	90.3	75	20%	80	75~~NA~~	65	Yes	Yes~~NA~~
Ardley Avenue Residences	Excavator	80.7	75	40%	73	68~~NA~~	65	Yes	Yes~~NA~~
Ardley Avenue Residences	Concrete Crusher	89.6	150[7]	20%	73	68~~NA~~	65	Yes	Yes~~NA~~
Ardley Avenue Residences	Trucks	77	75	17 per hour	58	53~~NA~~	65	No	NA
Ardley Avenue Residences	**Combined Total**	**NA**	**75**	**NA**	**82**	**77~~NA~~**	**65**	**Yes**	**Yes**~~NA~~
23rd Avenue Residences	Backhoe	78	100	40%	68	63~~NA~~	65	Yes	No~~A~~
23rd Avenue Residences	Front End Loader	79	100	40%	69	64~~NA~~	65	Yes	No~~A~~
23rd Avenue Residences	Hoe Ram	90	100	20%	77	72~~NA~~	65	Yes	Yes~~NA~~
23rd Avenue Residences	Excavator	81	100	40%	71	66~~NA~~	65	Yes	Yes~~NA~~
23rd Avenue Residences	Concrete Crusher	90	150[7]	20%	73	68~~NA~~	65	Yes	Yes~~NA~~
23rd Avenue Residences	Trucks	77	100	17 per hour	56	51~~NA~~	65	No	NA
23rd Avenue Residences	**Combined Total**	**NA**	**100**	**NA**	**80**	**75~~NA~~**	**65**	**Yes**	**Yes**~~NA~~
Southern Residences[6]	Backhoe	78	160	40%	64	~~NA~~64	65	No	NA
Southern Residences[6]	Front End Loader	79	160	40%	65	65~~NA~~	65	No	NA
Southern Residences[6]	Hoe Ram	90	160	20%	73	73~~NA~~	65	Yes	Yes~~NA~~
Southern Residences[6]	Excavator	81	160	40%	67	67~~NA~~	65	Yes	Yes~~NA~~

TABLE 3.10-10 (CONTINUED)
NOISE LEVELS FROM SITE PREPARATION AND DEMOLITION ACTIVITIES AT SENSITIVE RECEPTORS ADJACENT TO THE PROJECT SITE

Receptor	Principal Noise Sources	Reference Noise Level (dBA)[1]	Distance to Receptor[2] (feet)	Usage Factor	Adjusted L_{eq} Level (dBA)[3]	L_{eq} Level (dBA) with Mitigation[4]	Threshold dBA	Exceeds Noise Ordinance[5]	
Southern Residences[6]	Concrete Crusher	90	160	20%	73	73~~NA~~	65	Yes	Yes~~NA~~
Southern Residences[6]	Trucks	77	160	17 per hour	54	NA	65	No	NA
Southern Residences[6]	**Combined Total**	**NA**	**160**	**NA**	**77**	**77~~NA~~**	**65**	**Yes**	**Yes~~NA~~**
Central Reservoir Recreation Area	Backhoe	78	65	40%	71	66~~NA~~	70	Yes	No~~NA~~
Central Reservoir Recreation Area	Front End Loader	79	65	40%	73	68~~NA~~	70	Yes	No~~NA~~
Central Reservoir Recreation Area	Hoe Ram	90	65	20%	81	76~~NA~~	70	Yes	Yes~~NA~~
Central Reservoir Recreation Area	Excavator	81	65	40%	75	70~~NA~~	70	Yes	No~~NA~~
Central Reservoir Recreation Area	Concrete Crusher	90	150[7]	20%	73	68~~NA~~	70	Yes	No~~NA~~
Central Reservoir Recreation Area	Trucks	77	65	17 per hour	58	534~~NA~~	70	No	No~~NA~~
Central Reservoir Recreation Area	**Combined Total**	**NA**	**65**	**NA**	**83**	**78~~NA~~**	**70**	**Yes**	**Yes~~NA~~**

NOTES:

1 L_{max} at 50-feet.
2 Distance between approximate location of equipment and property line of receptor.
3 The L_{eq} level is adjusted for distance and percentage of usage.
4 A Modeled noise reduction based on a 16-foot high K-rail mounted temporary noise barrier adjacent to Redwood Day School and a 6-foot high acoustical panel attached to existing fencing for all other perimeter areas (except for the Southern Residences, where the acoustical panels are not effective) is applied with Mitigation Measure NOI-1. Mitigated values are reported at the 2nd story for Redwood Day School because the resultant noise reduction at the school will depend on the height of the receptor. Where mitigation is not required for a given receptor location then this field is Not Applicable (NA).
5 Noise exceeding 65-dBA for more than 10-days near residences is considered exceeding the noise ordinance. For the Central Reservoir Recreation Area, a 70-dBA standard applies. MM= Mitigation Measure.
6 Southern Residences include the Oakland Heights Nursing and Rehabilitation facility and Residences near East 29th Street/25th Avenue.
7 Assumed distance of the concrete crusher, which is assumed to be at a centralized location and not near the Project boundary. Per EBMUD Standard Practice 3.6(F): Stationary noise sources (e.g., chippers, grinders, compressors) shall be located as far from sensitive receptors as possible.

See Figure 3.10-1 for noise measurement locations. L_{eq} represents the hourly constant sound level.

SOURCE: ESA, 2019

Table 10.2-5 shows the noise levels at sensitive receptors adjacent to the Project site from individual pieces of equipment and haul trucks as well as from their combined operation. Noise levels from haul trucks are calculated using the FHWA Traffic Noise Model and assuming peak activity of approximately 197 daily truck trips or approximately 17 trips per hour at 15-miles per hour on the site, which would be the maximum speed allowed by EBMUD Standard Construction Specification 01 35 44, Section 3.3(B) for dust control (refer to Section 3.2, Air Quality).

As shown on Table 10.2-5, the combined operation of all equipment without implementation of EBMUD standard practices (Adjusted L_{eq} Level) would exceed the 65-dBA long-term construction noise standard at the property lines of Redwood Day School, Southern Residences, Ardley Avenue Residences, and 23rd Avenue Residences and the 70-dBA long-term construction noise standard at the property lines of the Central Reservoir Recreation Area, resulting in a potential significant noise impact for these sensitive receptors.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 44, Section 1.3(G) and Section 3.6, which include a range of noise control measures such as developing a Noise Control and Monitoring Plan and requiring the contractor to implement noise control measures (e.g., mufflers or noise-attenuating shields) on all equipment. Additionally, as stated above, EBMUD Standard Construction Specification 01 14 00, Section 1.8(A), requires that noise-generating activities greater than 90-dBA (impact construction such as concrete breaking, concrete crushing, tree grinding, etc.) shall be limited to the hours of 8:00 a.m. to 4:00 p.m., Monday through Friday. Even with the incorporation of EBMUD's standard practices and procedures for noise control measures, construction equipment during demolition would still generate noise levels that exceed the construction noise ordinance limits as shown in Table 10.2-5 and the impact would potentially be significant.

To further reduce noise levels at sensitive receptors where demolition noise levels would exceed the construction noise ordinance limits, the feasibility of using temporary noise barriers was explored. Temporary noise barriers were determined feasible where there is sufficient space to install a temporary noise barrier outside of the Project construction area and where the topography between the temporary noise barrier and sensitive receptors was conducive to practical and effective noise reduction. Noise levels were evaluated using the CadnaA model for a 16-foot tall K-rail mounted temporary noise barrier, which is the tallest temporary, moveable sound wall typically used for construction.[3] A moveable sound wall is necessary to accommodate the various construction phases of the Project. A noise barrier of this size requires substantial foundation material, typically three-feet or more in width to support the wall in high winds. Sufficient space is also needed for vehicles and

[3] Based on input from a leading industry vendor, Environmental Noise Control, 16-feet is the tallest modular single k-rail system available. A larger sound wall would require a more substantial foundation system (i.e., wider than the k-rail system) for which there is insufficient room and/or permanently drilled piers which would not be moveable and are therefore not feasible for the Project.

personnel to access and install the ~~sound~~ noise barrier. Additionally, where there is a substantial difference in elevation between the barrier and a receptor, the attenuation provided can be rendered non-consequential.

A 16-foot tall K-rail mounted temporary noise barrier was considered at all sensitive receptors around the Project site. There is insufficient space along Ardley Avenue and at the East 29th Street/25th Avenue intersection because of the proximity of the property line to the Project construction area.[4] A 16-foot tall K-rail mounted temporary noise barrier would block the sidewalk from pedestrian access, -and it would require relocation of an AC transit bus stop, power poles, and signage. Also, significant tree trimming would be required which would reduce the amount of visual screening provided by the trees increasing the aesthetic impacts from Ardley Avenue and potentially impact the health of the trees. A 16-foot tall K-rail mounted temporary noise barrier on the border with the Southern Residences and the 23rd Avenue Residences would be ineffective because the ground elevation outside of the Project construction area where the noise barrier can be located is too low relative to ~~construction and~~ construction noise and the noise would travel over the approximately 16-foot tall ~~sound~~ noise barrier. Therefore, a 16-foot tall K-rail mounted temporary ~~sound~~ noise barrier between Project construction and the Southern Residences and the 23rd Avenue Residences would not be feasible.

Alternatively, for areas where the 16-foot K-rail mounted temporary noise barrier is either ineffective or infeasible, 6-foot acoustical panels are proposed to be attached to existing perimeter fencing adjacent to sensitive receptors around the Project site. For the Southern Residences, the source of the construction noise is high relative to the location of the barrier and so the 6-foot acoustical panels will have the same limitations as the 16-foot high sound wall and, therefore, the 6-foot acoustical panels may reduce noise levels little, if any, at the Southern Residences. The acoustical panels would also be installed along ~~A barrier along~~ the border with Central Reservoir Recreation Area ~~was considered, but found not to be effective because of the constrained space between the Project construction area and the property line~~. Because I-580 is a substantial noise source and there are no sensitive receptors in that area, installation of a noise barrier along the northern site boundary is not warranted.

A moveable ~~temporary~~ 16-foot tall K-rail mounted temporary noise barrier was found to be feasible and effective only for the eastern portion of the Project site adjacent to Redwood Day School because there is sufficient space between the construction areas and site boundary, and because the noise barrier ~~sound wall~~ can reduce noise levels at the school. Therefore, Mitigation Measure NOI-1 was developed which includes installation of a 16-foot tall K-rail mounted temporary noise barrier adjacent to Redwood Day School as shown on revised Figure 3.10-3. Remaining areas where perimeter fencing would be supplemented with acoustical panels would receive varying degrees of noise reduction depending on the location and elevation of the source noise to the receptor. The acoustical panels would provide a noise reduction of

[4] Other options for installing a noise barrier at this location considered by EBMUD but determined to be infeasible included installing the barrier along existing fencing and offsite (i.e., within sidewalks).

approximately 5- to 10 dBA for ground-level receptors. Some areas may receive less noise reduction, such as along the Southern Residences for reasons previously described. - Mitigated noise levels are presented in Table 3.10-10 and assume an average reduction of 5-dBA from the fence-mounted acoustical panels, except for the Southern Residences where the acoustical panels may not provide much noise reduction.

Even with the 16-foot tall K-rail mounted temporary noise barrier, there will be times when demolition noise exceeds the daytime ordinance levels at the nearest 2nd story classroom at the Redwood Day School. Mitigation Measure NOI-1 also includes a provision that EBMUD will schedule construction activities outside of normal school hours when it is feasible to do so if heavy construction equipment, including but not limited to impact equipment, is operated within approximately 100 feet[5] of the closest classroom or if the noise barrier needs to be temporarily removed to accommodate construction.

Even after considering EBMUD standard practices and procedures which includes a range of noise control measures and after incorporation of Mitigation Measure NOI-1, which includes a ~~temporary~~ 16-foot tall K-rail mounted temporary noise barrier adjacent to the Redwood Day School and fence mounted noise barriers (acoustical panels) along the remaining perimeter, noise from demolition activities would exceed the ordinance levels for all receptors. Therefore, noise increases associated with demolition activities are considered to be significant and unavoidable because, after implementation of feasible mitigation, noise levels would still exceed the daytime (7:00 a.m. to 7:00 p.m.) thresholds established by Section 17.120 of the Oakland Planning Code at some receptor locations. Noise would exceed the ordinance levels intermittently, when demolition activities are closest to receptors. ~~increases associated with demolition activities are considered to be significant and unavoidable because, after implementation of feasible mitigation, noise levels would still exceed the daytime (7:00 a.m. to 7:00 p.m.) thresholds established by Section 17.120 of the Oakland Planning Code. Noise would exceed the ordinance levels intermittently, when demolition activities are closest to receptors.~~

Overall, demolition activities would take place over a period of approximately 290 work days. Based on the duration and location of construction activities, including demolition, as they progress around the perimeter of the reservoir, no location (or receptor) would experience noise levels in excess of ordinance levels for more than a total of about 1030 ~~30~~ work days over the entire 6-year construction period.

[5] At 100-feet or more, noise levels during the nosiest construction phase (demolition) are attenuated to 65 dBA or less relative to the nearest 2nd story classroom.

SOURCE: ESRI; ESA, 2018.

EBMUD Central Reservoir Replacement Project

Figure 3.10-3
Extent of Temporary Noise Barriers Required by Mitigation Measure NOI-1

ESA

Substructure Construction Phase

The substructure construction phase would include site grading, excavation, and building the reinforced substructure (i.e., foundation) for the tanks within the existing reservoir basin during daytime hours (7:00 a.m. to 7:00 p.m.). The substructure design would include CDSM strengthening of the existing soil and installation of a new 30-foot thick fill pad constructed out of reinforced soil (the CDSM process is described in Section 2.6.1 of Chapter 2, *Project Description*). Before beginning CDSM construction, site grading would create a level surface in the basin for the CDSM rig. Up to two CDSM soil mixing rigs would be in operation for up to one 12-hour shift per day (from 7:00 a.m. – 7:00 p.m.) over several months.

Reference noise levels from a CDSM mixing rig are published by FHWA to be 80-dBA at 50-feet (FHWA, 2006) and 83-dBA at 50-feet with two mixing rigs operating simultaneously and presented in Table 10.2-6. Noise levels from the simultaneous operation of the two CDSM soil mixing rigs were simulated as a point source in the CadnaA model on top of the CDSM construction pad that takes into account changes in elevation across the project site. Table 10.2-6 presents the noise levels at sensitive receptors adjacent to the Project site from substructure construction for individual pieces of equipment, as well as for their combined operation and also includes a component for noise from the haul trucks.

As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 44, Section 1.3(G) and Section 3.6, which include a range of noise control measures such as developing a Noise Control and Monitoring Plan and requiring the contractor to implement noise control measures (e.g., mufflers or noise-attenuating shields) on all equipment. Even with the incorporation of EBMUD's standard practices and procedures for noise control measures, operation of soil mixing rigs and combined operation of all equipment (Adjusted L_{eq} Level) would exceed the City's 65-dBA long-term construction noise standard at the Redwood Day School receptor along the east property line of the Project site without a noise barrier, resulting in a potential significant noise impact for the Redwood Day School during the substructure construction phase. The noise levels at the other sensitive receptors would not exceed the City's long-term construction noise standard resulting in a less than significant impact.

TABLE 10.2-6
NOISE LEVELS FROM SUBSTRUCTURE CONSTRUCTION ACTIVITIES AT SENSITIVE RECEPTORS ADJACENT TO THE PROJECT SITE

Receptor	Principal Noise Sources	Reference Noise Level (dBA)[1]	Distance to Receptor (feet)[2]	Usage Factor	Predicted Topographic Attenuation (dBA)[2,3]	Adjusted L_{eq} Level (dBA)[3,4]	L_{eq} Level (dBA) with Mitigation[4,5]	Threshold dBA	Exceeds Noise Ordinance[5,6]	
									No MM	With MM
Redwood Day School	Compressor	78	140	40%	- 5	60	52	65	No	No
Redwood Day School	Front End Loader	79	140	40%	- 5	61	53	65	No	No
Redwood Day School	Generator	81	140	20%	- 5	64	56	65	No	No
Redwood Day School	CDSM Drill Rig (2)	83	140	50%	- 5	66	58	65	Yes	No
Redwood Day School	Haul and Water Trucks	77	140	1 per hour	- 5	37	29	65	No	No
Redwood Day School	**Combined Total**	**NA**	**140**	**NA**	**- 5**	**69**	**61**	**65**	**Yes**	**No**
Ardley Avenue Residences	Compressor	78	170	40%	-31	32	NA	65	No	NA
Ardley Avenue Residences	Front End Loader	79	170	40%	-31	34	NA	65	No	NA
Ardley Avenue Residences	Generator	81	170	20%	-31	36	NA	65	No	NA
Ardley Avenue Residences	CDSM Drill Rig (2)	83	170	40%	-31	39	NA	65	No	NA
Ardley Avenue Residences	Haul and Water Trucks	77	170	1 per hour	-31	11	NA	65	No	NA
Ardley Avenue Residences	**Combined Total**	**NA**	**170**	**NA**	**-31**	**42**	**NA**	**65**	**No**	**NA**
23rd Avenue Residences	Compressor	78	420	40%	-28	27	NA	65	No	NA
23rd Avenue Residences	Front End Loader	79	420	40%	-28	29	NA	65	No	NA
23rd Avenue Residences	Generator	81	420	20%	-28	31	NA	65	No	NA
23rd Avenue Residences	CDSM Drill Rig (2)	83	420	40%	-28	34	NA	65	No	NA
23rd Avenue Residences	Haul and Water Trucks	77	420	20%	-28	10	NA	65	No	NA
23rd Avenue Residences	**Combined Total**	**NA**	**420**	**NA**	**-28**	**37**	**NA**	**65**	**No**	**NA**
Southern Residences[6,7]	Compressor	78	980	40%	-28	20	NA	65	No	NA
Southern Residences[6,7]	Front End Loader	79	980	40%	-28	21	NA	65	No	NA
Southern Residences[6,7]	Generator	81	980	20%	-28	24	NA	65	No	NA
Southern Residences[6,7]	CDSM Drill Rig (2)	83	980	40%	-28	26	NA	65	No	NA
Southern Residences[6,7]	Haul and Water Trucks	77	980	20%	-28	5	NA	65	No	NA
Southern **Residences**[6,7]	**Combined Total**	**NA**	**980**	**NA**	**-28**	**30**	**NA**	**65**	**No**	**NA**

TABLE 3.10-11 (CONTINUED)
NOISE LEVELS FROM SUBSTRUCTURE CONSTRUCTION ACTIVITIES AT SENSITIVE RECEPTORS ADJACENT TO THE PROJECT SITE

Receptor	Principal Noise Sources	Reference Noise Level (dBA)[1]	Distance to Receptor (feet)[2]	Usage Factor	Predicted Topographic Attenuation (dBA)[2,3]	Adjusted L_{eq} Level (dBA)[3,4]	L_{eq} Level (dBA) with Mitigation[4,5]	Threshold dBA	Exceeds Noise Ordinance[5,6]	
									No MM	With MM
Central Reservoir Recreation Area	Compressor	78	140	40%	- 5	60	NA	70	No	NA
Central Reservoir Recreation Area	Front End Loader	79	140	40%	- 5	61	NA	70	No	NA
Central Reservoir Recreation Area	Generator	81	140	20%	- 5	64	NA	70	No	NA
Central Reservoir Recreation Area	CDSM Drill Rig (2)	83	140	50%	- 5	66	NA	70	No	NA
Central Reservoir Recreation Area	Haul and Water Trucks	77	140	1 per hour	- 5	37	NA	70	No	NA
Central Reservoir Recreation Area	**Combined Total**	**NA**	**140**	**NA**	**- 5**	**69**	**NA**	**70**	**No**	**NA**

NOTES:
1 L_{max} at 50-feet.
2 Distance between approximate location of equipment and property line of receptor
2,3 Topographic attenuation is the reduction in sound from the site's land features and was determined by three-dimensional modeling of CDSM drill rigs.
3,4 The L_{eq} level is adjusted for distance, topographic attenuation, and percentage of usage.
4,5 A Modeled noise reduction based on a 16-foot high K-rail mounted temporary noise barrier adjacent to Redwood Day School and a 6-foot high acoustical panel attached to existing fencing for all other perimeter areas (except for the Southern Residences, where the acoustical panels are not effective) is applied with Mitigation Measure NOI-1. Mitigated values are the reported Leg at the 2nd story for Redwood Day School because the resultant noise reduction at the school will depend on the height of the receptor. Mitigation Measure NOI-1. Where mitigation is not required for a given receptor location then this field is Not Applicable (NA).
5,6 Noise exceeding 65-dBA for more than 10-days near residences is considered exceeding the noise ordinance. For the Central Reservoir Recreation Area, a 70-dBA standard applies; MM = mitigation measures.
6,7 Southern Residences include the Oakland Heights Nursing and Rehabilitation facility and Residences near East 29th Street/25th Avenue.

See Figure 3.10-1 for noise measurement locations. L_{eq} represents the hourly constant sound level.

SOURCE: ESA, 2019

Mitigation Measure NOI-1, which includes installation of a 16-foot tall K-rail mounted temporary noise barrier adjacent to Redwood Day School and fence mounted temporary noise barriers (acoustical panels) along the remaining perimeter fencing, would reduce noise impacts to Redwood Day School as shown in Table 10.2-6. The 16-foot tall K-rail mounted temporary noise barrier required by Mitigation Measure NOI-1 would reduce noise levels below 65-dBA at Redwood Day School during daytime hours (7:00 p.m. to 7:00 p.m.). Consequently, with implementation of Mitigation Measure NOI-1, noise increases from the substructure construction phase would be less than significant.

Tank and Valve Structure Construction Phase

The tank and valve structure construction phase involves the following:

- *Tank and valve structure construction activities*: construct the tank foundation, wall, and roofs; prestressing and shotcrete application; and tank and valve structure construction;
- *Central Rate Control Station (RCS) construction activities*: demolish the existing Central RCS and construct a new RCS;
- *Pipeline construction activities*: construct the pipelines between the tanks and the valve structure and between the RCS and the valve structure; and replace an approximate 80-foot section of 24-inch pipeline in the sidewalk and road on East 29th Street with a 30-inch pipeline.

Tank and Valve Structure Construction Activities

Tank and valve structure construction activities which would occur during the Tank and Valve Structure Construction Phase would involve daytime (7:00 a.m. to 7:00 p.m.) construction with the exception for concrete work. Concrete work would require a 6:00 a.m. start time (6:00 a.m. to 7:00 a.m. is considered to be a nighttime hour by Section 17.120.050 of the City of Oakland Planning Code) due to the need for setup in the morning to mobilize a pump truck prior to the first delivery of concrete. Pump trucks would typically arrive at 6:00 a.m., ahead of the rest of the concrete crew. Disruptions in the concrete pour can affect the quality of the concrete work and service life of the structure; therefore, it is extremely important that concrete trucks arrive at regular intervals, particularly later in the concrete pour. If concrete truck movement is inhibited by heavy traffic later during afternoon commute hours, the concrete pour operation could be disrupted. In addition, concrete work is affected by temperature. Early start times ensure longer periods of time when temperatures are lower and concrete sets slower and is easier to work with.

Table 10.2-7 presents the noise levels at sensitive receptors adjacent to the Project site from tank and valve construction activities for individual pieces of equipment, as well as for their combined operation and also includes a component for noise from the haul trucks.

TABLE 10.2-7
DAYTIME (7:00 A.M. TO 7:00 P.M.) NOISE LEVELS FROM TANK AND VALVE STRUCTURE CONSTRUCTION ACTIVITIES AT SENSITIVE RECEPTORS ADJACENT TO THE PROJECT SITE

Receptor	Principal Noise Sources	Reference Noise Level (dBA)[1]	Distance to Receptor (feet)[2]	Usage Factor	Predicted Topographic Attenuation (dBA)[2][3]	Adjusted L_{eq} Level (dBA)[3][4]	L_{eq} Level (dBA) with Mitigation[4][5]	Threshold dBA	Exceeds Noise Ordinance[5][6]	
									No MM	With MM
Redwood Day School	Compressor (2)	78	65	40%	- 17	57	43	65	No	No
Redwood Day School	Crane	85	65	16%	- 17	53	39	65	No	No
Redwood Day School	Generator (2)	81	65	50%	- 17	61	47	65	No	No
Redwood Day School	Telehandler (2)	83	65	40%	- 17	63	49	65	No	No
Redwood Day School	Concrete Mixer Truck	79	65	40%	-17	56	42	57	No	No
Redwood Day School	Haul and Water Trucks	77	65	1 per hour	- 17	29	15	65	No	No
Redwood Day School	**Combined Total**	**NA**	**65**	**NA**	**- 17**	**67**	**53**	**65**	**Yes**	**No**
Ardley Avenue Residences	Compressor (2)	78	140	40%	-20	48	NA	65	No	NA
Ardley Avenue Residences	Crane	85	140	16%	-20	44	NA	65	No	NA
Ardley Avenue Residences	Generator (2)	81	140	50%	-20	52	NA	65	No	NA
Ardley Avenue Residences	Telehandler (2)	83	140	40%	-20	54	NA	65	No	NA
Ardley Avenue Residences	Haul and Water Trucks	77	140	1 per hour	-20	23	NA	65	No	NA
Ardley Avenue Residences	Concrete Mixer Truck	79	140	40%	-20	46	NA	52	No	NA
Ardley Avenue Residences	**Combined Total**	**NA**	**140**	**NA**	**-20**	**57**	**NA**	**65**	**No**	**NA**
23rd Avenue Residences	Compressor (2)	78	225	40%	-9	55	NA	65	No	NA
23rd Avenue Residences	Crane	85	225	16%	-9	51	NA	65	No	NA
23rd Avenue Residences	Generator (2)	81	225	50%	-9	59	NA	65	No	NA
23rd Avenue Residences	Telehandler (2)	83	225	40%	-9	60	NA	65	No	NA
23rd Avenue Residences	Haul and Water Trucks	77	225	1 per hour	-9	32	NA	65	No	NA
23rd Avenue Residences	Concrete Mixer Truck	79	225	40%	-9	53	NA	54	No	NA
23rd Avenue Residences	**Combined Total**	**NA**	**225**	**NA**	**-9**	**64**	**NA**	**65**	**No**	**NA**
Southern Residences[6][7]	Compressor (2)	78	675	40%	-26	28	NA	65	No	NA
Southern Residences[6][7]	Crane	85	675	16%	-26	24	NA	65	No	NA
Southern Residences[6][7]	Generator (2)	81	675	50%	-26	32	NA	65	No	NA
Southern Residences[6][7]	Telehandler (2)	83	675	40%	-26	34	NA	65	No	NA
Southern Residences[6][7]	Haul and Water Trucks	77	675	1 per hour	-26	9	NA	65	No	NA

TABLE 3.10-12 (CONTINUED)
DAYTIME (7:00 A.M. TO 7:00 P.M.) NOISE LEVELS FROM TANK AND VALVE STRUCTURE CONSTRUCTION ACTIVITIES AT SENSITIVE RECEPTORS ADJACENT TO THE PROJECT SITE

Receptor	Principal Noise Sources	Reference Noise Level (dBA)[1]	Distance to Receptor (feet)[2]	Usage Factor	Predicted Topographic Attenuation (dBA)[23]	Adjusted L_{eq} Level (dBA)[34]	L_{eq} Level (dBA) with Mitigation[45]	Threshold dBA	Exceeds Noise Ordinance[56]	
									No MM	With MM
Southern Residences[7]	Concrete Mixer Truck	79	675	40%	-26	26	NA	46	No	NA
Southern Residences[67]	**Combined Total**	**NA**	**675**	**NA**	**-26**	**37**	**NA**	**65**	**No**	**NA**
Central Reservoir Recreation Area	Compressor (2)	78	250	40%	-17	45	NA	70	No	NA
Central Reservoir Recreation Area	Crane	85	250	16%	-17	42	NA	70	No	NA
Central Reservoir Recreation Area	Generator (2)	81	250	50%	-17	50	NA	70	No	NA
Central Reservoir Recreation Area	Telehandler (2)	83	250	40%	-17	51	NA	70	No	NA
Central Reservoir Recreation Area	Haul and Water Trucks	77	250	1 per hour	-17	35	NA	70	No	NA
Central Reservoir Recreation Area	Concrete Mixer Truck	79	250	40%	-17	44	NA	46	No	NA
Central Reservoir Recreation Area	**Combined Total**	**NA**	**250**	**NA**	**-17**	**55**	**NA**	**70**	**No**	**NA**

NOTES:

dBA = A-weighted decibel; MM = Mitigation Measure; NA = Not Applicable

1 L_{max} at 50-feet.

2 Distance between approximate location of equipment and property line of receptor.

23 Topographic attenuation is the reduction in sound from the site's land features and was determined by three-dimensional modeling.

34 The L_{eq} level is adjusted for distance, topographic attenuation, and percentage of usage.

45 Implementation of Mitigation Measure NOI-1 assumes a 16-foot K-rail mounted temporary noise barrier along Redwood Day School. Mitigated values are reported at the 2nd story because the resultant noise reduction at the school will depend on the height of the receptor) along the boundary with Redwood Day School. Where mitigation is not required for a given receptor location then this field is Not Applicable (NA).

56 Noise exceeding 65-dBA for more than 10-days near residences is considered exceeding the noise ordinance during daytime hours (7:00 a.m. to 7:00 p.m.). For the Central Reservoir Recreation Area, a 70-dBA standard applies. Concrete trucks would operate starting at 6:00 a.m., which would include 1-hour of nighttime operations and the nighttime standards are applied.

67 Southern Residences include the Oakland Heights Nursing and Rehabilitation facility and Residences near East 29th Street/25th Avenue.

See Figure 3.10-1 for noise measurement locations. L_{eq} represents the hourly constant sound level.

SOURCE: ESA, 2019

Differences in elevation caused by natural and man-made topography (such as the reservoir basin) are important considerations to accurately predict construction noise levels. Similar to the above analysis of the substructure construction phase, CadnaA three-dimensional modeling was conducted with equipment around the fill pad locations that considered the elevation of the work with respect to the elevations of the closest sensitive receptors.

As described in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including Standard Construction Specification 01 35 44, Section 1.3(G) and Section 3.6, which include a range of noise control measures such as developing a Noise Control and Monitoring Plan and requiring the contractor to implement noise control measures (e.g., mufflers or noise-attenuating shields) on all equipment. Even with the incorporation of EBMUD's standard practices and procedures for noise control measures, the combined operation of all equipment would exceed the 65-dBA long-term construction noise standard at the Redwood Day School receptor along the east property line of the Project site without mitigation, resulting in a potential significant noise impact for the Redwood Day School. The noise levels at the other sensitive receptors would not exceed the City's applicable long-term construction noise standard during daytime (7:00 a.m. to 7:00 p.m.) activities resulting in a less than significant impact.

Mitigation Measure NOI-1 ~~would provide~~ includes installation of a ~~temporary~~ 16-foot tall K-rail mounted temporary noise barrier along the east property line with Redwood Day School and fence mounted temporary noise barriers (acoustical panels) along the remaining perimeter fencing, with the exception of the northern boundary along I-580 (refer to revised ~~see~~ Figure 3.10-3). The presence of the noise barrier would be sufficient to maintain noise levels below 65-dBA at Redwood Day School based on the CadnaA model. Consequently, with implementation of Mitigation Measure NOI-1, noise increases from the tank and valve structure construction activities would be less than significant.

Central RCS Construction Activities

Central RCS construction activities which would occur during the Tank and Valve Structure Construction Phase would involve daytime (7:00 a.m. to 7:00 p.m.) construction. The sensitive receptors affected by the RCS construction activities are the Southern Residences and the Central Reservoir Recreation Area because the construction activities will occur at the southeastern section of the Project site. For sensitive receptors affected by RCS construction activities, Table 10.2-8 presents the noise levels for individual pieces of equipment, as well as for their combined operation and also includes a component for noise from the haul trucks. Even with the incorporation of EBMUD's standard practices and procedures for noise control measures, the combined operation of all equipment would exceed the daytime (7:00 a.m. to 7:00 p.m.) 65-dBA long-term construction noise standard at the Southern Residences along the southern property line of the Project site without mitigation and would also exceed the 70-dBA long-term construction noise standard at the Central Reservoir Recreation Area, resulting in a potential significant noise impact. As

TABLE 10.2-8
NOISE LEVELS FROM CENTRAL RCS CONSTRUCTION ACTIVITIES AT SENSITIVE RECEPTORS ADJACENT TO THE PROJECT SITE

Receptor	Principal Noise Sources	Reference Noise Level (dBA)[1]	Distance to Receptor (feet)[2]	Usage Factor	Adjusted L_{eq} Level (dBA)[2~~3~~]	L_{eq} Level (dBA) with Mitigation[4~~4~~]	Threshold dBA[3]	Exceeds Noise Ordinance[4~~5~~]	
								No MM	With MM
Southern Residences[4~~6~~]	Compressor (2)	78	100	40%	71	71~~NA~~	65	Yes	Yes~~NA~~
Southern Residences[4~~6~~]	Crane	85	100	16%	67	67~~NA~~	65	Yes	Yes~~NA~~
Southern Residences[4~~6~~]	Generator (2)	81	100	50%	75	75~~NA~~	65	Yes	Yes~~NA~~
Southern Residences[4~~6~~]	Telehandler (2)	83	100	40%	76	76~~NA~~	65	Yes	Yes~~NA~~
Southern Residences[4~~6~~]	Haul and Water Trucks	77	100	1 per hour	35	35~~NA~~	65	No	No~~A~~
Southern Residences[4~~6~~]	Concrete Mixer Truck	79	100	40%	26	26~~NA~~	65	No	No~~A~~
Southern Residences[4~~6~~]	**Combined Total**	**NA**	**100**	**NA**	**80**	**80~~NA~~**	**65**	**Yes**	**Yes~~NA~~**
Central Reservoir Recreation Area	Compressor (2)	78	100	40%	71	66~~NA~~	70	Yes	No~~NA~~
Central Reservoir Recreation Area	Crane	85	100	16%	67	62~~NA~~	70	No	No~~NA~~
Central Reservoir Recreation Area	Generator (2)	81	100	50%	75	70~~NA~~	70	Yes	No~~NA~~
Central Reservoir Recreation Area	Telehandler (2)	83	100	40%	76	71~~NA~~	70	Yes	Yes~~NA~~
Central Reservoir Recreation Area	Haul and Water Trucks	77	100	1 per hour	35	30~~NA~~	70	No	No~~NA~~
Central Reservoir Recreation Area	Concrete Mixer Truck	79	100	40%	26	21~~NA~~	70	No	No~~NA~~
Central Reservoir Recreation Area	**Combined Total**	**NA**	**100**	**NA**	**80**	**75~~NA~~**	**70**	**Yes**	**Yes~~NA~~**

NOTES:

1 L_{max} at 50-feet.

2 Distance between approximate location of equipment and property line of receptor.

~~2~~3 The L_{eq} level is adjusted for distance and percentage of usage.

4 Noise reduction based on a 6-foot high acoustical panel attached to existing fencing for the Central Reservoir Recreation Area.

~~3~~5 Noise exceeding 65-dBA for more than 10-days near residences is considered exceeding the noise ordinance during daytime hours (7:00 a.m. to 7:00 p.m.). For the Central Reservoir Recreation Area, a 70-dBA standard applies. MM = mitigation measures.

~~4~~5 Southern Residences include the Oakland Heights Nursing and Rehabilitation facility and Residences near East 29th Street/25th Avenue.

See Figure 3.10-1 for noise measurement locations. L_{eq} represents the hourly constant sound level.

SOURCE: ESA, 2019

discussed earlier under the analysis of site preparation and demolition phase, a noise barrier on the border with the Southern Residences would be ineffective because the ground elevation outside of the Project construction area where the noise barrier can be located is too low relative to construction and construction noise would travel over the 16-foot tall ~~sound~~ K-rail mounted temporary noise barrier. ~~Therefore~~However, a ~~sound~~fence mounted (acoustical panels) temporary noise barrier along the Southern Residences would ~~not be feasible~~be installed per Mitigation Measure NOI-1, and would provide some noise attenuation at ground level near the site boundary. A ~~barrier along the border with Central Reservoir Recreation Area was~~ fence mounted (acoustical panels) temporary noise barrier would also be installed along the Central Reservoir Recreation area per Mitigation Measure NOI-1~~considered, but found not to be feasible because of the constrained space between the Project construction area and the property line~~.

Mitigation Measure NOI-1 would reduce noise impacts as shown in Table 10.2-6. The addition of acoustical panels to existing perimeter fencing along the remaining areas as required by Mitigation Measure NOI-1 would reduce noise levels at the Southern residences and at the Central Reservoir Recreation Area but not to below the respective 65-dBA and 70-dBA daytime hours (7:00 a.m. to 7:00 p.m.) standards. Therefore, with implementation of Mitigation Measure NOI-1, noise increases from the Central RCS construction phase would remain significant.

Therefore, noise increases associated with Central RCS construction activities are considered to be significant and unavoidable because feasible mitigation is not available and noise levels would still occasionally exceed the daytime (7:00 a.m. to 7:00 p.m.) thresholds established by Section 17.120 of the Oakland Planning Code at some receptor locations. Noise would exceed the ordinance levels intermittently, when construction activities are closest to receptors. Therefore, based on the duration, timing and location of Central RCS construction activities, noise impacts would be significant and unavoidable. Overall, tank and valve structure construction activities would take place over a period of approximately 26 months, including RCS construction activities; however, no location (or receptor) would experience noise levels in excess of ordinance levels for more than a total of about 10 work ~~30~~ days over the entire 6-year construction period, including all phases of construction.

Pipeline Connection Activities

Pipeline connection activities which would occur during the Tank and Valve Structure Construction Phase would occur during daytime (7:00 a.m. to 7:00 p.m.) and potentially evening (7:00 p.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) hours. Pipeline connection activities would connect new pipelines to the existing distribution system. The sensitive receptors affected by the pipeline connection activities are the Southern Residences and the Central Reservoir Recreation Area because the pipeline connections would take place at the southeastern section of the Project site.

Trench construction for the pipeline would be performed during daytime hours (7:00 a.m. to 7:00 p.m.) and would not occur at night. Daytime equipment operations

for these connections would also include pavement cutting, pipeline cutting, compaction, and use of a backhoe. If the connection cannot be completed within the daytime hours, construction may extend into the evening (7:00 p.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.). The connections would be conducted at the corner of 25th Avenue and East 29th Street, approximately 80-feet from the nearest existing residence at 2505 East 29th Street over approximately two consecutive nights. Evening and nighttime equipment operations would include pipeline cutting and welding.

For sensitive receptors affected by pipeline connection activities, Table 10.2-9 presents the noise levels for individual pieces of equipment, as well as for their combined operation. ~~A daytime (7:00 a.m. to 7:00 p.m.) threshold of 65-dBA applies to the Southern Residences affected by pipeline connection activities.~~ As indicated in Table 10.2-9, even with the incorporation of EBMUD's standard practices and procedures for noise control measures, the combined operation of all equipment would exceed the daytime (7:00 a.m. to 7:00 p.m.) 65-dBA for the Southern Residences and 70-dBA for the Central Reservoir Recreation Area, and the evening (7:00 p.m. to 10:00 p.m.) 60-dBA long-term construction noise standards at both the Southern Residences and Central Reservoir Recreation Area. ~~As indicated in Table 10.2-9, even with the incorporation of EBMUD's standard practices and procedures for noise control measures, the combined operation of all equipment would exceed the daytime (7:00 a.m. to 7:00 p.m.) 65-dBA long-term construction noise standard at the Southern Residences.~~ Additionally, nighttime activities would be subject to the City's L_{33} standard at the Southern Residences, which ~~for this area~~ was monitored to be 46-dBA. The nighttime work would exceed 46-dBA and represent a short-term significant noise impact over two consecutive nights. The Central Reservoir Recreation Area is closed at night (after 9 p.m.) and is therefore not affected by nighttime noise. Mitigation Measure NOI-2 states that EBMUD will offer residents within 500-feet[6] of the pipeline connection construction site alternative lodging during this 2-day period. Notwithstanding this mitigation, this 2-day nighttime noise impact is also identified as significant and unavoidable because the noise ordinance would still be exceeded. Therefore, based on the duration, timing and location of Pipeline Connection construction activities, noise impacts would be significant and unavoidable.

Overall, tank and valve structure construction activities would take place over a period of approximately 26 months, including Pipeline Connection activities; however, no location (or receptor) would experience noise levels in excess of

6 The 500-foot distance applies only to residences within 500 feet of construction activities, and is determined by applying spherical spreading losses (6 dBA per doubling of distance) to a noise level of 80 dBA (Leq) at 50 feet, resulting in a noise level of 60 dBA (Leq) at 500 feet. While an exterior noise level of 60 dBA (Leq) would still exceed the 46-dBA nighttime ordinance threshold, the exterior shell of a house can reduce exterior noise levels by 25 dBA with the windows closed, which would result in an interior level of 35 dBA (Leq) with windows closed. Based on available sleep criteria data, an interior nighttime level of 35 dBA is considered acceptable (U.S. EPA, 1974). The requirement that windows must be closed to achieve this acceptable level is assumed to be feasible since exposure would only be for two nights.

ordinance levels for more than a total of about ~~30~~ 10 work days over the entire 6-year construction period, including all phases of construction.

Site Restoration Phase

Once construction is complete, the site would be restored, graded, and landscaped over a period of approximately 5-months, as described in Table 2-2 of Chapter 2, *Project Description*.[7] As an optional component of the Project, if approved, EBMUD may also authorize the Redwood Day School to construct a private driveway along the north end of the existing reservoir property at Ardley Avenue. Site restoration activities would involve the use of off-road equipment and haul trucks. Site restoration activities would involve daytime (7:00 a.m. to 7:00 p.m.) construction.

For the analysis of noise impacts from site restoration activities, RCNM was used to assess whether Project activities could exceed noise ordinance limits similar to how the noise levels were analyzed for the Site Preparation and Demolition Phase. Table 10.2-10 presents the Project-related construction noise levels at each of the five closest sensitive receptor areas surrounding the Project site, based on distance and equipment type and duration of use, as predicted by RCNM. Table 10.2-10 also includes a component for noise from haul trucks, calculated separately using the FHWA Traffic Noise Model and assuming a peak of approximately 64 daily truck trips or approximately 6 trips per hour at 15-miles per hour on the site as on-site truck speeds would be limited by EBMUD Standard Construction Specification 01 35 44, Section 3.3(B) for dust control (refer to Section 3.2, Air Quality). The predicted noise levels are conservative in that they assume activity at the closest point to each sensitive receptor, which would not occur for the entire timeframe of site restoration activities.

As shown on Table 10.2-10, the combined operation of all equipment would exceed the 65-dBA long-term construction noise standard at the property line of the closest residential receptor locations and the 70-dBA standard applicable to the Central Reservoir Recreation Area, resulting in a potential significant noise impact for these sensitive receptors. As detailed in the Project Description, a number of EBMUD standard practices and procedures, applicable to all EBMUD projects, have been incorporated into the Project, including EBMUD Standard Specification 01 35 44, Section 1.3(G) and Section 3.6, which include a range of noise control measures such as developing a Noise Control and Monitoring Plan and requiring the contractor to implement noise control measures (e.g., mufflers or noise-attenuating shields) on all equipment. Even with the incorporation of EBMUD's standard practices and procedures for noise control measures, operation of most equipment (Adjusted L_{eq} Level) would exceed the City's long-term construction noise ordinance at all sensitive receptors resulting in a potentially significant impact.

[7] The site restoration phase overlaps with the last approximate 3-months of the tank and valve structure construction phase, during field testing and startup.

TABLE 10.2-9
NOISE LEVELS FROM PIPELINE CONNECTION ACTIVITIES AT SENSITIVE RECEPTORS ADJACENT TO THE PROJECT SITE

Receptor	Principal Noise Sources	Reference Noise Level (dBA)[1]	Distance to Receptor (feet)[2]	Usage Factor	Adjusted L_{eq} Level (dBA)[2][3]	L_{eq} Level (dBA) with Mitigation[3][4]	Threshold dBA	Exceeds Noise Ordinance[4][5]	
								No MM	With MM
Daytime Work (7:00 a.m. to 7:00 p.m.)									
Southern Residences near East 29th Street/25th Avenue~~2505 East 29th Street~~ ~~2505 East 29th Street~~ ~~2505 East 29th Street~~ ~~2505 East 29th Street~~	Concrete Crusher	90	80	40%	79	NA	65	Yes	NA
	Compactor	83	80	20%	72	NA	65	Yes	NA
	Backhoe	78	80	40%	70	NA	65	Yes	NA
	Pipe Cutter (Saw)[5][6]	76	80	40%	68	NA	65	Yes	NA
	Combined Total	**NA**	**80**	**NA**	**80**	**NA**	**65**	**Yes**	**NA**
Central Reservoir Recreation Area	Concrete Crusher	90	80	40%	79	NA	70	Yes	NA
	Compactor	83	80	20%	72	NA	70	Yes	NA
	Backhoe	78	80	40%	70	NA	70	No	NA
	Pipe Cutter (Saw)[5]	76	80	40%	68	NA	70	No	NA
	Combined Total	**NA**	**80**	**NA**	**80**	**NA**	**70**	**Yes**	**NA**
Evening Work (7:00 p.m. to 10:00 p.m.)									
Southern Residences near East 29th Street/25th Avenue	Pipe Cutter (Saw)	76	80	40%	68	NA	60	Yes	Yes
	Welder	74	80	40%	66	NA	60	Yes	Yes
	Combined Total	**NA**	**80**	**NA**	**70**	**NA**	**60**	**Yes**	**Yes**
Central Reservoir Recreation Area	Pipe Cutter (Saw)	76	80	40%	68	NA	60	Yes	Yes
	Welder	74	80	40%	66	NA	60	Yes	Yes
	Combined Total	**NA**	**80**	**NA**	**70**	**NA**	**60**	**Yes**	**Yes**
~~Evening and~~ Nighttime Work (~~7:~~10:00 p.m. to 7:00 a.m.)									
Southern Residences~~2505 East 29th Street~~ near East 29th Street/25th Avenue ~~2505 East 29th Street~~ ~~2505 East 29th Street~~	Pipe Cutter (Saw)	76	80	40%	68	NA	46	Yes	Yes
	Welder	74	80	40%	66	NA	46	Yes	Yes
	Combined Total	**NA**	**80**	**NA**	**70**	**NA**	**46**	**Yes**	**Yes**

NOTES:

1 L_{max} at 50-feet.
2 Distance between approximate location of equipment and property line of receptor.
~~2~~3 The L_{eq} level is adjusted for distance and percentage of usage.
~~3~~4 It is not practicable to construct a temporary noise barrier as mitigation for two nights of work; therefore, mitigation for this nighttime work consists of offering alternative lodging for nearby residences. Where mitigation is not required or practicable for a given receptor location then this field is Not Applicable (NA)
~~4~~5 Daytime noise exceeding 65-dBA for more than 10-days near residences and 70-dBA for the Central Reservoir Recreation Area is considered exceeding the noise ordinance during daytime hours (7:00 a.m. to 7:00 p.m.). Nighttime noise exceeding the existing L_{33} of 46-dBA at the nearest residences at the Southern Residences ~~this~~ location is considered exceeding the noise ordinance. MM = mitigation measures.
~~5~~6 Pipe cutter reference noise levels that of a standard gas powered saw is from FTA (2018) and was selected to be representative of a pipe cutter in lieu of available noise specification specific to pipe cutters.

See Figure 3.10-1 for noise measurement locations. L_{eq} represents the hourly constant sound level.

SOURCE: ESA, 2019

TABLE 10.2-10
NOISE LEVELS FROM SITE RESTORATION ACTIVITIES AT SENSITIVE RECEPTORS ADJACENT TO THE PROJECT SITE

Receptor	Principal Noise Sources	Reference Noise Level (dBA)[1]	Distance to Receptor (feet)[2]	Usage Factor	Adjusted L_{eq} Level (dBA)[2,3]	L_{eq} Level (dBA) with Mitigation[3,4]	Threshold dBA	Exceeds Noise Ordinance[4,5]	
								No MM	With MM
Redwood Day School	Backhoe	78	50	40%	74	69	65	Yes	Yes
Redwood Day School	Front End Loader	79	50	40%	75	70	65	Yes	Yes
Redwood Day School	Excavator	81	50	40%	77	72	65	Yes	Yes
Redwood Day School	Compactor	83	50	20%	76	71	65	Yes	Yes
Redwood Day School	Haul and Water Trucks	77	50	1 per hour	48	43	65	No	No
Redwood Day School	**Combined Total**	**NA**	**50**	**NA**	**82**	**77**	**65**	**Yes**	**Yes**
Ardley Avenue Residences	Backhoe	78	75	40%	70	65NA	65	Yes	NoA
Ardley Avenue Residences	Front End Loader	79	75	40%	72	67NA	65	Yes	Yes NA
Ardley Avenue Residences	Excavator	81	75	40%	73	68NA	65	Yes	Yes NA
Ardley Avenue Residences	Compactor	83	75	20%	73	68NA	65	Yes	Yes NA
Ardley Avenue Residences	Haul and Water Trucks	77	75	1 per hour	45	40NA	65	No	NoA
Ardley Avenue Residences	**Combined Total**	**NA**	**75**	**NA**	**79**	**75NA**	**65**	**Yes**	**Yes** NA
23rd Avenue Residences	Backhoe	78	100	40%	68	63NA	65	Yes	NoA
23rd Avenue Residences	Front End Loader	79	100	40%	69	64NA	65	Yes	NoA
23rd Avenue Residences	Excavator	81	100	40%	71	66NA	65	Yes	Yes NA
23rd Avenue Residences	Compactor	83	100	20%	70	65NA	65	Yes	NoA
23rd Avenue Residences	Haul and Water Trucks	77	100	1 per hour	44	39NA	65	No	NoA
23rd Avenue Residences	**Combined Total**	**NA**	**100**	**NA**	**76**	**71NA**	**65**	**Yes**	**Yes**NA
Southern Residences[5,6]	Backhoe	78	50	40%	74	74NA	65	Yes	Yes NA
Southern Residences[5,6]	Front End Loader	79	50	40%	75	75NA	65	Yes	Yes NA
Southern Residences[5,6]	Excavator	81	50	40%	77	77NA	65	Yes	Yes NA
Southern Residences[5,6]	Compactor	83	50	20%	76	76NA	65	Yes	Yes NA
Southern Residences[5,6]	Haul and Water Trucks	77	50	1 per hour	48	48NA	65	No	NoA
Southern Residences[5,6]	**Combined Total**	**NA**	**50**	**NA**	**82**	**82NA**	**65**	**Yes**	**Yes**NA
Central Reservoir Recreation Area	Backhoe	78	65	40%	71	66NA	70	Yes	NoNA

TABLE 3.10-15 (CONTINUED)
NOISE LEVELS FROM SITE RESTORATION ACTIVITIES AT SENSITIVE RECEPTORS ADJACENT TO THE PROJECT SITE

Receptor	Principal Noise Sources	Reference Noise Level (dBA)[1]	Distance to Receptor (feet)[2]	Usage Factor	Adjusted L_{eq} Level (dBA)[23]	L_{eq} Level (dBA) with Mitigation[34]	Threshold dBA	Exceeds Noise Ordinance[45]	
								No MM	With MM
Central Reservoir Recreation Area	Front End Loader	79	65	40%	73	68NA	70	Yes	NoNA
Central Reservoir Recreation Area	Excavator	81	65	40%	75	70NA	70	Yes	NoNA
Central Reservoir Recreation Area	Compactor	83	65	20%	74	69NA	70	Yes	NoNA
Central Reservoir Recreation Area	Haul and Water Trucks	77	65	1 per hour	46	41NA	70	No	NoNA
Central Reservoir Recreation Area	**Combined Total**	**NA**	**65**	**NA**	**79**	**74NA**	**70**	**Yes**	**Yes**NA

NOTES:

1 L_{max} at 50-feet.

2 Distance between approximate location of equipment and property line of receptor

23 The L_{eq} level is adjusted for distance and percentage of usage.

34 Modeled noise reduction based on a 16-foot hightall K-rail mounted temporary noise barrier adjacent to Redwood Day School and a 6-foot high acoustical panel attached to existing fencing for all other perimeter areas (except for the Southern Residences, where the acoustical panels are not effective) is applied with Mitigation Measure NOI-1. Mitigated values are reported at the 2nd story for Redwood Day School because the resultant noise reduction at the school will depend on the height of the receptor.

45 Noise exceeding 65-dBA for more than 10-days near residences is considered exceeding the noise ordinance. For the Central Reservoir Recreation Area, a 70-dBA standard applies. MM= Mitigation Measure.

56 Southern Residences include the Oakland Heights Nursing and Rehabilitation facility and Residences near East 29th Street/25th Avenue.

See Figure 3.10-1 for noise measurement locations. L_{eq} represents the hourly constant sound level.

SOURCE: ESA, 2019

Mitigation Measure NOI-1 includes installation of a 16-foot tall K-rail mounted temporary noise barrier adjacent to Redwood Day School as shown ~~o~~in revised Figure 3.10-3 and- fence mounted (acoustical panels) temporary noise barriers along the remaining perimeter fencing, with the exception of the northern boundary along I-580, which are~~is~~ the only feasible ~~locations for a~~ noise barriers as previously described. Mitigated noise levels are presented in Table 10.2-10. Reduction in noise levels from Mitigation Measure NOI-1 were estimated based on the CadnaA model for Redwood Day School and based on two-dimensional modeling for the other receptors. Remaining areas where perimeter fencing would be supplemented with acoustical panels were conservatively assumed to experience a 5-dBA reduction. Even after considering EBMUD standard practices and procedures which includes a range of noise control measures and after incorporation of Mitigation Measure NOI-1 which includes a temporary noise barrier adjacent to the Redwood Day School and fence mounted (acoustical panels) temporary noise barriers along the remaining perimeter fencing, with the exception of the northern boundary along I-580, noise from site restoration activities would exceed the ordinance levels for all sensitive receptors adjacent to the Project site.

Therefore, noise increases associated with site restoration activities are considered to be significant and unavoidable because, after implementation of feasible mitigation, noise levels would still exceed the 65-dBA threshold at the property line daytime (7:00 a.m. to 7:00 p.m.) established by Section 17.120 of the Oakland Planning Code for residential receptors and the 70-dBA threshold applicable to the Central Reservoir recreation area. The threshold would be exceeded intermittently, when restoration activities are closest to receptors. Overall, site restoration activities would take place over a period of approximately 100 work days. Based on the duration and location of construction activities, including site restoration, as construction progresses around the perimeter of the reservoir, no location (or receptor) would experience noise levels in excess of ordinance levels for more than a total of about ~~30~~ 10 work days over the entire 6-year construction period, including all phases of construction.

Truck Traffic Noise Increases on Local Roadways

Truck noise levels depend on vehicle speed, load, terrain, and other factors. The effects of construction-related truck traffic would depend on the level of background noise already occurring at a receptor site. In quiet environments or during quieter times of the day, truck noise is mainly a single-event disturbance. Although the hourly average noise level associated with short, single events is not high, individual noise peaks of 75- to 80-dBA at 50-feet are common during a truck passage.[8] However, in noisy environments or during less noise-sensitive daytime hours (7:00 a.m. to 7:00 p.m.), truck noise is perceived as part of the total noise environment rather than as an individual disturbance. Therefore, noise levels associated with hourly haul truck volumes were assessed (rather than a single passing truck).

As indicated in Table 2-4 in Chapter 2, *Project Description*, truck and worker vehicle volumes would vary with each construction phase. To assess the Project's maximum

[8] California Vehicle Code (Section 27204) limits noise from trucks to 80-dBA (models after 1987).

traffic noise impact, the maximum hourly truck and worker vehicle trips were assigned to two primary routes, as indicated in Figures 3.12-2 and 3.12-3 of Section 3.12, Transportation: (1) 23rd Avenue to the east Project site entrance (both directions); and (2) Fruitvale Avenue to East 27th Street to 25th Avenue (both directions). Consistent with the Transportation analysis on Page 3.12-15, half of the material truck trips were assumed to travel from north of the Project site, and the remaining half of the hauling truck trips were assumed to travel from south of the Project site. By assigning all construction-related traffic equally to each street along these routes, the maximum noise increase that could occur on any neighborhood street during the demolition phase of the Project was evaluated, which is the phase that would generate the greatest number of truck trips.

The greatest number of truck trips would occur during the demolition phase, when a projected maximum of 197 truck trips per day would occur over an approximately 30-day period. Assigning these trips equally along Fruitvale Avenue and 23rd Avenue results in a total of approximately 99 trips per 12-hour workday along each route, or about 9 truck trips per hour along each route. Additionally, while worker arrivals and departures would actually be divided by allocation of work shifts, it was conservatively assumed that half of all project construction workers would commute in passenger vehicles or light duty trucks during the analyzed hour along the same routes. Using the FHWA Traffic Noise Model, the addition of these haul trucks and worker trips would contribute an estimated 57-dBA to the hourly L_{eq} along each of these roadways.

Table 3.10-16 presents estimated maximum hourly traffic noise increases along access routes by adding the maximum hourly projected Project-related traffic increases to monitored daytime (7:00 a.m. to 7:00 p.m.) noise levels along the truck route. Noise measurements indicate that existing daytime ambient noise levels in the Project vicinity when hauling would occur range from 58- to 65-dBA (L_{eq}; see Table 3.10-3 above). The largest noise increase would occur along 25th Avenue, which has the lowest existing daytime volumes. However, this increase is below the 5-dBA threshold used by the City of Oakland to assess traffic noise impacts. Therefore, the noise increases along roadways from haul trucks would be less than significant with respect to the potential for resulting in substantial temporary noise increases.

TABLE 10.2-11
PEAK-HOUR TRAFFIC NOISE LEVELS IN THE PROJECT VICINITY

Roadway Segment[b]	dBA, hourly L_{eq}			
	Existing Monitored Daytime Noise Level (7:00 a.m. to 7:00 p.m.)	Contribution of Haul Trucks	Resultant Noise Level with Haul Trucks	Difference between Existing and Resultant Noise Level[a]
25th Avenue north of East 27th Street	57.5	57.0	60.3	2.8
23rd Avenue south of East 27th Street	63.7	57.0	64.5	0.8
Fruitvale Avenue south of East 27th Street	62.0	57.0	63.2	1.2
Fruitvale Avenue south of Foothill Boulevard	64.8	57.0	65.5	0.7
23rd Avenue south of Foothill Boulevard	63.5	57.0	64.4	0.9

NOTES:

[a] Considered significant if the incremental increase in noise from traffic is greater than the existing ambient (modeled) noise level by 5-dBA L_{eq}, per City of Oakland CEQA Thresholds/Criteria of Significance Guidelines.

[b] Road center to receptor distance is 32-feet for all roadway segments. Noise levels were determined using the FHWA Traffic Noise Model.

SOURCE: ESA, 2018

Operation

The Project would include the replacement of an existing open-cut reservoir with three concrete tanks, which would not generate a new source of ambient noise. Maintenance and repair activities would occur as needed or as part of routine facility monitoring in accordance with standard inspection schedules, and the frequency of monitoring or maintenance activities would not change from current conditions. The Project would not result in any permanent surface operations that would introduce new sources of noise or vibration. Therefore, there would be no impact associated with Project operations resulting in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Significance Determination Before Mitigation

Significant. Because noise levels associated with demolition, substructure construction, tank and valve structure construction, and site restoration would exceed the following City of Oakland Noise Ordinance standards:

- Daytime (7:00 a.m. to 7:00 p.m.) standard of 65-dBA applicable to adjacent residential and school uses;
- Daytime (7:00 a.m. to 7:00 p.m.) standard of 70-dBA applicable to the Central Reservoir Recreation Area; ~~and~~
- Evening (7:00 p.m. to 10:00 p.m.) standard of 60-dBA applicable to adjacent residential uses; and
- Nighttime (10:00 p.m. to 7:00 a.m.) standard of existing ambient noise levels.

- ~~Evening and nighttime (7:00 p.m. to 7:00 a.m.) standard of existing ambient noise levels.~~

Noise impacts associated with those phases of construction would be potentially significant and would therefore require mitigation.

Mitigation Measures

Mitigation Measure NOI-1: Noise Control Measures

EBMUD shall erect a 16-foot tall K-rail mounted temporary noise barrier along EBMUD's property adjacent to the Redwood Day School for the entire construction duration. The noise barrier will be Sound Transmission Class (STC) rated and specific to sound attenuation applications. There may be some periods of construction when the noise barrier may be temporarily moved or dismantled to accommodate the Project construction area. EBMUD will schedule construction activities outside of normal school hours when it is feasible to do so if heavy construction equipment, including but not limited to impact equipment, is operated within 100 feet[9] of the closest classroom or if the noise barrier needs to be temporarily removed to accommodate construction.

Additionally, noise barriers consisting of 6-foot-high acoustical paneling will be attached to the fencing along the western, southern and eastern site perimeter, except in areas where the 16-foot tall K-rail mounted temporary noise barrier is used along the Redwood Day School boundary as shown on revised Figure 3.10-3. No fence mounted noise barriers would be used along the northern site boundary between the site and I-580.

Mitigation Measure NOI-2: Off-site Accommodations for Affected Nighttime Receptors

At least ten (10) days in advance, EBMUD will notify residents of the Southern Residences that could be affected by nighttime (10:00 p.m. to 7:00 a.m.) pipeline connection construction near the 25th Avenue/East 29th Street intersection. Residences within 500-feet of the pipeline connection construction may request alternative lodging for the night(s) of the potential nighttime construction from EBMUD; alternative lodging will consist of a standard room at a hotel located within 5 miles of the affected residence or as close as feasible. Alternative lodging will be provided and approved by EBMUD the day before the known nighttime construction occurs, or sooner, based upon the types of construction activities that may occur during the nighttime hours (10:00 p.m. to 7:00 a.m.). This measure would only be implemented if nighttime construction occurs.

Significance Determination after Mitigation

[9] At 100-feet or more, noise levels during the nosiest construction phase (demolition) are attenuated to approximately 65 dBA or less relative to the nearest classroom.

Significant and unavoidable for daytime (7:00 a.m. to 7:00 p.m.) site preparation and demolition, tank and valve structure construction activities (RCS construction and evening and nighttime [7:00 p.m. to 7:00 a.m.] pipeline connection work), and site restoration phases of reservoir construction. Mitigation Measure NOI-1 would reduce construction noise to less-than-significant levels for all but a few construction activities. Over the entire 6-year construction duration, daytime construction operations are estimated to exceed the 65-dBA and 70-dBA long-term construction noise standards of the City of Oakland's noise ordinance applicable to residences and a school, and to the Central Reservoir Recreation Area, respectively, for a total of less than about 10 work~~30~~ days for the closest residences along Ardley Avenue, 23rd Avenue, Southern Residences, the Central Reservoir Recreation Area, and the Redwood Day School.

While the temporary noise barrier required through implementation of Mitigation Measure NOI-1 has the potential to substantially reduce noise levels to a less-than-significant level, it cannot be determined conclusively that a reduction sufficient to reduce daytime noise levels to the applicable 65-dBA and 70-dBA standards at all times is achievable; this daytime impact is conservatively identified as significant and unavoidable. The potential also exists for evening and nighttime work to result in noise levels exceeding nighttime standards for the two consecutive nights of pipeline connection activity. Consequently, noise impacts from daytime and nighttime construction work would be significant and unavoidable.

10.2.4 Chapter 5, Other CEQA Considerations

Pages 5-1 through 5-4 of Chapter 5, *Other CEQA Considerations*, have been revised as follows in response to comments for additional information regarding noise barriers and other construction noise control measures:

Impact NOI-1: Result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. (Criterion 1)

The City of Oakland Noise Ordinance imposes differing noise level limits depending on the time of day when construction occurs as well as the overall duration of construction, which are also considered in this analysis. The ordinance has separate standards for short-term construction activity, defined as less than 10-days, and long-term construction activity, defined as more than 10-days. Given that the Project construction would occur over multiple years, the long-term standards are applied in this analysis.

The City of Oakland Noise Ordinance establishes distinct noise level limits for construction activity occurring between the less noise-sensitive daytime hours of 7:00 a.m. and 7:00 p.m. Additionally, the ordinance establishes that construction noise during nighttime hours shall not exceed the nighttime standards established for

stationary sources, as summarized in Section 3.10, Table 3.10-5.~~.~~ However, these standards recognize a different increment of nighttime hours for the period from 7:00 p.m. to 10:00 p.m. (evening hours) and from 10:00 p.m. to 7:00 a.m. (nighttime hours). ~~However, these standards recognize a different increment of nighttime hours (10:00 p.m. to 7:00 a.m.).~~ Consequently, during the evening and nighttime hours established for construction (7:00 p.m. to 7:00 a.m.), two separate standards would be applicable. Table 3.10-7 in Section 3.10 summarizes the construction noise standards for daytime and the two nighttime periods.

Even with the incorporation of EBMUD's standard practices and procedures for noise~~,~~ which include a range of noise control measures, as described in Section 3.10, site preparation and demolition and site restoration related noise impacts from the Project would still be above the ordinance noise limit for the closest receptors. Mitigated values in Section 3.10, account for implementation of Mitigation Measure NOI-1~~consider a~~ which includes a noise reduction from a 16-foot tall K-rail mounted temporary sound barrier along the eastern project boundary with Redwood Day School and fence mounted (acoustical panels) temporary noise barriers along the remaining perimeter fencing, with the exception of the northern boundary along I-580 as shown on revised Figure 3.10-3. ~~While a barrier was considered to shield noise at all sensitive receptors around the Project site, there is insufficient space along Ardley Avenue and at the East 29th Street/25th Avenue intersection because of the proximity of the property line to the Project construction area. A noise barrier on the border with the Southern Residences and the 23rd Avenue Residences would be ineffective because the ground elevation outside of the Project construction area where the noise barrier can be located is too low relative to construction and construction noise would travel over the 16-foot tall sound barrier~~. Even after considering EBMUD standard practices and procedures~~, which include a range of noise control measures,~~ and after incorporation of Mitigation Measure NOI-1~~, which includes a temporary noise barrier adjacent to the Redwood Day School~~, noise from site preparation and demolition and site restoration activities would exceed the ordinance levels for all of the closest receptors. Therefore, noise increases associated with site preparation and demolition and site restoration activities are considered to be significant and unavoidable because, after implementation of feasible mitigation, noise levels would still exceed the daytime (7:00 a.m. to 7:00 p.m.) thresholds established by Section 17.120 of the Oakland Planning Code. Noise would exceed the ordinance levels intermittently, when site preparation and demolition and site restoration activities are closest to receptors. Based on the duration and location of all construction activities, including site preparation and demolition and site restoration, as they progress around the perimeter of the reservoir, no location (or receptor) would experience noise levels in excess of ordinance levels for more than a total of about 1~~3~~0 work days over the entire 6-year construction period.

Additionally, there would be a significant construction noise impact at Southern Residences and the Central Reservoir Recreation Area during the Tank and Valve Structure Construction Phase as a result of ~~affected by~~ the RCS construction activities and the pipeline connection activities. Even with the incorporation of EBMUD's standard practices and procedures for noise control measures, the combined operation

of all equipment would exceed the daytime (7:00 a.m. to 7:00 p.m.) 65-dBA noise standard applicable to~~for~~ the Southern Residences and the 70-dBA noise standard applicable to ~~for~~ the Central Reservoir Recreation Area, and the evening (7:00 p.m. to 10:00 p.m.) 60-dBA long-term construction noise standard~~s~~ at both the Southern Residences and the Central Reservoir Recreation Area and the impact associated with daytime and evening RCS construction and pipeline connection activities would be significant and unavoidable. Additionally, nighttime pipeline connection activities would be subject to the City's L_{33} standard, which for this area was monitored to be 46-dBA. The nighttime work would exceed 46-dBA and represent a short-term significant noise impact over two consecutive nights. Mitigation Measure NOI-2 states that EBMUD will offer residents within 500-feet[10] of the pipeline connection construction site alternative lodging during this 2-day period. Notwithstanding this mitigation, this 2-day nighttime noise impact is also identified as significant and unavoidable because the noise ordinance would still be exceeded.

Significance Determination Before Mitigation

Significant. Because noise levels associated with site preparation and demolition, substructure construction, tank and valve structure construction, and site restoration would intermittently exceed the following City of Oakland Noise Ordinance standards:

- Daytime (7:00 a.m. to 7:00 p.m.) standard of 65-dBA applicable to adjacent residential and school uses;
- Daytime (7:00 a.m. to 7:00 p.m.) standard of 70-dBA applicable to the Central Reservoir Recreation Area; ~~and~~
- Evening (7:00 p.m. to 10:00 p.m.) standard of 60-dBA applicable to adjacent residential uses and the Central Reservoir Recreation Area; and
- Nighttime (10:00 p.m. to 7:00 a.m.) standard of existing ambient noise levels at adjacent residential uses.
- ~~Evening and nighttime (7:00 p.m. to 7:00 a.m.) standard of existing ambient noise levels.~~

Noise impacts associated with those phases of construction would be potentially significant and would therefore require mitigation.

[10] The 500-foot distance applies only to residences within 500 feet to construction activities, and is determined by applying spherical spreading losses (6 dBA per doubling of distance) to a noise level of 80 dBA (Leq) at 50 feet, resulting in a noise level of 60 dBA (Leq) at 500 feet. While an exterior noise level of 60 dBA (Leq) would still exceed the 46-dBA nighttime ordinance threshold, the exterior shell of a house can reduce exterior noise levels by 25 dBA with the windows closed, which would result in an interior level of 35 dBA (Leq) with windows closed. Based on available sleep criteria data, an interior nighttime level of 35 dBA is considered acceptable (U.S. EPA, 1974). The requirement that windows must be closed to achieve this acceptable level is assumed to be feasible since exposure would only be for two nights.

Mitigation Measure NOI-1: Noise Control Measures

EBMUD shall erect a 16-foot tall K-rail mounted temporary noise barrier along EBMUD's property adjacent to the Redwood Day School for the entire construction duration. The noise barrier will be Sound Transmission Class (STC) rated and specific to sound attenuation applications. There may be some periods of construction when the noise barrier may be temporarily moved or dismantled to accommodate the Project construction area. EBMUD will schedule construction activities outside of normal school hours when it is feasible to do so if heavy construction equipment, including but not limited to impact equipment, is operated within 100 feet of the closest classroom or if the noise barrier needs to be temporarily removed to accommodate construction.

Additionally, noise barriers consisting of 6-foot-high acoustical paneling will be attached to the fencing along the western, southern and eastern site perimeter, except in areas where the 16-foot tall K-rail mounted temporary noise barrier is used along the Redwood Day School boundary as shown on revised Figure 3.10-3. No fence mounted noise barriers would be used along the northern site boundary between the site and I-580.

Mitigation Measure NOI-2: Off-site Accommodations for Affected Nighttime Receptors

At least ten (10) days in advance, EBMUD will notify residents of the Southern Residences that could be affected by nighttime (10:00 p.m. to 7:00 a.m.) pipeline connection construction near the 25th Avenue/East 29th Street intersection. Residences within 500-feet of the pipeline connection construction may request alternative lodging for the night(s) of the potential nighttime construction from EBMUD; alternative lodging will consist of a standard room at a hotel located within 5 miles of the affected residence or as close as feasible. Alternative lodging will be provided and approved by EBMUD the day before the known nighttime construction occurs, or sooner, based upon the types of construction activities that may occur during the nighttime hours (10:00 p.m. to 7:00 a.m.). This measure would only be implemented if nighttime construction occurs.

Significance Determination after Mitigation

The noise impact described above would be significant and unavoidable for site preparation and demolition, tank and valve structure construction activities (RCS construction and evening and nighttime ~~nighttime [7:00 p.m. to 7:00 a.m.]~~ pipeline connection work), and site restoration phases of reservoir construction. Mitigation Measures NOI-1 and NOI-2 would reduce noise impacts from CDSM and daytime tank and valve structure construction activities to less than significant levels. However, there may still be times when operations associated with site preparation and demolition as well as site restoration activities would exceed the 65-dBA long-term daytime construction noise standard for residential uses of the City of Oakland's noise ordinance as well as the 70-dBA long-term daytime construction noise standard

for the Central Reservoir Recreation Area. The potential also exists for ~~nighttime~~ work to result in noise levels exceeding evening and nighttime standards for ~~the~~ up to two consecutive nights of pipeline connection activity. Consequently, noise from the site preparation and demolition phase, tank and valve structure construction activities (RCS construction and evening and nighttime pipeline connection work), and site restoration phase would be significant and unavoidable. However, no location (or receptor) would experience noise levels in excess of ordinance levels for more than a total of about 10~~30~~ days over the entire 6-year construction period, including all phases of construction.

CHAPTER 11

Final Practices and Procedures Monitoring and Reporting Plan and Mitigation Monitoring and Reporting Program

11.1 CEQA Requirements

CEQA requires the adoption of feasible mitigation measures to reduce the severity and magnitude of potentially significant environmental impacts associated with project development. Section 20181.6 of the California Public Resources Code requires a CEQA lead or responsible agency that approves or carries out a project where an EIR has identified measures to mitigate significant environmental effects to "adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation."

CEQA Guidelines Section 15097 (a) states that "In order to assure the mitigation measures and project revisions identified in the EIR or negative declaration are implemented, the public agency shall adopt a program for monitoring or reporting on the revision which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects."

Draft EIR Appendix E included the Draft EBMUD Practices and Procedures Monitoring and Reporting Plan (PPMRP), as well as the Draft Mitigation Monitoring and Reporting Program (MMRP) for the Project. The PPMRP and MMRP have been finalized and reflect changes made as a result of comments on the Draft EIR.

11.2 PPMRP and MMRP Matrix

The Final PPMRP and MMRP are presented in Tables 11-1 and 11-2, which list all impacts identified in the EIR as significant or potentially significant along with the proposed mitigation measures (Table 11-2) and EBMUD's Practices and Procedures (Table 11-1) that are required to reduce impacts to less than significant levels. The impacts are briefly summarized in the table.

For each mitigation measure or EBMUD Practice and Procedure, the following information is provided:

- **Impact Area.** This column indicates impact areas that could be considered significant.

- **Mitigation Measure.** This column contains the full text of the mitigation measures, excerpt from the relevant standard specification, or identifies the applicable EBMUD design standard.

- **EBMUD Practices and Procedures/Standard Specifications.** This column contains excerpts from the relevant standard specification or identifies the applicable EBMUD design standard.

- **Responsible for Implementation.** This column provides additional information on how the mitigation measures will be implemented to help clarify how compliance can be monitored.

- **Responsible for Monitoring and/or Enforcement.** This column contains an assignment of responsibility for the monitoring and reporting tasks.

- **Timing of Implementation.** This column indicates when the mitigation measure would be applied.

TABLE 11-1
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Aesthetics				
Impact AES-3: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings (Public views are those that are experienced from publicly accessible vantage points), or in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.1, Summary* B. Site Activities 1. No debris including, but not limited to, demolition material, treated wood waste, stockpile leachate, soil, silt, sand, bark, slash, sawdust, asphalt, rubbish, paint, oil, cement, concrete or washings thereof, oil or petroleum products, or other organic or earthen materials from construction activities shall be allowed to enter into storm drains or surface waters or be placed where it may be washed by rainfall or runoff outside the construction limits. When operations are completed, excess materials or debris shall be removed from the work area as specified in the Construction and Demolition Waste Disposal Plan. 2. Excess material shall be disposed of in locations approved by the Engineer consistent with all applicable legal requirements and disposal facility permits. 3. Do not create a nuisance or pollution as defined in the California Water Code. Do not cause a violation of any applicable water quality standards for receiving waters adopted by the Regional Board or the State Water Resources Control Board, as required by the Clean Water Act. 4. Clean up all spills and immediately notify the Engineer in the event of a spill. 5. Stationary equipment such as motors, pumps, and generators, shall be equipped with drip pans. 6. Divert or otherwise control surface water and waters flowing from existing projects, structures, or surrounding areas from coming onto the work and staging areas. The method of diversions or control shall be adequate to ensure the safety of stored materials and of personnel using these areas. Following completion of Work, ditches, dikes, or other ground alterations made by the Contractor shall be removed and the ground surfaces shall be returned to their former condition, or as near as practicable, in the Engineer's opinion. 7. Maintain construction sites to ensure that drainage from these sites will minimize erosion of stockpiled or stored materials and the adjacent native soil material. 8. Furnish all labor, equipment, and means required and shall carry out effective measures wherever, and as often as necessary, to prevent Contractor's operations from causing visible dust emissions to leave the work areas. These measures shall include, but are not limited to, providing additional watering equipment, reducing vehicle speeds on haul roads, restricting traffic on haul roads, covering haul vehicles, and applying a dust palliative to well-traveled haul roads. The Contractor shall provide the specifications of the dust palliative for Engineer approval prior to use. The Contractor shall be responsible for damage resulting from dust originating from its operations. The dust abatement measures shall be continued for the duration of the Contract. Water the site in the morning and evening, and as often as necessary, and clean vehicles leaving the site as necessary to prevent the transportation of dust and dirt onto public roads. Dust control involving water shall be done in such a manner as to minimize waste and runoff from the site.	EBMUD and EBMUD's Construction Contractor	EBMUD	Prior to and During Construction

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Aesthetics (cont.)				
Impact AES-3 (cont.)	9. Construction staging areas shall be graded, or otherwise protected with Best Management Practices (BMPs), to contain surface runoff so that contaminants such as oil, grease, and fuel products do not drain towards receiving waters including wetlands, drainages, and creeks. 10. All construction equipment shall be properly serviced and maintained in good operating condition to reduce emissions. Contractor shall make copies of equipment service logs available upon request. 11. Any chemical or hazardous material used in the performance of the Work shall be handled, stored, applied, and disposed of in a manner consistent with all applicable federal, state, and local laws and regulations. 12. Contaminated materials excavated and/or removed from the construction area shall be disposed of in a manner consistent with all applicable local, state, and federal laws and regulations. *Section 3.7, Protection of Native and Non-Native Protected Trees* A. Tree Protection 1. Locations of trees to be removed and protected are shown in the construction drawings. Pruning and trimming shall be completed by the Contractor and approved by the Engineer. Pruning shall adhere to the Tree Pruning Guidelines of the International Society of Arboriculture. 2. Erect exclusion fencing five feet outside of the drip lines of trees to be protected. Erect and maintain a temporary minimum 3-foot high orange plastic mesh exclusion fence at the locations as shown in the drawings. The fence posts shall be six-foot minimum length steel shapes, installed at 10-feet minimum on center, and be driven into the ground. The Contractor shall be prohibited from entering or disturbing the protected area within the fence except as directed by the Engineer. Exclusion fencing shall remain in place until construction is completed and the Engineer approves its removal. 3. No grading, construction, demolition, trenching for irrigation, planting or other work, except as specified herein, shall occur within the tree protection zone established by the exclusion fencing installed shown in the drawings. In addition, no excess soil, chemicals, debris, equipment or other materials shall be dumped or stored within the tree protection zone. 4. In areas that are within the tree drip line and outside the tree protection zone that are to be traveled over by vehicles and equipment, the areas shall be covered with a protective mat composed of a 12-inch thickness of wood chips or gravel and covered by a minimum ¾-inch-thick steel traffic plate. The protective mat shall remain in place until construction is completed and the Engineer approves its removal. 5. Tree roots exposed during trench excavation shall be pruned cleanly at the edge of the excavation and treated to the satisfaction of a certified arborist provided by EBMUD. 6. Any tree injured during construction shall be evaluated as soon as possible by a certified arborist provided by EBMUD, and replaced as deemed necessary by the certified arborist.			

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Aesthetics (cont.)				
Impact AES-3 (cont.)	**EBMUD's Standard Construction Specification 01 74 05, Cleaning** *Section 1.1, Description* A. Work included: Perform the work necessary for cleaning during construction and final cleaning on completion of the work. B. Cleaning for specific products or work is specified in the individual specification sections. *Section 3.1, General* A. At all times maintain areas covered by the Contract and public properties free from accumulations of waste, debris, and rubbish caused by construction operations. B. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws. Do not burn or bury rubbish and waste materials on project site. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains. Do not dispose of wastes into streams or waterways. C. Use only cleaning materials recommended by manufacturer of surface to be cleaned. D. Use cleaning materials only on surfaces recommended by cleaning material manufacturers. *Section 3.2, Cleaning During Construction* A. During execution of work, clean site and public properties and legally dispose of waste materials, debris, and rubbish to assure that buildings, grounds, and public properties are maintained free from accumulations of waste materials and rubbish. All soil and any other material tracked onto the streets by the Contractor shall be cleaned immediately. The Contractor shall comply with all rules and regulations as applicable for its cleaning method. B. Dispose of all refuse off District property as often as necessary so that at no time shall there be any unsightly or unsafe accumulation of rubbish. 1. Pine needles, leaves, sticks, and other vegetative debris on the ground shall be removed if they are in the way of construction, present a safety hazard, or present a fire hazard. Otherwise they shall be left in place during construction and final cleaning C. Wet down dry materials and rubbish to lay dust and prevent blowing dust. D. Provide approved containers for collection and disposal of waste materials, debris, and rubbish. E. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from exposed and semi exposed surfaces. F. Repair, patch, and touch up marred surfaces to specified finish to match adjacent surfaces. G. Vacuum clean all interior spaces, including inside cabinets. Broom clean paved surfaces; rake clean other surfaces of grounds. H. Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.			

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Aesthetics (cont.)				
Impact AES-3 (cont.)	*Section 3.3, Final Cleaning* A. At the completion of work on all portions of the contract and immediately prior to final inspection, cleaning of the entire project will be accomplished according to the following provisions: 1. Thoroughly clean, sweep, wash, and polish all work and equipment, including finishes. The cleaning shall leave the structures and site in a complete and finished condition to the satisfaction of the Engineer. 2. Should the Contractor not remove rubbish or debris or not clean buildings and site as specified above, the District reserves the right to have the cleaning done at the expense of the Contractor. B. Employ professional cleaners for final cleaning. C. In preparation for contract completion, conduct final inspection of sight exposed interior and exterior surfaces, and of concealed spaces. D. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from sight exposed interior and exterior finished surfaces; polish surfaces so designated to shine finish. E. Repair, patch, and touch up marred surfaces to specified finish, to match adjacent surfaces. F. Broom clean paved surfaces; rake clean other surfaces of grounds. G. Replace air handling filters if units were operated during construction. H. Clean ducts, blowers, and coils, if air handling units were operated without filters during construction. I. Clean luminaires in accordance with manufacturer's recommendations and relamp. Clean all light fixtures. J. Clean debris from roofs, gutters, and downspouts. K. Remove from District property all temporary structures and all material, equipment, and appurtenances not required as a part of, or appurtenant to, the completed work. L. Leave watercourses, storm drains, inlets, and ditches open and clear.			

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Air Quality				
Impact AIR-1: Conflict with or obstruct implementation of the applicable air quality plan.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.3.E Dust Control and Monitoring Plan* 1. Submit a plan detailing the means and methods for controlling and monitoring dust generated by demolition and other work on the site for the Engineer's acceptance prior to any work at the jobsite. The plan shall comply with all applicable regulations including but not limited to the Bay Area Air Quality Management District (BAAQMD) visible emissions regulation and Public Nuisance Rule. The plan shall include items such as mitigation measures to control fugitive dust emissions generated by construction activities. The Plan shall outline best management practices for preventing dust emissions, provide guidelines for training of employees, and procedures to be used during operations and maintenance activities. The plan shall also include measures for the control of paint overspray generated during the painting of exterior surfaces. The plan shall detail the equipment and methods used to monitor compliance with the plan. The handling and disposal of water used in compliance with the Dust Control Plan shall be addressed in the Water Control and Disposal Plan. 2. Containment, as described in Article 3.3, shall be utilized during any abrasive blasting of the exterior of structures. *Section 3.3. Dust Control and Monitoring* B. Dust Control 1. Contractor shall implement all necessary dust control measures, including but not limited to the following: a. All exposed surfaces with the potential of dust-generating shall be watered at least twice daily, or be covered with coarse rock, or as directed by the Engineer to reduce the potential for airborne dust from leaving the site. b. The simultaneous occurrence of more than two ground disturbing construction phases on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time, as appropriate. c. Cover all haul trucks entering/leaving the site and trim their loads as necessary. d. Using wet power vacuum street sweepers to: 1) Sweep all paved access road, parking areas and staging areas at the construction site daily or as often as necessary. 2) Sweep public roads adjacent to the site at least twice daily or as often as necessary. e. The use of dry power sweeping is prohibited. f. All trucks and equipment, including their tires, shall be washed off prior to leaving the site. g. Gravel or apply non-toxic soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.	EBMUD and EBMUD's Construction Contractor	EBMUD	During Construction

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Air Quality (cont.)				
Impact AIR-1 (cont.)	h. Water and/or cover soil stockpiles daily. i. Site accesses to a distance of 100 feet from the paved road shall be treated with 12-inches layer of compacted coarse rock. j. Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent. k. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. l. Building pads shall be laid as soon as possible after grading. m. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established. n. Wind breaks (e.g., fences) shall be installed on the windward sides(s) of actively disturbed areas of construction. Wind breaks should have a maximum 50 percent air porosity. o. All vehicle speeds shall be limited to fifteen (15) mph or less on the construction site and any adjacent unpaved roads. C. Dust Monitoring During Demolition and Construction 1. Provide air monitoring per the Dust Control and Monitoring Plan along the perimeter of the job site. A minimum of 4 stations, one on each side of the District property, shall be established, capable of continuous measurement of total particulate concentration when any dust generating activity is occurring. a. Ringelmann No. 1 Limitation: Contractor shall not emit from any source for a period or periods aggregating more than three minutes in any hour, a visible emission which is as dark or darker than No. 1 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree. b. Opacity Limitation: Contractor shall not emit from any source for a period or periods aggregating more than three minutes in an hour an emission equal to or greater than 20% opacity as perceived by an opacity sensing device, where such device is required by Air Quality Management District regulations. c. All environmental and personal air sampling equipment shall be in conformance with the Association of Industrial Hygiene and National Institute of Safety and Health (NIOSH) standards. d. All analysis shall be completed by a California Department of Health Services certified laboratory for the specific parameters of interest. e. The Contractor shall provide to the Engineer, within 72 hours of sampling all test results. D. The dust control system shall comply with the Dust Control and Monitoring Plan, the requirements of this section, and any applicable laws and regulations.			

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Air Quality (cont.)				
Impact AIR-1 (cont.)	*Section 3.4. Emissions Control* A. Air Quality and Emissions Control 1. The Contractor shall ensure that line power is used instead of diesel generators at all construction sites where line power is available. 2. The Contractor shall ensure that for operation of any stationary, compression-ignition engines as part of construction, comply with Section 93115, Title 17, California Code of Regulations, Airborne Toxic Control Measure for Stationary Compression Ignition Engines, which specifies fuel and fuel additive requirements as well as emission standards. 3. Fixed temporary sources of air emissions (such as portable pumps, compressors, generators, etc.) shall be electrically powered unless the Contractor submits documentation and receives approval from the Engineer that the use of such equipment is not practical, feasible, or available. All portable engines and equipment units used as part of construction shall be properly registered with the California Air Resources Board or otherwise permitted by the appropriate local air district, as required. 4. Contractor shall implement standard air emissions controls such as: a. Minimize the use of diesel generators where possible. b. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes as required by the California Airborne Toxics Control Measure (ATCM) Title 13, Section 2485 of California Code of Regulations. Clear signage shall be provided for construction workers at all access points. c. Follow applicable regulations for fuel, fuel additives, and emission standards for stationary, diesel-fueled engines. d. Locate generators at least 100 feet away from adjacent homes and ball fields. e. Perform regular low-emission tune-ups on all construction equipment, particularly haul trucks and earthwork equipment. 5. Contractor shall implement the following measures to reduce greenhouse gas emissions from fuel combustion: a. On road and off-road vehicle tire pressures shall be maintained to manufacturer specifications. Tires shall be checked and re-inflated at regular intervals. b. Construction equipment engines shall be maintained to manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. c. All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of Oxide of Nitrogen (NOx) and Particulate Matter (PM).			

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Air Quality (cont.)				
Impact AIR-1 (cont.)	d. Demolition debris shall be recycled for reuse to the extent feasible. See the Construction and Demolition Waste Disposal Plan paragraphs above for requirements on wood treated with preservatives. B. Architectural Coatings 1. Architectural coatings used shall comply with appropriate Volatile Organic Compound limits as established in the Bay Area Air Quality Management District's Regulation 8, Rule 3 and/or the San Joaquin Valley Air Pollution Control District's Regulation IV, Rule 4601, and any amendments thereto. **EBMUD's Standard Construction Specification 02 82 13, Asbestos Control Activities** *Section 1.1, Compliance and Intent* A. Furnish all labor, materials, facilities, equipment, services, employee training and testing, permits, and agreements necessary to perform the lead removal in accordance with these specification and with the latest regulations from the U.S. Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), the Air Quality Management District with authority over the project, the Cal/EPA Department of Toxic Substance Control, the California Occupational Safety and Health Administration (Cal/OSHA), and other federal, state, county, and local agencies. Whenever there is a conflict or overlap of the above references, the most stringent provision is applicable. B. The Central Reservoir is known to contain asbestos materials. Notify the BAAQMD at (415) 749-4762 regarding the demolition of the Central Reservoir at least ten (10) work days prior to beginning demolition activities. *Section 1.5, Submittals (Pre-Job)* B. Plan of Action 1. Asbestos Abatement: a. Submit a detailed plan of the procedures proposed for use in complying with the regulations included in this specification. The plan shall include the location and layout of decontamination areas, the sequencing of asbestos work, the interface of trades involved in the performance of work, disposal plan including location of approved disposal site, and a detailed description of the methods to be employed to control pollution. Expand upon the use of portable HEPA ventilation system, method of removal to prohibit visible emissions in work area, and packaging of removed asbestos debris. Include asbestos abatement in the Construction and Demolition Waste Disposal Plan, in accordance with Section 01 35 44.			
Impact AIR-2: Expose sensitive receptors to substantial pollutant concentrations.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 3.4(A) Air Quality and Emissions Control* (Details as listed under Impact AIR-1)	EBMUD and EBMUD's Contractors	EBMUD	Prior to and During Construction

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Biological Resources				
Impact BIO-1: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the CDFW or USFWS.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.1(B), Site Activities* (Details as listed under Impact AES-3) *Section 1.3, Submittals* A. Storm Water Management 1. Construction General Permit a. The Contractor shall create a user account on the SWRCB's Storm Water Multi-Application & Report Tracking System (SMARTS). The Engineer will link the Contractor to the District's account as a Data Submitter. The Contractor shall prepare and upload to SMARTS Permit Registration Documents (PRDs), including, but not limited to, a Notice of Intent, a Site Specific Risk Assessment, a Site Map, and a Storm Water Pollution Prevention Plan (SWPPP) for the Engineer's review which meets the requirements of the SWRCB, for coverage under the General Construction Stormwater Permit (Order No. 2009-0009-DWQ) and amendments thereto. Upon acceptance by the Engineer, the Engineer will electronically certify and file the PRDs to gain permit coverage and the Contractor shall submit the registration and the subsequent annual fees as required by the SWRCB. b. The Contractor shall be responsible for complying with the requirements of the Construction General Permit. The Contractor's responsibilities include, but are not limited to, providing qualified professionals as described in the permit to prepare and certify all permit-required documents/submittals and to implement effective stormwater/non-stormwater management practices, and conducting inspections and monitoring as required by the permit. The Contractor shall, in compliance with the permit, prepare and upload to SMARTS all required documents, photos, data, and/or reports (including the Annual Reports) and ensure permit coverage termination upon construction completion by preparing a Notice of Termination on SMARTS. The Contractor shall inform the Engineer when documents/reports are available on SMARTS for Engineer certification and submittal. 2. Storm Water Pollution Prevention Plan a. Submit a Stormwater Pollution Prevention Plan that describes measures that shall be implemented to prevent the discharge of contaminated storm water runoff from the jobsite. Contaminants to be addressed include, but are not limited to, soil, sediment, concrete residue, pH less than 6.5 or greater than 8.5, and chlorine residual and all other contaminants known to exist at the jobsite location as described in Document 00 31 24 - Material Assessment Information. B. Water Control and Disposal Plan 1. The Contractor shall submit a detailed Water Control and Disposal Plan for the Engineer's acceptance prior to any work at the jobsite.	EBMUD, EBMUD's Biologist, and EBMUD's Construction Contractor	EBMUD	Prior to and During Construction

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Biological Resources (cont.)				
Impact BIO-1 (cont.)	a. Plan shall comply with all requirements of the Specification and applicable discharge permits. Table 1 summarizes discharge permits that may be applicable to District projects. b. Contractor shall maintain proper control of the discharge at the discharge point to prevent erosion, scouring of bank, nuisance, contamination, and excess sedimentation in the receiving waters. 2. Drinking Water System Discharges a. Plan shall include the estimated flow rate and volume of all proposed discharges to surface waters, including discharges to storm drains. All receiving waters shall be clearly identified. b. Contractor shall track all discharges directly to a surface water body or a storm drain system that drains to a surface water body. A record consisting of discharge locations and volumes shall be submitted to the Engineer prior to Contract Acceptance. c. A monitoring program is required for drinking water system discharges greater than 325,850 gallons in conformance with Attachment E, Monitoring and Reporting Program, of the General Drinking Water Discharges Permit, when the water will be discharged either directly into a surface water body or a storm drain system that drains to a surface water body. A record consisting of discharge locations, volumes and Water Quality (WQ) data shall be submitted to the Engineer. The Planned Discharge Tracking Form, attached to the end of this section, may be used to fulfill this requirement. All monitoring results shall be submitted to the Engineer prior to Contract Acceptance. 1. Contractor shall notify the Engineer, at least one week prior to the start of a planned discharge equal to or greater than 325,850 gallons, of the following: a) The discharge start date; b) The discharge location and the applicable receiving water; c) The flow rate and volume to be discharged; and d) The reason(s) for discharge. d. Contractor shall dechlorinate all drinking water system discharges to achieve a total chlorine residual concentration of < 0.1 mg/L measured with a handheld chlorine meter utilizing a US EPA approved method and provide effective erosion & sediment control to achieve a visual turbidity concentration of ≤ 100 NTU by implementing BMPs which meet the District minimum standards (see Figure 1 attached to the end of this section) or better. e. Instead of discharging to surface waters, where feasible, Contractor shall beneficially reuse water derived from drinking water systems as defined in the General Drinking Water Discharges Permit. Potential reuse strategies include, but are not limited to, landscape irrigation, agricultural irrigation, dust control, and discharge to stormwater capture basins or other groundwater recharge systems. Contractor shall do so without impacting property or the environment. Contractor shall provide a record of reuse location(s) and volume(s) and submit it to the Engineer prior to Contract Acceptance.			

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Biological Resources (cont.)				
Impact BIO-1 (cont.)	f. Contractor shall ensure that the pH level of any discharges shall not be depressed below 6.5, nor elevated above 8.5. If there is potential for discharges to be below 6.5 or above 8.5, Contractor shall employ pH adjustment best management practices to ensure discharges are within the range of 6.5 and 8.5. Contractor shall conduct onsite field measurements for pH per quality assurance and quality control (QA/QC) protocol that conform to U.S. EPA guidelines, or procedures approved by the American Water Works Association or other professional drinking water industry association. Contractor shall submit all monitoring results to the Engineer prior to Contract Acceptance. 3. Non-Stormwater Discharges a. Plan shall describe measures for containment, handling, treatment (as necessary), and disposal of discharges such as groundwater (if encountered), runoff of water used for dust control, stockpile leachate, tank heel water, wash water, sawcut slurry, test water and construction water or other liquid that has been in contact with any interior surfaces of District facilities. Contractor shall provide the Engineer with containment, handling, treatment and disposal designs and a sampling & analysis plan for approval before commencing the Work. Sampling and analysis shall be in conformance with Sections 1.3 (K) Analytical Test Results and 3.1 SAMPLING AND ANALYSIS. 4. Sanitary Sewer Discharges a. It is District policy to send superchlorinated discharges from pipeline disinfection to the sanitary sewer system. Plan shall include a sampling and analytical program for superchlorinated discharges in conformance with the Sanitary Sewer Discharge Permit. All monitoring results shall be submitted to the Engineer prior to the end of the Work. b. Obtain and provide to the Engineer documentation from the agency (e.g., wastewater treatment plant, local sewer owner) having jurisdiction, authorizing the Contractor to dispose of the liquid and describing the method of disposal. Discharges destined for the District's main wastewater treatment plant in Oakland can reference Special Discharge Permit (SDP) #50333261, issued to the District's Regulatory Compliance Office, when obtaining authorization from the pertinent local jurisdiction that owns the sewers to be used. Contractor shall, prior to the end of the Work, report to the Engineer the volumes of all discharges performed pursuant to the said SDP along with copies of any profile forms and/or correspondence between Contractor and disposal facility. *Section 3.6, Noise Control* (Details as listed under Impact NOI-1) *Section 3.8, Protection of Birds Protected under the Migratory Treaty Act and Roosting Bats* A. The District will conduct biological reconnaissance in advance of construction and will conduct biologic monitoring during construction as necessary. B. Protected Species 1. If protected species or suitable habitat for protected species is found during biological reconnaissance surveys:			

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Biological Resources (cont.)				
Impact BIO-1 (cont.)	a. Before beginning construction, all Contractor construction personnel are required to attend an environmental training program provided by the District of up to one-day for site supervisors, foreman and project managers, and up to 30-minutes for non-supervisory contractor personnel. The training program will be completed in person or by watching a video at a District-designated location, conducted by a qualified biologist provided by the District. The program will discuss all sensitive habitats and sensitive species that may occur within the project work limits, including the responsibilities of Contractor's construction personnel, applicable mitigation measures, and notification requirements. The Contractor is responsible for ensuring that all workers requiring training are identified to the District. Prior to accessing or performing construction work, all Contractor personnel shall: 1) Sign a wallet card provided by the Engineer verifying that all Contractor construction personnel have attended the appropriate level of training relative to their position; have read and understood the contents of the environmental training: and shall comply with all project environmental requirements. 2) Display an environmental training hard hat decal (provided by the District after completion of the training) at all times. b. Birds Protected under the Migratory Bird Treaty Act (MBTA): 1) It is unlawful to pursue, hunt, take, capture, or kill any migratory bird without a permit issued by the U.S. Department of the Interior. 2) If construction commences between February 1 and August 31, during the nesting season, the District will conduct a preconstruction survey for nesting birds within 7 days prior to construction to ensure that no nest will be disturbed during construction. 3) If active nests of migratory bird species (listed in the MBTA) are found within the project site, or in areas subject to disturbance from construction activities, an avoidance buffer to avoid nest disturbance shall be constructed. The buffer size will be determined by the District in consultation with California Department of Fish and Wildlife (CDFW) and is based on the nest location, topography, cover and species' tolerance to disturbance. 4) If an avoidance buffer is not achievable, a qualified biologist provided by the District will monitor the nest(s) to document that no take of the nest (nest failure) has occurred. Active nests shall not be taken or destroyed under the MBTA and, for raptors, under the CDFW Code. If it is determined that construction activity is resulting in nest disturbance, work should cease immediately and the Contractor shall notify the Engineer who will consult with the qualified biologist and appropriate regulatory agencies. 5) If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further action 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 avoidance buffer for active			

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Biological Resources (cont.)				
Impact BIO-1 (cont.)	nests may be removed. Nests initiated during construction (while significant disturbance from construction activities persist) may be presumed to be unaffected, and only a minimal buffer, determined by District's biologist, would be necessary. c. Roosting Bats: 1) If construction commences between March 1 and July 31, during the bat maternity period, the District will conduct a preconstruction survey for roosting bats within two weeks prior to construction to ensure that no roosting bats will be disturbed during construction. 2) If roosting surveys indicate potential occupation by a special-status bat species, and/or identify a large day roosting population or maternity roost by any bat species within 200 feet of a construction work area, a qualified biologist provided by the District will conduct focused day- and/or night-emergence surveys, as appropriate. 3) If active maternity roosts or day roosts are found within the project site, or in areas subject to disturbance from construction activities, an avoidance buffers shall be constructed. The buffer size will be determined by the District in consultation with CDFW. 4) If a non-breeding bat roost is found in a structure scheduled for modification or removal, the bats shall be safety evicted, under the direction of a qualified biologist provided by the District in consultation with CDFW to ensure that the bats are not injured. 5) If preconstruction surveys indicate that no roosting is present, or potential roosting habitat is unoccupied during the construction period, no further action is required. Trees and shrubs within the construction footprint that have been determined to be unoccupied by roosting bats, or that are located outside the avoidance buffer for active roosting sites may be removed. Roosting initiated during construction is presumed to be unaffected, and no buffer would be necessary.			
Impact BIO-2: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.1(B), Site Activities* (Details as listed under Impact AES-3) *Section 1.3(A), Storm Water Management* (Details as listed under Impact BIO-1) *Section 1.3(B), Water Control and Disposal Plan* (Details as listed under Impact BIO-1)	EBMUD and EBMUD's Construction Contractor	EBMUD	Prior to and During Construction

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Biological Resources (cont.)				
Impact BIO-3: Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.1(B), Site Activities* (Details as listed under Impact AES-3) *Section 1.3(A), Storm Water Management* (Details as listed under Impact BIO-1) *Section 1.3(B), Water Control and Disposal Plan* (Details as listed under Impact BIO-1)	EBMUD and EBMUD's Construction Contractor	EBMUD	Prior to and During Construction
Impact BIO-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.1(B), Site Activities* (Details as listed under Impact AES-3) *Section 1.3(A), Storm Water Management* (Details as listed under Impact BIO-1) *Section 1.3(B), Water Control and Disposal Plan* (Details as listed under Impact BIO-1) *Section 3.7, Protection of Native and Non-Native Protected Trees* (Details as listed under Impact AES-3) *Section 3.8, Protection of Birds Protected Under the Migratory Bird Treaty Act and Roosting Bats* (Details as listed under Impact BIO-1)	EBMUD, EBMUD's Biologist, and EBMUD's Construction Contractor	EBMUD	Prior to and During Construction
Cultural Resources				
Impact CUL-2: Cause a substantial adverse change in the significance of an archaeological resource, pursuant to *CEQA Guidelines* Section 15064.5.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 3.9, Protection of Cultural and Paleontological Resources* A. Confidentiality of Information on Cultural Resources 1. Prior to, or during the course of the Contractor's performance under this contract, the Contractor may obtain information as to the location and/or nature of certain cultural resources, including Native American artifacts and remains. This information may be provided to the Contractor by EBMUD or a third party, or may be discovered directly by the Contractor through its performance under the contract. All such information shall be considered "Confidential Information" for the purposes of this Article. 2. The Contractor agrees that the Contractor, its subcontractors of any tiers, and their respective agents and employees shall not publish or disclose any Confidential Information to any person, unless specifically authorized in advance, in writing by the Engineer. 3. The indemnity obligations of Document 00 72 00 - General Conditions Article 4.7.5 shall apply to any breach of this Article.	EBMUD, EBMUD's Construction Contractor, EBMUD's Resident Construction Engineer, and EBMUD's Archaeologist	EBMUD	Prior to and During Construction

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Cultural Resources (cont.)				
Impact CUL-2 (cont.)	B. Conform to the requirements of statutes as they relate to the protection and preservation of cultural and paleontological resources. Unauthorized collection of prehistoric or historic artifacts or fossils along the Work Area, or at Work facilities, is strictly prohibited. C. Before beginning construction, all Contractor construction personnel shall attend a cultural resources training course provided by EBMUD of up to two hours for site supervisors, foreman, project managers, and non-supervisory contractor personnel. The training program will be completed in person or by watching a video, at an EBMUD designated location, conducted by a qualified archaeologist provided by EBMUD, or by EBMUD staff. The program will discuss cultural resources awareness within the project work limits, including the responsibilities of Contractor's construction personnel, applicable mitigation measures, confidentiality, and notification requirements. The Contractor is responsible for ensuring that all workers requiring training are identified to EBMUD. Prior to accessing the construction site, or performing site work, all Contractor personnel shall: 1. Sign an attendance sheet provided by the Engineer verifying that all Contractor construction personnel have attended the appropriate level of training; have read and understood the contents of the training; have read and understood the contents of the "Confidentiality of Information on Archaeological Resources" and shall comply with all project environmental requirements. D. In the event that potential cultural or paleontological resources are discovered at the site of construction, the following procedures shall be instituted: 1. Discovery of prehistoric or historic-era archaeological resources requires that all construction activities shall immediately cease at the location of discovery and within 100 feet of the discovery. a. The Contractor shall immediately notify the Engineer who will engage a qualified archaeologist provided by EBMUD to evaluate the find. The Contractor is responsible for stopping work and notifying the Engineer and shall not recommence work until authorized to do so by the Engineer. b. EBMUD will retain a qualified archaeologist to inspect the findings within 24 hours of discovery. If it is determined that the Project could damage a historical resource as defined by CEQA (or a historic property as defined by the National Historic Preservation Act of 1966, as amended), construction shall cease in an area determined by the archaeologist until a management plan has been prepared, approved by EBMUD, and implemented to the satisfaction of the archaeologist (and Native American representative if the resource is prehistoric, who shall be identified by the Native American Heritage Commission [NAHC]). In consultation with EBMUD, the archaeologist (and Native American representative) will determine when construction can resume. 2. Discovery of human remains requires that all construction activities immediately cease at, and within 100 feet of the location of discovery.			

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Cultural Resources (cont.)				
Impact CUL-2 (cont.)	a. The Contractor shall immediately notify the Engineer who will engage a qualified archaeologist provided by the EBMUD to evaluate the find. The Contractor is responsible for stopping work and notifying the Engineer and shall not recommence work until authorized to do so by the Engineer. b. EBMUD will contact the County Coroner to determine whether or not the remains are Native American. If the remains are determined to be Native American, the Coroner will contact the Native American Heritage Commission (NAHC). The NAHC will then identify the person or persons it believes to be the most likely descendant from the deceased Native American, who in turn would make recommendations to EBMUD for the appropriate means of treating the human remains and any associated funerary objects. 3. Discovery of paleontological resources requires that all construction activities immediately cease at, and within 100 feet of the location of discovery. a. The Contractor shall immediately notify the Engineer who will engage a qualified paleontologist provided by EBMUD to evaluate the find. The Contractor is responsible for stopping work and notifying the Engineer and shall not recommence work until authorized to do so by the Engineer. b. EBMUD will retain a qualified paleontologist to inspect the findings within 24 hours of discovery. The qualified paleontologist, in accordance with Society of Vertebrate Paleontology guidelines (Society of Vertebrate Paleontology 2010), will assess the nature and importance of the find and recommend appropriate salvage, treatment, and future monitoring and management. If it is determined that construction activities could damage a paleontological resource as defined by the Society of Vertebrate Paleontology guidelines (Society of Vertebrate Paleontology 2010), construction shall cease in an area determined by the paleontologist until a salvage, treatment, and future monitoring and management plan has been prepared, approved by EBMUD, and implemented to the satisfaction of the paleontologist. In consultation with the paleontologist, EBMUD will determine when construction can resume. E. If EBMUD determines that the find requires further evaluation, at the direction of Engineer, the Contractor shall suspend all construction activities at the location of the find and within a larger radius, as required.			
Impact CUL-3: Disturb any human remains, including those interred outside of dedicated cemeteries.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 3.9, Protection of Cultural and Paleontological Resources* (Details as listed under Impact CUL-2)	EBMUD, EBMUD's Construction Contractor, EBMUD's Resident Construction Engineer, and EBMUD's Archaeologist	EBMUD	Prior to and During Construction

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Cultural Resources (cont.)				
Impact CUL-4: Cause a substantial adverse change in the significance of a tribal cultural resource as defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 3.9, Protection of Cultural and Paleontological Resources* (Details as listed under Impact CUL-2)	EBMUD, EBMUD's Construction Contractor, EBMUD's Resident Construction Engineer, and EBMUD's Archaeologist	EBMUD	Prior to and During Construction
Energy				
Impact EN-1: Result in wasteful, inefficient, or unnecessary consumption of energy resources during Project construction or operation.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 3.4(A), Air Quality and Emissions Control* (Details as listed under Impact AIR-1)	EBMUD's Construction Contractor	EBMUD	Prior to and During Construction
Geology and Soils				
Impact GEO-1: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: strong seismic groundshaking; seismic-related ground failure (liquefaction, lateral spreading); or landslides.	**EBMUD's Reservoir Design Guide** EBMUD's Reservoir Design Guide establishes the minimum requirements to follow in the design of EBMUD above- and belowground drinking water reservoirs. The Reservoir Design Guide requires the completion of a geotechnical investigation during design and incorporation of geotechnical design recommendations in project plans and specifications. **EBMUD's Engineering Standard Practice 550.1, Seismic Design Requirements and 512.1, Water Main and Services Design Criteria** EBMUD uses two primary Engineering Standard Practices for the design of water pipelines in its distribution system to address geologic hazards. Engineering Standard Practice 512.1, Water Main and Services Design Criteria, establishes basic criteria for the design of water pipelines and establishes minimum requirements for pipeline construction materials. Engineering Standard Practice 550.1, Seismic Design Requirements, addresses seismic design of the pipelines to withstand seismic hazards, including fault rupture, ground shaking, liquefaction-related phenomena, landslides, seiches and tsunamis and requires that EBMUD establish project-specific seismic design criteria for pipelines with a diameter of greater than 12 inches.	EBMUD's Design Engineers	EBMUD	Prior to and During Construction

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Geology and Soils (cont.)				
Impact GEO-2: Result in substantial soil erosion or the loss of topsoil.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.1(B), Site Activities* (Details as listed under Impact AES-1) *Section 1.3(A) Storm Water Management* (Details as listed under Impact BIO-1) **EBMUD's Reservoir Design Guide** (Details as listed under Impact GEO-2)	EBMUD and EBMUD's Construction Contractor	EBMUD	Prior to and During Construction
Impact GEO-3: Be located on strata or soil that is unstable or that would become unstable as a result of the Project, and potentially could result in on-site or off-site landslides, lateral spreading, subsidence (i.e., settlement), liquefaction, or collapse.	**EBMUD's Standard Construction Specification 01 35 24, Project Safety Requirements** *Section 1.3(C), Excavation Safety Plan* 1. Submit detailed plan for worker protection and control of ground movement for the Engineer's review prior to any excavation work at jobsite. Include drawings and details of system or systems to be used, area in which each type of system will be used, de-watering, means of access and egress, storage of materials, and equipment restrictions. If plan is modified or changed, submit revised plan. 2. All surface encumbrances that are located and determined to create a hazard to employees shall be removed or supported, as necessary, to safeguard employees. 3. Tunnel work shall comply with the Tunnel Safety Orders. **EBMUD's Reservoir Design Guide** (Details as listed under Impact GEO-2)	EBMUD, EBMUD's Construction Contractor, and EBMUD's Resident Construction Engineer	EBMUD	Prior to and During Construction
Impact GEO-4: Be located on expansive soil creating substantial direct or indirect risks to life or property.	**EBMUD's Engineering Standard Practice 550.1, Seismic Design Requirements and 512.1, Water Main and Services Design Criteria** (Details as listed under Impact GEO-1)	EBMUD's Design Engineers	EBMUD	Prior to and During Construction
Impact GEO-5: Directly or indirectly destroy a unique paleontological resources or site or unique geologic feature.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 3.9, Protection of Cultural and Paleontological Resources* (Details as listed under Impact CUL-2)	EBMUD, EBMUD's Construction Contractor, EBMUD's Resident Construction Engineer, and EBMUD's Archaeologist	EBMUD	Prior to and During Construction
Greenhouse Gas Emissions				
Impact GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 3.4(A), Air Quality and Emissions Control* (Details as previously under Impact AIR-1)	EBMUD's Construction Contractor	EBMUD	Prior to and During Construction

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Greenhouse Gas Emissions (cont.)				
Impact GHG-2: Conflict with a plan, policy, or regulation adopted for the purpose of reducing GHG emissions.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 3.4(A), Air Quality and Emissions Control* (Details as previously under Impact AIR-1)	EBMUD's Construction Contractor	EBMUD	Prior to and During Construction
Hazards and Hazardous Materials				
Impact HAZ-1 and **HAZ-2:** Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment.	**EBMUD's Standard Construction Specification 01 35 24, Project Safety Requirements** *Section 1.3, Submittal of Plans and Procedures* B. Project Safety and Health Plan 1. Submit prior to start of the Work for the Engineer's review a Project Safety and Health Plan for the Work to be performed only if actual, potential, or anticipated hazards include: a) hazardous substances; b) fall protection issues; c) confined spaces; d) trenches or excavations; or, e) lockout/tagout. If the actual, potential, or anticipated hazards do not include one or more of these five hazards, no Plan is required 2. Submit prior to start of Work the name of individual(s) who has been designated as: a. Contractor's Project Safety and Health Representative b. Submit principal and alternate Competent/Qualified Persons for: 1) scaffolding; 2) fall protection systems and equipment; and 3) employee protective systems for trenches and excavations. c. Qualified person to conduct and take samples and air measurements of known or suspect hazardous substance for personnel and environmental exposure. Sample results shall be submitted to the Engineer in writing and electronic format. 3. Plan shall include an emergency action plan in the event of an accident, or serious unplanned event (e.g.: gasoline break, fire, structure collapse, etc.) that requires notifying any responsive agencies (e.g.: fire departments, PG&E, rescue teams, etc.). **EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.1(B) Site Activities* (Details as listed under Impact AES-1) *Section 1.3(A), Storm Water Management* (Details as listed under Impact BIO-1) *Section 1.3(B), Water Control and Disposal Plan* (Details as listed under Impact BIO-1) *Section 1.3(C) Construction and Demolition Waste Disposal Plan* 1. Prepare a Construction and Demolition Waste Disposal Plan and submit a copy of the plan for the Engineer's acceptance prior to disposing of any material (except for water wastes which shall be addressed in the Water Control and Disposal Plan).	EBMUD and EBMUD's Construction Contractor	EBMUD	Prior to and During Construction

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Hazards and Hazardous Materials (cont.)				
Impact HAZ-1 and **HAZ-2** (cont.)	a. The plan shall identify how the Contractor will remove, handle, transport, and dispose of all materials required to be removed under this contract in a safe, appropriate, and lawful manner in compliance with all applicable regulations of local, state, and federal agencies having jurisdiction over the disposal of removed materials. b. The Contractor shall procure the necessary permits required by the local, state, and federal agencies having jurisdiction over the handling, transportation, and disposal of construction and demolition waste. c. Include a list of reuse facilities, recycling facilities and processing facilities that will be receiving recovered materials. d. Identify materials that are not recyclable or not recovered which will be disposed of in a landfill (or other means acceptable by the State of California and local ordinance and regulations). e. Identify how the Contractor will comply with The California Department of Toxic Substances Control's (DTSC) Alternative Management Strategies (AMS) when handling and disposing of treated wood waste (TWW) in compliance with 22 CCR 66261.9.5. f. TWW records including but not limited to manifests, bills of lading should be submitted to the Engineer within 5 working days of off-haul. Records should include: (1) name and address of the TWW facility to which the TWW was sent; (2) estimated weight of TWW, or the weight of the TWW as measured by the receiving TWW facility; and (3) date of the shipment of TWW. (Cal. Code Regs., tit. 22, §§ 67386.8(a) and (e)(1)). g. List the permitted landfill, or other permitted disposal facilities, that will be accepting the disposed waste materials. h. Identify each type of waste material to be reused, recycled or disposed of and estimate the amount, by weight. i. Plan shall include the sampling and analytical program for characterization of any waste material, as needed, prior to reuse, recycle or disposal. 2. Materials or wastes shall only be recycled, reused, reclaimed, or disposed of at facilities approved of by the District. 3. Submit permission to reuse, recycle, reclaim, or dispose of material from reuse, recycling, reclamation, or disposal site owner along with any other information needed by the District to evaluate the acceptability of the proposed reuse, recycling, or disposal site and obtain acceptance of the Engineer prior to removing any material from the project site. 4. All information pertinent to the characterization of the material or waste shall be disclosed to the District and the reuse, recycling, reclamation, or disposal facility. Submit copies of any profile forms and/or correspondence between the Contractor and the reuse, recycling, reclamation, or disposal facility. 5. Submit name and Environmental Laboratory Accreditation Program Certificate number of laboratory that will analyze samples for suspected hazardous substances. Include statement of laboratory's certified testing areas and analyses that laboratory is qualified to perform. Submit prior to any laboratory testing.			

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Hazards and Hazardous Materials (cont.)				
Impact HAZ-1 and **HAZ-2** (cont.)	*Section 1.3(D), Spill Prevention and Response Plan* 1. Submit plan detailing the means and methods for preventing and controlling the spilling of known hazardous substances used on the jobsite or staging areas. The plan shall include a list of the hazardous substances proposed for use or generated by the Contractor on site, including petroleum products, and measures that will be taken to prevent spills, monitor hazardous substances, and provide immediate response to spills. Spill response measures shall address notification of the Engineer and appropriate agencies including phone numbers; spill-related worker, public health, and safety issues; spill control, and spill cleanup. 2. Submit a Safety Data Sheet (SDS) for each hazardous substance proposed to be used prior to delivery of the material to the jobsite. *Section 1.3(E) Dust Control and Monitoring Plan* (Details as listed under Impact AIR-1) *Section 3.3(B) Dust Control* (Details as listed under Impact AIR-1) *Section 3.3(C) Dust Monitoring During Demolition and Construction* (Details as listed under Impact AIR-1) *Section 3.3(D) Dust Control System Compliance* (Details as listed under Impact AIR-1) **EBMUD's Standard Construction Specification 02 82 13, Asbestos Control Activities** *Section 1.1, Compliance and Intent* (As detailed under Impact AIR-1) *Section 1.5(B), Plan of Action* (As detailed under Impact AIR-1) **EBMUD's Standard Construction Specification 02 83 13, Lead Hazard Control Activities** *Section 1.1, Compliance and Intent* A. Furnish all labor, materials, facilities, equipment, services, employee training and testing, permits, and agreements necessary to perform the lead removal in accordance with these specifications and with the latest regulations from the U.S. Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), the Air Quality Management District with authority over the project, the Cal/EPA Department of Toxic Substance Control, the California Occupational Safety and Health Administration (Cal/OSHA), and other federal, state, county, and local agencies. Whenever there is a conflict or overlap of the above references, the most stringent provision is applicable. B. During demolition procedures, the Contractor shall protect against contamination of soils, water, adjacent buildings and properties, and the airborne release of hazardous materials and dusts. The costs associated with the implementation of controls will be incurred by the Contractor. C. Any information developed from exploratory work done by the District and any investigation done by the Contractor to acquaint himself with available information will not relieve the Contractor from the responsibility of properly estimating the difficulty or cost of successfully performing the work. The District is not responsible for any conclusions or interpretations made by the Contractor based on the information made available by the District or District's representative.			

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Hazards and Hazardous Materials (cont.)				
Impact HAZ-1 and **HAZ-2** (cont.)	D. Hazardous materials uncovered during the demolition activities shall be disposed of in an approved manner complying with all applicable federal, state, and local regulations. Appropriate waste manifests shall be furnished to the Engineer as per Section 01 35 44, Environmental Requirements. Materials are conveyed to the Contractor "as is," without any warranty, expressed or implied, including but not limited to, any warranty to marketability or fitness for a particular purpose, or any purpose. *Section 1.4, Submittals (Pre-Job)* A. Site safety plan: The Contractor shall provide a site safety plan prior to project initiation as specified in Section 01 35 24. B. Lead Demolition Plan: Lead-containing coating handling, engineering control, removal, and disposal procedures. C. Cal/OSHA Lead Work Pre-Job Notification, if required. D. Submittal of worker documentation for employees used on the job. 1. Lead-Containing Coating Demolition Work: All Contractor's supervisors and workers performing lead-containing coating work shall meet the requirements of the California Department of Health Services (DHS) lead-related construction interim certification (17 CCR 350001). E. Licenses: Submit copies of state and local licenses and evidence of Cal-OSHA certification and permits necessary to perform the work of this contract. F. Submit name and Environmental Laboratory Accreditation Program Certificate number of laboratory that will test samples collected during air monitoring. See Article 3.2 below. **Procedure 711, Hazardous Waste Removal** **EBMUD Environmental Compliance Manual, Section 9, Trench Spoils Field Management Practices**			
Impact HAZ-3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	**EBMUD's Standard Construction Specification 01 35 24, Project Safety Requirements** *Section 1.3(B), Project Safety and Health Plan* (Details as listed under Impact HAZ-1 and HAZ-2) **EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.3(C) Construction and Demolition Waste Disposal Plan* (Details as listed under Impact HAZ-1 and HAZ-2) *Section 1.3(D), Spill Prevention and Response Plan* (Details as listed under Impact HAZ-1 and HAZ-2)	EBMUD and EBMUD's Construction Contractor	EBMUD	Prior to and During Construction

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Hydrology and Water Quality				
Impact HAZ-4: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	**EBMUD's Standard Construction Specification 01 35 24, Project Safety Requirements** *Section 1.3(B), Project Safety and Health Plan* (Details as listed under Impact HAZ-1 and HAZ-2) **EBMUD's Standard Construction Specification 01 55 26, Traffic Regulation** *Section 1.2, Submittals* (Details listed under Impact TRA-1)	EBMUD and EBMUD's Construction Contractor	EBMUD	Prior to and During Construction
Impact HYD-1: Violate water quality standards or waste discharge requirements, or otherwise substantially degrade water quality.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.1(B), Site Activities* (Details as previously listed under Impact AES-3) *Section 1.3(A), Storm Water Management* (Details as previously listed under Impact BIO-1) *Section 1.3(B), Water Control and Disposal Plan* (Details as previously listed under Impact BIO-1)	EBMUD and EBMUD's Construction Contractor	EBMUD	Prior to and During Construction
Impact HYD-3a: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in substantial erosion or siltation on or off site.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.3(A), Storm Water Management* (Details as previously listed under Impact BIO-1) *Section 1.3(B), Water Control and Disposal Plan* (Details as previously listed under Impact BIO-1)	EBMUD and EBMUD's Construction Contractor	EBMUD	Prior to and During Construction
Impact HYD-3b: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner that would substantially increase the rate or amount of surface run-off and result in flooding on or off site.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.1(B), Site Activities* (Details as listed under Impact AES-3) **EBMUD Environmental Compliance Manual, Section 9, Trench Spoils Field Management Practices**	EBMUD and EBMUD's Construction Contractor	EBMUD	Prior to and During Construction

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Hydrology and Water Quality (cont.)				
Impact HYD-3c: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner that would create or contribute run-off water that exceeds the capacity of existing or planned stormwater drainage systems, or provide substantial additional sources of polluted run-off.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.1(B), Site Activities* (Details as previously listed under Impact AES-3) *Section 1.3(A), Storm Water Management* (Details as previously listed under Impact BIO-1) *Section 1.3(B), Water Control and Disposal Plan* (Details as previously listed under Impact BIO-1) *Section 1.3(D), Spill Prevention and Response Plan* (Details as previously listed under Impact HAZ-1 and HAZ-2)	EBMUD and EBMUD's Construction Contractor	EBMUD	Prior to and During Construction
Impact HYD-3d: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner that would impede or redirect flood flows.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.3(A), Storm Water Management* (Details as listed under Impact BIO-1) *Section 1.3(B), Water Control and Disposal Plan* (Details as listed under Impact BIO-1) *Section 1.3(D), Spill Prevention and Response Plan* (Details as listed under Impact HAZ-1 and HAZ-2)	EBMUD and EBMUD's Construction Contractor	EBMUD	Prior to and During Construction
Impact HYD-4: Conflict with or obstruct implementation of a Water Quality Control Plan or Sustainable Groundwater Management Plan.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.3(A), Storm Water Management* (Details as listed under Impact BIO-1)	EBMUD and EBMUD's Construction Contractor	EBMUD	Prior to and During Construction

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Noise				
Impact NOI-1: Result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	**EBMUD's Standard Construction Specification 01 14 00, Work Restrictions** *Section 1.8, Construction Noise* A. Noise-generating activities greater than 90 dBA (impact construction such as concrete breaking, concrete crushing, tree grinding, etc.) shall be limited to the hours of 8:00 a.m. and 4:00 p.m., Monday through Friday. **EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.3(G), Noise Control and Monitoring Plan* 1. Submit a plan detailing the means and methods for controlling and monitoring noise generated by construction activities, including demolition, alteration, repair or remodeling of or to existing structures and construction of new structures, as well as by items of machinery, equipment or devices used during construction activities on the site for the Engineer's acceptance prior to any work at the jobsite. The plan shall detail the equipment and methods used to monitor compliance with the plan. *Section 3.6, Noise Control* A. Comply with sound control and noise level rules, regulations and ordinances as required herein and in the CEQA documents which apply to any work performed pursuant to the contract. B. Contractor is responsible for taking appropriate measures, including muffling of equipment, selecting quieter equipment, erecting noise barriers, modifying work operations, and other measures as needed to bring construction noise into compliance. C. Each internal combustion engine, used for any purpose on the job or related to the job, shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated on the project without said muffler. D. Best available noise control techniques (including mufflers, intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) shall be used for all equipment and trucks, as necessary. E. Truck operations (haul trucks and concrete delivery trucks) will be limited to the daytime hours specified in Section 01 14 00. F. Stationary noise sources (e.g. chippers, grinders, compressors) shall be located as far from sensitive receptors as possible. If they must be located near receptors, adequate muffling (with enclosures) shall be used. Enclosure opening or venting shall face away from sensitive receptors. Enclosures shall be designed by a registered engineer regularly involved in noise control analysis and design. G. Material stockpiles as well as maintenance/equipment staging and parking areas (all on-site) shall be located as far as practicable from residential receptors.	EBMUD and EBMUD's Construction Contractor	EBMUD	Prior to and During Construction

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Noise (cont.)				
Impact NOI-1 (cont.)	H. If impact equipment (e.g., jack hammers, pavement breakers, rock drills etc.) is used during project construction, Contractor is responsible for taking appropriate measures, including but not limited to the following: 1. Hydraulically or electric-powered equipment shall 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 shall be used (a muffler can lower noise levels from the exhaust by up to about 10 dB). External jackets on the tools themselves shall 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. It is the Contractor's responsibility to implement any measures necessary to meet applicable noise requirements. 2. Impact construction including jackhammers, hydraulic backhoe, concrete crushing/recycling activities, vibratory pile drivers etc. shall be limited to the day time hours specified in Section 01 14 00. 3. Limit the noisiest phases of construction to 10 work days at a time, where feasible. 4. 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. 5. Noise Monitoring shall be conducted periodically during noise generating activities. Monitoring shall be conducted using a precision sound-level meter that is in conformance with the American National Standards Institute (ANSI) Standard S1.4, Specification for Sound Level Meters. Monitoring results shall be submitted weekly to the Engineer.			
Impact NOI-2: Result in the generation of excessive groundborne vibration or groundborne noise levels.	**EBMUD's Standard Construction Specification 01 35 44, Environmental Requirements** *Section 1.3(H), Vibration Control and Monitoring Plan* 1. Submit a plan detailing the means and methods for controlling and monitoring surface vibration generated by demolition or other work on site for the Engineer's acceptance prior to any work at the jobsite. The plan shall detail the equipment and methods used to monitor compliance with the plan. *Section 3.5, Vibration Control* A. Limit surface vibration to no more than 0.5 in/sec PPV, measured at the nearest residence or other sensitive structure. See Section 01 14 00. B. Upon homeowner request, and with homeowner permission, EBMUD will conduct preconstruction surveys of homes, sensitive structures and other areas of concern within 15 feet of continuous vibration-generating activities (i.e. vibratory compaction). Any new cracks or other changes in structures will be compared to preconstruction conditions and a determination made as to whether the proposed project could have caused such damage. In the event that the project is demonstrated to have caused the damage, EBMUD will have the damage repaired to the pre-existing condition.	EBMUD and EBMUD's Construction Contractor	EBMUD	Prior to and During Construction

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Transportation				
Impact TRA-1: Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	**EBMUD's Standard Construction Specification 01 55 26, Traffic Regulation** *Section 1.1, Description* A. All proposed street closures shall be clearly identified in the Traffic Control Plan (TCP) and shall conform to the section "Traffic Control Devices" below. Construction area signs for street closure and detours shall be posted a minimum of forty-eight (48) hours prior to the commencement of street closure. Contractor shall maintain safe access around the project limit at all times. Street closures shall be limited to those locations indicated on the construction documents. *Section 1.2 Submittals* A. Submit at least 15 calendar days prior to work a detailed traffic control plan, that is approved by all agencies having jurisdiction and that conforms to all requirements of these specifications and the most recently adopted edition of the California Manual on Uniform Control Devices. Traffic Control Plan shall include: 1. Circulation and detour plans to minimize impacts to local street circulation. Use haul routes minimizing truck traffic on local roadways to the extent possible. 2. A description of emergency response vehicle access. If the road or area is completely blocked, preventing access by an emergency responder, a contingency plan must be included. 3. Procedures, to the extent feasible, to schedule construction of project elements to minimize overlapping construction phases that require truck hauling. 4. Designated Contractor staging areas for storage of all equipment and materials, in such a manner to minimize obstruction to traffic. 5. Locations for parking by construction workers. *Section 2.1, Traffic Control Devices* A. Traffic signs, flashing lights, barricades and other traffic safety devices used to control traffic shall conform to the requirements of the most recently adopted edition of the California Manual on Uniform Control Devices and the agency having jurisdiction. 1. Portable signals shall not be used unless permission is given in writing by the agency having jurisdiction. 2. Warning signs used for nighttime conditions shall be reflectorized or illuminated. "Reflectorized signs" shall have a reflectorized background and shall conform to the current State of California Department of Transportation specification for reflective sheeting on highway signs.	EBMUD and EBMUD's Construction Contractor	EBMUD	Prior to and During Construction

TABLE 11-1 (CONTINUED)
EBMUD PRACTICES AND PROCEDURES MONITORING AND REPORTING PLAN

Impact Area	EBMUD Practices and Procedures[1]	Responsibility for Implementation	Responsibility for Monitoring and/or Enforcement	Timing of Implementation
Transportation (cont.)				
Impact TRA-1 (cont.)	*Section 3.1, General* A. Install temporary traffic markings where required to direct the flow of traffic. Maintain the traffic markings for the duration of need and remove by abrasive blasting when no longer required. *Section 3.2, Alternating On-Way Traffic* A. Where alternating one-way traffic has been authorized, the following shall be posted at each end of the one-way traffic section at least one week prior to start of work: 1. The approximate beginning and ending dates that traffic delays will be encountered. 2. The maximum time that traffic will be delayed. *Section 3.3, Flagging* A. Provide flaggers to control traffic where required by the approved traffic control plan. 1. Flaggers shall perform their duties and shall be provided with the necessary equipment in accordance with the current "Instructions to Flaggers" of the California Department of Transportation.			
Impact TRA-3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	**EBMUD's Standard Construction Specification 01 55 26, Traffic Regulation** (Details as listed under Impact TRA-1)	EBMUD and EBMUD's Construction Contractor	EBMUD	Prior to and During Construction
Impact TRA-4: Result in inadequate emergency access.	**EBMUD's Standard Construction Specification 01 55 26, Traffic Regulation** (Details as listed under Impact TRA-1)	EBMUD and EBMUD's Construction Contractor	EBMUD	Prior to and During Construction

NOTES:
[1] In EBMUD Standard Specifications, "District" = EBMUD; "Engineer" = EBMUD Engineer; "Contractor" = EBMUD Contractor; "Work" = Scope of Work for the Project

TABLE 11-2
MITIGATION MONITORING AND REPORTING PROGRAM

Impact Area	Mitigation Measure	Responsible for Implementation	Responsible for Monitoring and/or Enforcement	Timing of Implementation
Aesthetics				
Impact AES-4: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	**Mitigation Measure AES-1: Nighttime Lighting Controls.** To the extent possible, EBMUD shall ensure that temporary stationary lighting used during nighttime construction is of limited duration, shielded, and directed downward or oriented such that little or no light is directly visible from nearby residences.	EBMUD and EBMUD's Construction Contractor	EBMUD	For the duration of nighttime construction
Biological Resources				
Impact BIO-1: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the CDFW or USFWS.	**Mitigation Measure AES-1: Nighttime Lighting Controls.** (Details as listed under Impact AES-4)	EBMUD and EBMUD's Construction Contractor	EBMUD	For the duration of nighttime construction
Noise				
Impact NOI-1: Result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	**Mitigation Measure NOI-1: Noise Control Measures** EBMUD shall erect a 16-foot tall K-rail mounted temporary noise barrier along EBMUD's property adjacent to the Redwood Day School for the entire construction duration. The noise barrier will be Sound Transmission Class (STC) rated and specific to sound attenuation applications. There may be some periods of construction when the noise barrier may be temporarily moved or dismantled to accommodate the Project construction area. EBMUD will schedule construction activities outside of normal school hours when it is feasible to do so if heavy construction equipment, including but not limited to impact equipment, is operated within 100 feet of the closest classroom or if the noise barrier needs to be temporarily removed to accommodate construction. Additionally, noise barriers consisting of 6-foot-high acoustical paneling will be attached to the fencing along the western, southern and eastern site perimeter, except in areas where the 16-foot tall K-rail mounted temporary noise barrier is used along the Redwood Day School boundary as shown on revised Figure 3.10-3. No fence mounted noise barriers would be used along the northern site boundary between the site and I-580.	EBMUD and EBMUD's Construction Contractor	EBMUD	During construction
	Mitigation Measure NOI-2: Off-site Accommodations for Affected Nighttime Receptors At least ten (10) days in advance, EBMUD will notify residents of the Southern Residences that could be affected by nighttime (10:00 p.m. to 7:00 a.m.) pipeline connection construction near the 25th Avenue/East 29th Street intersection. Residences within 500-feet of the pipeline connection construction may request alternative lodging for the night(s) of the potential nighttime construction from EBMUD; alternative lodging will consist of a standard room at a hotel located within 5 miles of the affected residence or as close as feasible. Alternative lodging will be provided and approved by EBMUD the day before the known nighttime construction occurs, or sooner, based upon the types of construction activities that may occur during the nighttime hours (10:00 p.m. to 7:00 a.m.). This measure would only be implemented if nighttime construction occurs.	EBMUD	EBMUD	10 days before and through the duration of nighttime pipeline connection construction

TABLE 11-2 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM

Impact Area	Mitigation Measure	Responsible for Implementation	Responsible for Monitoring and/or Enforcement	Timing of Implementation
Transportation and Circulation				
Impact TRA-1: Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	**Mitigation Measure TRA-1: Conduct an operational and safety analysis by a traffic engineer for the Ardley Avenue/new Redwood Day School Driveway intersection for the Redwood Day School Access Driveway Design Option**. To minimize potential conflicts between the existing traffic on Ardley Avenue and the diverted traffic exiting onto Ardley Avenue from the new Redwood Day School Access Driveway Design Option, EBMUD shall as part of any agreement with Redwood Day School require that the school conduct an operational and safety analysis by a traffic engineer for the Ardley Avenue/new Redwood Day School access driveway intersection. The performance standard for the analysis is to minimize potential vehicular, pedestrian, and bicycle conflicts, based on the professional opinion of the traffic engineer and in accordance with City of Oakland Public Works Department standards. At a minimum, the analysis would evaluate the following: • Traffic operational analysis consistent with City of Oakland Public Works Department standards to determine what type of stop-control (e.g., stop sign, traffic signal, etc.) is appropriate. • An evaluation of sight distances for vehicles turning out of the Redwood Day School access driveway to ensure that any turns out of the driveway can be made safely. • An evaluation of pedestrian and bicycle volumes along Ardley Avenue to determine whether signage and/or flashing beacons are warranted to alert driveway users to the presence of pedestrians and bicyclists on Ardley Avenue. • An evaluation of whether signage is warranted along both travel directions of Ardley Avenue in advance of the driveway to alert roadway users of "Driveway Ahead." • An evaluation of vehicular travel speeds on Ardley Avenue to determine whether traffic calming features such as school signage and/or speed bumps are warranted to slow traffic in the vicinity of the driveway. If the operational and safety analysis concludes that turns out of the driveway can be safely accommodated, and this finding is endorsed by City of Oakland Public Works Department staff, then EBMUD could allow vehicular movements from the driveway onto Ardley Avenue.	EBMUD and EBMUD's Traffic Engineer	EBMUD	Prior to construction
Impact TRA-3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	**Mitigation Measure TRA-2: As part of the Traffic Control Plan, include traffic control measures for trucks traveling along East 27th Street.** The following measures shall be implemented during the entire duration of the Project construction, to reduce the Project's temporary impacts on traffic circulation: • Hauling and material delivery trucks and equipment delivery trucks traveling to and from the Project site during construction shall be restricted in both travel directions along East 27th Street between Fruitvale Avenue and 23rd Avenue during the typical Manzanita Community School (2409 East 27th Street) drop-off and pick-up hours. Manzanita Community School is open between 8:30 a.m. and 3:00 p.m., and the peak drop-off and pick-up hours are from 7:30 a.m. to 8:30 a.m. and from 3:00 p.m. to 4:00 p.m., respectively. The construction contractor shall confirm the start and dismissal times prior to the beginning of each school year.	EBMUD and EBMUD's Construction Contractor	EBMUD	During construction

TABLE 11-2 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM

Impact Area	Mitigation Measure	Responsible for Implementation	Responsible for Monitoring and/or Enforcement	Timing of Implementation
Transportation and Circulation (cont.)				
Impact TRA-3 (cont.)	• If it is not feasible to avoid hauling and material delivery trucks and equipment delivery trucks during school drop-off and pick-up hours, the construction contractor shall provide flaggers at the crosswalks of the East 27th Street/25th Avenue intersections to manage traffic flow and maintain traffic safety. If construction trucks travel along East 27th Street, between 25th Avenue and 23rd Avenue, the construction contractor shall also provide flaggers near the existing white passenger loading zone on East 27th Street between the gate of Manzanita Community School and 25th Avenue.			

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APPENDIX L

Asbestos Summary Report and Specification Review

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EBMUD Central Reservoir Asbestos Project Summary
FINAL

October 2020

Prepared on Behalf of:

EAST BAY MUNICIPAL UTILITY DISTRICT

East Bay Municipal Utility District
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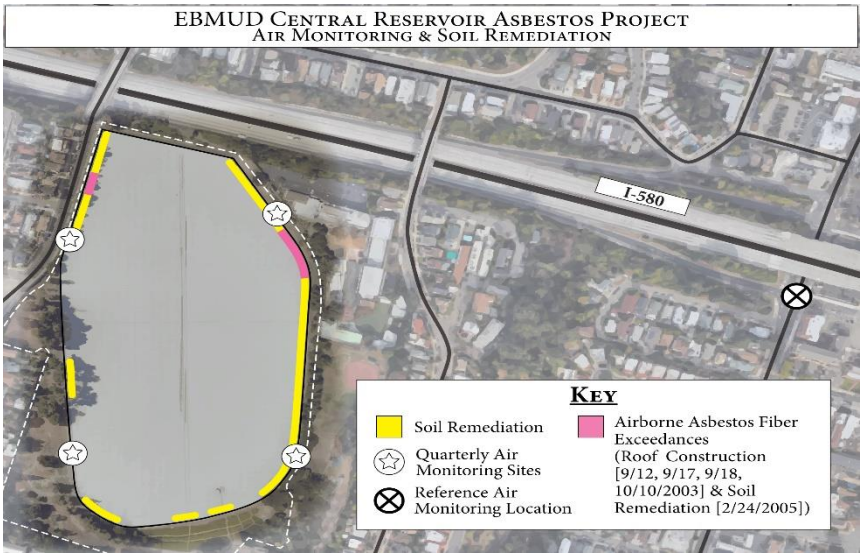
Table of Contents

Section 1: Introduction

The EBMUD Central Reservoir, which was constructed in 1910, is a 154-million-gallon, open-cut reservoir that provides emergency and operational water storage to EBMUD customers from Oakland and Emeryville to the north and the Oakland/San Leandro border to the south, including most of the city of Alameda. The Central Reservoir occupies a 27-acre site in Oakland and is bounded to the north by Highway 580, to the west by Ardley Avenue and 23rd Avenue, to the south by East 29th Street, and to the east by Sheffield Avenue. Land uses around the reservoir include a freeway, residential homes, a public park, and the Redwood Day School. The perimeter of the facility is fenced, and access is restricted to authorized personnel. The property inside the fence includes an access road to the reservoir, mature trees, and a 10- to 15-foot-wide asphalt driveway that surrounds the reservoir. A roof was installed over the reservoir in the early 1960s. The location of the reservoir is shown in Figure 1 below.

Figure 1 – EBMUD Central Reservoir Overview



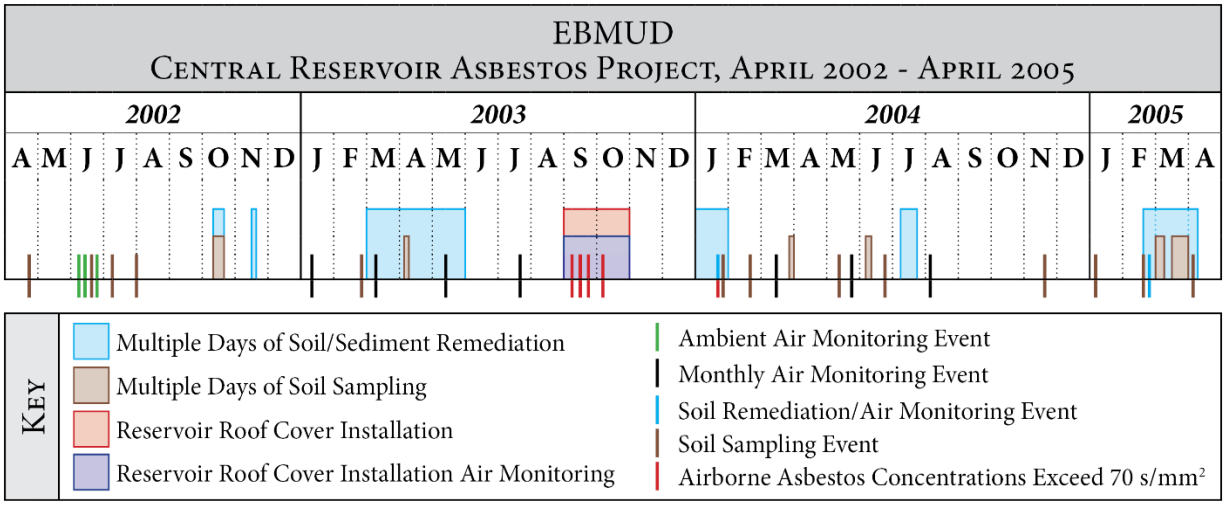
The roof was constructed of corrugated transite panels that are supported from beneath by a wooden substructure. Bulk sampling has determined that the transite roof panels and felt underlayment material contain up to 20 percent chrysotile asbestos. In early 2000 EBMUD recognized that the transite roof panels were degrading due to weathering and were potentially sloughing asbestos fibers into the environment, representing a potential health hazard to EBMUD workers performing maintenance on the reservoir as well as the general public. In response to the recognition of the potential health hazards related to the release of asbestos fibers from the transite roof panels, EBMUD contracted with ENTRIX, Inc. (ENTRIX) to conduct the Central Reservoir Asbestos Project. The overall project was performed over the course of approximately 36 months between April 2002 and April 2005. The project consisted of multiple tasks, including:

- Worker exposure monitoring (maintenance crew during debris removal from the reservoir roof);
- Soil and sediment sampling and remediation of asbestos-contaminated soil/sediment;

- Ambient air monitoring during normal conditions (pre-roof enclosure), roof enclosure installation, post-roof enclosure installation, and soil remediation; and
- Reservoir water sampling.

A comprehensive timeline of the activities that were performed during the Central Reservoir Asbestos Project is shown in Figure 2 below.

Figure 2
Central Reservoir Asbestos Project Timeline



The results from the Central Reservoir Asbestos Project are presented in the Reservoir Asbestos Project Final Report (ENTRIX, March 2006). The report consists of an overview of the project and six individual reports for the various tasks that were conducted.[1]

Section 2: Health-Based Comparison Criteria

Asbestos is a recognized carcinogen. Exposures to airborne asbestos fibers are known to increase the risk of lung cancer (mesothelioma), asbestos-related lung disease (asbestosis), and increased risks of stomach, colorectal, and renal carcinoma in humans. Ingestion (eating or drinking) of asbestos fibers has also been shown to increase risk of adenomatous polyps and colorectal cancer. Asbestos is a common ambient air contaminant due to its widespread historical use in construction materials and automotive products. Asbestos is also present in some types of serpentine rock, of which outcroppings exist throughout portions of California.

[1] The purpose of this memorandum is to provide a concise summary of the results and conclusions from the ENTRIX reports. NES, Inc. (*NES*) has summarized the data that was provided in the ENTRIX Final Report (March 2006). The interpretations of the data are ENTRIX's alone. *NES* has not presented any interpretations or drawn any conclusions based on the information presented in ENTRIX's reports.

ENTRIX used the following health-based comparison criteria to evaluate the risks associated with the presence of asbestos-containing materials on the Central Reservoir site.

EBMUD Employees – California Division of Occupational Safety & Health (Cal/OSHA) permissible exposure limit (PEL): 0.1 fibers per cubic centimeter of air (f/cc), as determined by phase contrast microscopic (PCM) analyses;

Ambient Air – Asbestos Hazard Emergency Response Act (AHERA), Schools Reoccupation Standard (Clearance Criteria), and the United States Environmental Protection Agency (U.S. EPA) benchmark for determining asbestos hazards in air around ground zero at the World Trade Center Site: 70 structures per square millimeter (s/mm^2), as determined by Transmission Electron Microscopy (TEM);

Cancer Risk Evaluation – The unit risk factor for long-term continuous exposure (seven days per week, 24 hours per day for a lifetime) to airborne asbestos fibers as developed by California EPA Office of Environmental Health Hazard Assessment (OEHHA) to evaluate potential cancer risk associated with exposure to airborne asbestos fibers. The results from the evaluations were compared to the acceptable risk range of one in a million (1 x 10-6) to one hundred in a million (1 x 10-4) as identified in California and federal regulatory guidance;

Soil/Sediment – California Air Resources Board (CARB) Asbestos Airborne Toxic Control Measure (ATCM) for surfacing applications: 0.25% as determined by polarized light microscopy (PLM) (CARB Method 435); and

Drinking Water – California Department of Health Services Drinking Water Standard: Maximum Contaminant Level for Asbestos fibers: 7 million fibers (greater than 10 micrometers in length) per liter (MFL).

Section 3: Airborne Asbestos Fiber Monitoring

3.1 Worker Exposure Monitoring

Worker exposure monitoring performed on April 25, 2002 identified the potential for workers to be exposed to airborne asbestos fibers during removal of vegetative debris from the Central Reservoir roof and during landscaping work being performed around the perimeter of the Central Reservoir. The results from the monitoring revealed worker exposures to asbestos to be below the Cal/OSHA PEL of 0.1 f/cc.

3.2 Ambient Air Monitoring

Air monitoring was performed to measure the airborne concentration of asbestos fibers throughout the project. Air monitoring stations are typically positioned around the work area, at upwind and downwind locations, and at an off-site reference location. The combination of sampling locations on a given day is referred to as the sampling event. Ambient air sampling was performed while no

work activities are being performed in order to measure the normal baseline concentrations of airborne asbestos fibers. This can be used as a point of comparison to samples collected during work activities that could disturb asbestos-containing materials.

Air sampling performed in conjunction with the worker exposure monitoring event revealed that roof maintenance activities (debris removal / leaf-blowing) released airborne asbestos fibers into the ambient air in vicinity of the work. One sample that was collected downwind of the work on the roof itself revealed an asbestos fiber concentration that exceeded the comparison criteria (70 s/mm^2) by approximately 22%. Based on the results from the worker exposure monitoring and ambient air monitoring event, three additional ambient air sampling events were performed on June 20, 24, and 26, 2002. Ambient air samples were collected simultaneously from three background (off-site) and between six and seven on-site (within approximately 40 feet of the reservoir) locations. No activities were occurring at the Central Reservoir during the three sampling events. The results revealed detectable asbestos fibers in one background sample at 19.6 s/mm^2 and four on-site samples (14.5 – 22.9 s/mm^2). Based on the results and comparison with the health-based comparison criteria, ENTRIX concluded that airborne asbestos fibers in the vicinity of the Central Reservoir did not represent a health risk to workers or the general public.

Based on the presence of the asbestos-containing transite roof at the Central Reservoir and the recognized potential for asbestos fibers from the transite roof to become airborne, ENTRIX initiated an ambient air monitoring program. The ENTRIX report referred to this as monthly air monitoring because it was performed at multiple (eight) reservoir locations with sampling being performed at three or four reservoirs per month. The Central Reservoir was sampled in January, March, May, and July 2003 with reports developed on a quarterly basis. The purpose of the ambient air monitoring program was to determine if airborne asbestos fibers were being released from the Central Reservoir Site at concentrations that could represent a health risk to workers at the site or the general public. Four events were performed over the course of the seven months (1/7/2003, 3/4/2003, 5/13/2003, and 7/22/2003) before the start of the enclosure of the transite reservoir roof. Ambient air samples were collected at four fixed perimeter locations surrounding the reservoir (refer to Figure 1) and from one reference location (Cal Trans Park & Ride Parking Lot) positioned approximately 1/3 of a mile to the east-northeast of the Central Reservoir. The results from the pre-enclosure installation ambient air sampling revealed the sporadic presence (30 percent of the samples) of low concentrations (less than 14 percent of the health-based criteria) of asbestos fibers at the on-site sampling locations. A low concentration (13 percent of the health-based criteria) was also detected in one of the four samples (25 percent of samples) that were collected from the reference location. ENTRIX concluded that based upon comparison with the health-based criteria, airborne asbestos fibers in the vicinity of the Central Reservoir did not indicate a health risk to workers and the general public.

The enclosure of the transite reservoir roof was performed between September 2 and October 30, 2003. Due to the potential for airborne asbestos fibers to be released to the environment during the enclosure installation process, air sampling was performed along the perimeter of the Central

Reservoir site on 25 days during the course of the roof enclosure project (43 days). The sampling locations were selected based on where the work was being performed, wind direction, and locations of the nearest sensitive receptors. Fifty-six ambient air samples were analyzed for asbestos fibers. Asbestos fibers were detected in 24 of the 56 samples (43 percent of samples). Six samples revealed airborne asbestos fibers that exceeded the health-based criteria. The exceedances ranged from 9 to 131 percent above the health-based criteria. Five of those samples were collected along the northeastern perimeter of the Central Reservoir site, and one sample that exceeded the health-based criteria was collected from the northwestern perimeter of the Central Reservoir site. ENTRIX reported that the exceedances coincided with specific disturbance events that occurred during the roof enclosure installation work, including contractor vehicles traveling off the paved area and disturbing surrounding soils and contractors dragging roof bracing across the transite roof. Five of the six exceedances occurred within the first 14 days of the roof enclosure installation work. ENTRIX reported that the contractors were made aware of the exceedances and that work practices were modified to reduce the potential for asbestos fiber disturbance and release. One exceedance occurred following implementation of the modified work practices. ENTRIX concluded that while sporadic exceedances of the health-based criteria did occur during the roof enclosure installation work, the measurements did not imply an immediate health threat. ENTRIX stated that asbestos exposure becomes a health concern when high concentrations of asbestos fibers are inhaled over a long period and that illness is very unlikely to result from a single, high-level exposure or from a short period of exposure to lower levels. As such, ENTRIX concluded that the perimeter air sampling that was performed during the roof enclosure installation work did not indicate a health risk to the general public during the roof enclosure project.

Following completion of the roof enclosure project, an additional three monthly air monitoring events were performed. Samples were collected from the same locations that were used during the pre-roof enclosure installation monthly air sampling events, including the off-site reference location (Cal Trans Park & Ride Parking Lot). The results from the post-roof enclosure installation air sampling events revealed potential asbestos fibers at low concentrations (less than 31 percent of the health-based criteria) at each of sampling locations (including the reference location) during the first post-roof enclosure installation sampling event (3/9/2004). Subsequent air sampling events on 5/25/2004 and 8/2/2004 did not detect any asbestos fibers. ENTRIX concluded that results from the post-roof enclosure installation perimeter air sampling did not indicate a health risk to EBMUD workers or the general public.

Following completion of the roof enclosure installation, additional perimeter airborne asbestos fiber sampling was performed during the final soil remediation work that was conducted at the site. Soil remediation was performed along the eastern side of the reservoir between January 20 and 23, 2004 and again between July 12 and 19, 2004. One airborne asbestos sample that was collected on January 23, 2004 exceeded the health-based criteria by approximately 63 percent (114.3 s/mm^2). Soil remediation was performed on the western side of the reservoir intermittently between February 22 and April 5, 2005. No asbestos fibers were detected in the ambient air

samples that were collected along the western site perimeter during the excavation/remediation work.

Section 4: Soil Sampling & Remediation

Soil sampling was performed around the Central Reservoir to determine the concentration of asbestos fibers and location of impacted soils on-site. Soil samples were collected from locations around the reservoir. At each location, unique samples were collected from the surface, at 3 inches depth, and at 6 inches depth (in specific locations). Initial soil sampling was performed on April 25, 2002 and identified asbestos in landscaping debris collected from the reservoir roof. A detailed assessment of soils throughout the site was performed on June 17, 2002 and July 18, 2002. A total of 23 soil samples were collected on-site in addition to 10 background soil samples collected up to ¼ mile off-site in the surrounding community, including the Redwood Day School, Central Reservoir Recreation Area, Oakland Garden Center, Manzanita Recreation Center, and six cross-street locations. On-site soil samples were collected up to the perimeter fence line. The results of this assessment identified asbestos in 18 of the 23 on-site soil samples ranging from < 0.25% to 2.5% asbestos. Asbestos was not detected in any of the 10 background soil samples collected in the nearby community.

On April 25, 2002, prior to the start of soil remediation, asbestos-containing sediment and debris were removed from the driveway and storm drain system surrounding the reservoir. The initial round of soil remediation was performed during the week of October 14, 2002 to remove the identified asbestos-containing soil and debris surrounding the reservoir. The top 3-6 inches of soil was excavated from areas with identified asbestos at or above the 0.25% threshold. Confirmation soil sampling was performed to verify the remaining soil had asbestos concentrations below the 0.25% threshold. Confirmation soil sampling identified areas that needed additional remediation. The follow-up remediation was performed on November 15, 2002 and April 3-4, 2003. A total of 34 soil samples were collected during this phase of the project with 9 sample locations exceeding the 0.25% threshold. Remediation was performed up to the perimeter fence line in applicable locations. Confirmation soil sampling performed after the April 2003 remediation showed asbestos concentrations below the 0.25% threshold in each of the areas sampled. A total of 524 cubic yards of asbestos-containing soil and vegetation was removed during the initial site cleanup in 2002 and 2003.

The reservoir roof enclosure project was completed on October 30, 2003. Post-enclosure installation soil sampling was performed around the reservoir on November 18, 2003. Samples were collected from the surface at 3 inches depth and at 6 inches depth to determine the amount of asbestos-containing soil that needed to be removed. Soil remediation was performed along the east side of the reservoir beginning on January 20-23, 2004. Remediation was performed up to the perimeter fence line and in the adjacent Central Reservoir Recreation Area. Confirmation soil sampling on the east side revealed five locations that needed additional remediation to achieve

asbestos concentrations below the 0.25% threshold. A second round of remediation was performed on the east side on July 12-28, 2004. Confirmation soil sampling performed after the second round of remediation on the east side showed asbestos concentrations below the 0.25% threshold in each of the areas sampled. A total of 280 cubic yards of asbestos-containing soil and vegetation was removed during the east side remediation project.

Soil remediation was performed along the west side of the reservoir from February 22, 2005 to April 5, 2005. Remediation was performed up to the western perimeter fence line. Confirmation soil sampling on the west side identified one location along the northwest perimeter that needed additional remediation to achieve asbestos concentrations below the 0.25% threshold. A second round of remediation was performed in this area, and subsequent confirmation soil sampling showed asbestos concentrations below the 0.25% threshold. A total of 98 cubic yards of asbestos-containing soil and vegetation was removed during the west side remediation project.

Section 5: Reservoir Water Sampling

One sample of water from the Central Reservoir was collected on August 13, 2002. Analysis of the water sample by Polarized Light Microscopy (PLM) revealed no detectable asbestos fibers.

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Technical Memorandum

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From: Mr. Kim Worl, CIH
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cc: Mr. David Rehnstrom
Mr. Bill Maggiore
East Bay Municipal Utility District

Date: January 27, 2021

Subject: Final Central Reservoir Replacement Project Asbestos Hazard Control Specifications Review

At the request of East Bay Municipal Utility District (EBMUD) NES, Inc. (*NES*) reviewed the Project Description and EBMUD Standard Practices and Procedures (SP&Ps) as referenced in the Central Reservoir Replacement Project (Project) Draft Environmental Impact Report (ESA, November 2019) (DEIR) and the results from the Central Reservoir Asbestos Project presented in the Reservoir Asbestos Project Final Report (ENTRIX, March 2006). The purpose of the review was to consider the potential for feasible modifications to the referenced SP&Ps to improve protection of worker and public safety during the Project's roof demolition and asbestos handling and related earth moving activities.

As described in the DEIR, the Project includes demolition of the existing reservoir, roof, reservoir lining, and the material storage building; followed by construction of a reinforced tank foundation system and three 17 million gallon concrete tanks positioned approximately 20 feet higher in elevation than the existing reservoir. The Project also includes construction of a new rate control station (RCS), a valve structure, service road and site paving, landscaping, a bioretention area, and security fencing all within the existing reservoir property.

The specific EBMUD SP&Ps and guidance documents that pertain to the protection of worker and public health and are referenced in the DEIR include the following (please note that the descriptions provided below represent brief summaries of the SP&P and

guidance documents. Detailed descriptions of the SP&Ps and guidance documents are provided in the DEIR under the appropriate environmental resource areas):

- 01 35 44, Environmental Requirements – This SP&P includes provisions related to water quality, dust and emissions control, noise and vibration control, hazardous materials control, and protection of biological and cultural resources.
- 01 35 24, Project Safety Requirements – This SP&P includes provisions for the safety of the construction workers at the site and the public regarding hazards related to the work at the site and hazardous materials.
- 02 82 13, Asbestos Control Activities – This SP&P includes requirements for the abatement, removal, control of asbestos releases, and proper disposal of asbestos-containing materials required as a result of the demolition and construction activities.
- Procedure 711, Hazardous Waste Removal – This SP&P defines hazardous waste and establishes responsibilities for removal of hazardous wastes from EBMUD facilities.
- EBMUD's Environmental Compliance Manual – This SP&P includes best management practices (BMPs) that have been incorporated into the Project, including provisions regarding water quality, hazardous waste, management of trench spoils, and reservoir rehabilitation.

The SP&Ps and guidance documents have been designed to address typical characteristics of EBMUD construction projects and are not project specific or tailored to the unique characteristics of the Project. *NES* reviewed each of these SP&Ps and guidance documents specifically from the perspective of protecting worker and public health from the asbestos hazards associated with the Project in conjunction with the scope of the overall Project. These SP&Ps and guidance documents provide a solid foundation for protecting worker and public health. However, due to the unique asbestos related characteristic of the Project, including removal of the asbestos-containing transite reservoir roof, the magnitude of the earthmoving work that will be performed, and the close proximity of the Project area to the general public, *NES* has provided recommended modifications to the Project approach and the SP&Ps and guidance documents to enhance worker and public health. Suggested edits/modifications to the referenced SP&Ps and guidance documents are presented below.

EBMUD Specification 01 35 44 – Environmental Requirements

Relevant sections of this specification that pertain specifically to the control of potential asbestos hazards to workers and the public, include:

- Requirement that a Construction and Demolition Waste Disposal Plan (C&DWDP) be developed for the Project. The C&DWDP will identify how the Contractor will remove, handle, transport, and dispose of all materials that are required to be removed in a safe, appropriate, and lawful manner in compliance with all applicable local, state, and federal agencies.
    - Portions of the C&DWDP will describe how asbestos containing waste material and debris will be managed in order to protect workers and the public from uncontrolled exposures to asbestos fibers generated from the Project. This requirement will match with portions of EBMUD Specification 02 82 13, Asbestos Control Activities.
    - The C&DWDP includes the requirement for a Spill Prevention and Response Plan (SPRP). The SPRP will detail the means and methods for preventing and controlling spills of known hazardous materials, including asbestos. This requirement will match with portions of EBMUD Specification 02 82 13, Asbestos Control Activities.
    - The C&DWDP includes a requirement for a Dust Control and Monitoring Plan (DC&MP). The DC&MP will describe the means and methods for controlling and monitoring dust generated by construction, demolition, and other work on the site. The DC&MP will match with the Asbestos Air Monitoring Plan that will be a portion of the Asbestos Action Plan as required by EBMUD Specification 02 82 13, Asbestos Control Requirements. The DC&MP dust control measures, include, but are not limited to:
        - Water application frequency to Project surfaces;
        - Coarse rock and/or water application to all dust generating construction areas;
        - Water and/or cover soil stockpiles daily;
        - Cover all hauling trucks leaving the site;
        - Installation of wind fences;
        - Suspending work activities when wind speeds exceed 20 miles per hour (mph), lightning storms, torrential rains, thick fog, etc.
        - Limiting vehicle speeds to 15 mph on the site.

NES recommends that real-time monitoring for airborne particulate be performed in support of the DC&MP throughout the project whenever potential dust generation activities are occurring at the site. This type of monitoring measures total dust and is not

specific to asbestos fibers. As such, real time monitoring that is utilized as a portion of the DC&MP should not be used to directly assess potential airborne asbestos concentrations. Use of a real time particulate monitor would provide immediate information as to the effectiveness of the overall demolition/construction dust control methods.

EBMUD Specification 01 35 24 Project Safety Requirements

Relevant sections of this specification that pertain specifically to the control of potential asbestos hazards to workers and the public include:

- A requirement that site activities provide for public safety;
- A requirement that the Contractor develop a Project Health and Safety Plan (PH&SP). The PH&SP will include all aspects of the Project, and several components of the PH&SP will match with specific sections of the Asbestos Plan of Action (POA) as required by EBMUD Specification 02 82 13, Asbestos Control Activities, including worker qualifications, worker training, job hazard analyses, demolition plan, asbestos air monitoring plan, hazard warnings/posting, threat to public health response, and emergency response procedures.
- A requirement that the Contractor controls exposures to harmful dust, fumes, mists, vapors, and gases at the Project site so that respective exposure limits are not exceeded. This requirement will match with the Asbestos Air Monitoring Plan that will be a portion of the POA as required by EBMUD Specification 02 82 13, Asbestos Control Activities.

NES does not have any recommendations for modifications to this SP&P as it relates to improving protection of worker or public safety.

EBMUD Specification 02 82 13 Asbestos Control Activities

This specification requires that all asbestos removal work be performed in compliance with local (Bay Area Air Quality Management District [BAAQMD]), state (California/Occupational Safety and Health Administration [Cal/OSHA], California/Environmental Protection Agency [Cal/EPA], and Department of Toxic Substances Control [DTSC]), and federal regulations (OSHA, United States EPA [US EPA]). The specification requires the submittal of a comprehensive PH&SP, which coincides with the requirements of EBMUD Specification 01 35 24 Project Safety Requirements.

The specification also requires the development of a POA for the asbestos related work. The POA shall provide detailed procedures that will ensure compliance with applicable regulations and the protection of worker and public health.

The POA will describe the procedures to address asbestos containing materials which would apply to the demolition of the asbestos-containing transite reservoir roof and asbestos contaminated soils. The POA will also include the location and layout of decontamination areas, the sequencing of asbestos work, the interface of trades involved in the performance of work, disposal plan including location of approved disposal site, a detailed description of the methods to be employed to control pollution, description of use of portable high efficiency particulate air (HEPA) ventilation system, method of removal to prevent visible emissions in the work area, and packaging of removed asbestos debris.

The DEIR currently does not specify the method for removal of the asbestos-containing transite roof which would be developed by the roof demolition contractor and included as a component of the POA.

NES recommends that a Feasibility Assessment for removal of the reservoir's asbestos-containing transite roof panels be performed during the design phase of the Project. The Feasibility Assessment would help ensure that a suitable method for removal of the transite roof panels is chosen. At a minimum, the Feasibility Assessment should address the following factors:

- Ability to control the release of asbestos fibers into the air;
- Ability to effectively contain the transite roof panel removal work;
- Understanding the current condition of the transite panels, i.e., intact versus friable;
- Knowledge of the construction methods used to install the metal roof over the transite panels;
- Knowledge of the construction methods used to install the transite roof (panel size, attachment to the sub structure, load bearing capacity, presence of water-proof barriers, etc.);
- Ability to contain, control and treat the asbestos abatement run off waters;
- Performance time;
- Performance cost.

Feasible options for removal of the transite roof panels may include, but are not limited to:

- Wetting and misting;
- Removal from beneath;

- Full containment of the reservoir roof;
- Partial, modular containment(s);
- Encapsulation (application of a liquid binding product to the transite roof panels prior to removal that would prevent the release of asbestos fibers during the removal process) or enclosure (wrapping each panel with visqueen) to prevent asbestos fiber release and to facilitate removal;
- Other options based on current state of the art for asbestos transite panel removal.

The Feasibility Assessment should identify all feasible options based on the eight factors listed above, and then of those identified feasible options, the one that is most protective of worker and public health should be chosen.

NES recommends that the Feasibility Assessment be performed during the design phase of the Project by a State licensed experienced and knowledgeable asbestos consultant in conjunction with a State licensed asbestos abatement contractor(s) as required under EBMUD Standard Construction Specification 02 82 13 (Asbestos Control Activities), with demonstrated experience with similar projects.

The Feasibility Assessment may require performance of a small-scale pilot study to confirm that the selected removal approach can be effectively implemented. A pilot study would likely be needed if the following conditions are present:

- The transite roof panels are in poor condition;
- The integrity of the reservoir roof is not sufficient to prevent asbestos-laden water from leaking into the reservoir basin; and
- The weight bearing capacity of the roof is not sufficient to support mobile containment.

The pilot study would include a small test section of roof, which would be opened under full containment with negative air filtration to assess the condition of the transite roof panels and to evaluate the logistics required to contain, remove and dispose of the panels while minimizing potential asbestos fiber release into the environment. The results from the Feasibility Assessment should be provided to the demolition contractors that are bidding on the transite roof removal work. The asbestos consultant who performed the Feasibility Assessment should review the demolition contractor submittals (i.e., C&DWDP and POA) and monitor the demolition contractor's work to ensure that the work is performed consistent with the Feasibility Assessment.

Consistent with EBMUD Standard Construction Specification 02 82 13 (Asbestos Control Activities), the POA will describe in detail all aspects of the roof removal process, including the use of wet methods, containments, negative pressure containment(s), HEPA air filtration, waste removal and control, personnel decontamination, wastewater capture and

filtration and containment clearance procedures. The POA will include the requirement that the BAAQMD will be notified at least 10-days prior to initiation of the asbestos-containing transite roof removal work and will be offered the opportunity to meet with the EBMUD Engineer, the abatement contractor, and the asbestos abatement oversight consultant team to discuss the Project and the planned asbestos and dust control procedures. The POA will coincide with the requirements of EBMUD Standard Construction Specification 01 35 44 (Environmental Requirements) and will include a detailed asbestos waste disposal and control plan that will describe how the asbestos waste will be managed from the time of generation to disposal at the EBMUD approved asbestos waste disposal facility.

NES recommends that EBMUD contracts independently with a qualified, experienced, and knowledgeable asbestos consultant to provide oversight and support to the asbestos abatement contractor. The presence of an independent oversight consultant that reports directly to EBMUD will ensure that the abatement work is:

- Performed consistent with requirements as stated in the POA;
- Compliant with regulatory requirements; and
- Performed in a manner that is protective of workers and public health.

As required by EBMUD Standard Construction Specification 02 82 13 (Asbestos Control Activities) and consistent with the requirements of EBMUD Standard Construction Specifications 01 35 44 (Environmental Requirements) and 01 35 24 (Project Safety Requirements), the POA will include a detailed description of the air monitoring that will be performed prior to, during, and following completion of the Project. The description will include:

- The types of air samples that will be collected (e.g., baseline, worker exposure, perimeter and ambient air monitoring, soil excavation/trenching air monitoring, etc.);
- The methods that will be used to collect the air samples (e.g., daily airborne asbestos fibers, real-time particulate, etc.);
- The equipment that will be used to collect the samples;
- The locations where the samples will be collected;
- The frequency of sample collection;
- The analytical methods that will be used;
- The analytical timeframe (i.e., sample turnaround time), 72 hours (02 82 13);

- The health-based comparison criteria that will be utilized to assess the significance of the results; and
- Stop work criteria.

Consistent with *NES's* previous recommendation, *NES* recommends that EBMUD contracts independently with a qualified, experienced, and knowledgeable asbestos consultant to implement the air monitoring program during the Project. Utilizing an independent oversight consultant that reports directly to EBMUD will ensure that the air monitoring program is:

- Performed consistent with requirements as stated in the POA;
- Compliant with regulatory requirements; and
- Performed in a manner that is protective of work and public health.

NES recommends that a preliminary health risk assessment be performed to define an appropriate perimeter fence line airborne asbestos fiber action level. The perimeter fence line airborne asbestos fiber action level would take into consideration, the potentially exposed population(s), background airborne asbestos fiber concentrations, exposure duration, and values commonly identified as acceptable risk (e.g., one in one million) and would be sufficiently protective of worker and public health. The perimeter fence line airborne asbestos fiber action level would be used to evaluate the results from the perimeter airborne asbestos fiber results that are sampled over the entire work day and collected daily.

Testing for perimeter fence line airborne asbestos fibers require analysis by a laboratory, which can take up to 24 hours to obtain results, and therefore real-time monitoring for airborne particulates should also be performed as a surrogate for airborne asbestos fiber concentrations. On-site airborne particulate action levels and stop work thresholds should be defined for the real-time airborne particulate monitoring that should be occurring during all site activities where the potential exists for dust generation (e.g., earthwork, transite roof panel removal, etc.). These airborne particulate action levels and stop work thresholds should be established to ensure the perimeter fence line airborne asbestos fiber action level is not exceeded based on the correlation between airborne particulate concentrations and potential asbestos fiber concentrations. The on-site real-time monitoring should immediately identify elevated airborne particulate emissions and a sequence of actions, including a stop work threshold should be defined for implementation based upon the results of the real-time monitoring. The real-time monitoring in conjunction with the established on-site action levels will ensure that airborne particulate emissions are immediately addressed in order to minimize exceedances of the perimeter fence line airborne asbestos fiber action level. Specific on-site actions (e.g., more frequent water application, reduced vehicle speeds on site,

increased HEPA filtration for the containment structure(s), etc.) would be defined in the air monitoring plan that would be implemented if the results from the perimeter fence line airborne asbestos fiber air monitoring begin to approach or exceed the fence line action level.

In the event that the perimeter fence line airborne asbestos concentrations approach the defined fence line airborne asbestos fiber action level (even after all other asbestos control activities and on-site actions have been implemented), the asbestos oversight consultant should identify the causes(s) for the increase in asbestos fiber concentrations and then identify supplemental asbestos control activities.

Through the use of real time airborne particulate monitors and establishment of action levels and stop work thresholds, potential asbestos fiber releases should be identified and rectified quickly, thereby minimizing the potential for offsite migration of asbestos fibers to exceed the established perimeter fence line airborne asbestos fiber action level. The results from the perimeter airborne asbestos fiber samples should be continually compared with the results of the real time airborne particulate monitoring results as an ongoing means of correlating the measured airborne particulate concentrations with airborne asbestos fiber concentrations at the site perimeter.

Procedure 711, Hazardous Waste Removal

This procedure defines hazardous waste and establishes removal responsibilities for hazardous wastes generated at EBMUD facilities. This procedure coincides with the requirements of EBMUD Standard Construction Specifications 01 35 44 (Environmental Requirements) and 02 82 13 (Asbestos Control Activities). Asbestos containing wastes will be managed consistent with the requirements as defined in the C&DWDP 01 35 44 (Environmental Requirements) and the POA that is required in 02 82 13 (Asbestos Control Activities). *NES* does not have any recommendations for modifications to this SP&P as it relates to improving protection of worker or public safety.

Trench Spoils Field Management Practices

The Trench Spoils Field Management Practices (TSFMP) requires that sampling be performed for jobs in which evidence of contamination has been found during excavation work. The purpose of the sampling is to minimize worker exposures to soil contaminants and to ensure that the contaminated soil is disposed of properly. Based upon the historical information pertaining to asbestos contamination affecting Project soils, the TSFMP requires that Project soils be sampled for asbestos contamination. *NES* recommends that Project soils be sampled to determine asbestos fiber concentrations both before and following completion of the asbestos containing transite roof panel removal, prior to beginning earthwork.

The purpose of the soil sampling will be to determine if soils on the Project site are contaminated with asbestos fibers at concentrations that either define the soil as hazardous waste (i.e., greater than 1 percent asbestos) or identify the soils as exceeding the California Air Resources Board (CARB) Asbestos Airborne Toxic Control Measure (ATCM) for surfacing applications of 0.25 percent as determined by Polarized Light Microscopy (PLM). The sampling would be performed prior to initiation of the Project and soils that are determined to be hazardous waste or exceed the CARB ATCM would be removed from the site. The POA as required in EBMUD Standard Construction Specification 02 82 13 (Asbestos Control Activities) will contain additional elements to address handling and storage of asbestos-containing soils, the use of wet methods, soil stabilizers, and/or tarping to suppress dust and asbestos fiber emissions, and asbestos air monitoring criteria. If asbestos contamination is identified in Project soils, *NES* recommends that perimeter and worker exposure asbestos air monitoring be performed when earthwork is occurring at the site.