

File No. 091325

Committee Item No. 2
Board Item No. _____

COMMITTEE/BOARD OF SUPERVISORS AGENDA PACKET CONTENTS LIST

Committee BUDGET AND FINANCE

Date 12/9/09

Board of Supervisors Meeting

Date _____

Cmte Board

- Motion
- Resolution
- Ordinance
- Legislative Digest
- Budget Analyst Report
- Legislative Analyst Report
- Introduction Form (for hearings)
- Department/Agency Cover Letter and/or Report
- MOU
- Grant Information Form
- Grant Budget
- Subcontract Budget
- Contract/Agreement
- Award Letter
- Application
- Public Correspondence

OTHER

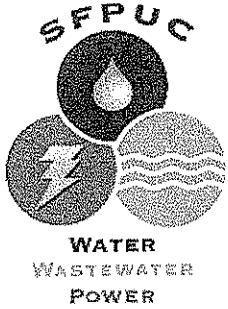
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- Attachment A (CEQA Findings, etc.)
- _____
- _____
- _____
- _____

Completed by: Gail Johnson
Completed by: _____

Date 12/4/09
Date _____

An asterisked item represents the cover sheet to a document that exceeds 25 pages. The complete document is in the file.



SAN FRANCISCO PUBLIC UTILITIES COMMISSION

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November 13, 2009

file 091325

Angela Calvillo
Clerk of the Board of Supervisors
1 Dr. Carlton B. Goodlett Place
City Hall, Room 244
San Francisco, CA 94102

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GENERAL MANAGER

**Subject: Water System Improvement Program (WSIP)
Release of Reserve for \$256,318,678**

Dear Ms. Calvillo:

I would like to request your assistance to have calendared a release of reserve on the WSIP Project CUW359 – New Irvington Tunnel.

As part of the \$1.9 billion WSIP Supplemental Appropriation, new funding for projects exceeding \$100 million was placed on Board of Supervisors reserve pending California Environmental Quality Act (CEQA) approval. Funding is needed for awarding the construction contracts for the New Irvington Tunnel.

This request accompanies a Board's Resolution adopting findings under the California Environmental Quality Act (CEQA) related to the New Irvington Tunnel Project.

Regards,
[Signature]

Michael Carlin
Deputy General Manager



CITY AND COUNTY



OF SAN FRANCISCO

BOARD OF SUPERVISORS

BUDGET ANALYST

1390 Market Street, Suite 1025, San Francisco, CA 94102 (415) 554-7642
FAX (415) 252-0461

December 3, 2009

TO: Budget and Finance Committee

FROM: Budget Analyst

SUBJECT: December 9, 2009 Budget and Finance Committee Meeting

Items 2 and 3- Files 09-1325 and 09-1326

Department: Public Utilities Commission (PUC)

Items: File 09-1325: Request to release \$256,318,678 previously placed on reserve by the Board of Supervisors for the construction of the New Irvington Tunnel Project, one of 85 projects included in the PUC's Water System Improvement Program (WSIP)¹.

File 09-1326: Resolution adopting findings under the California Environmental Quality Act (CEQA), CEQA Guidelines and San Francisco Administrative Code Chapter 31, including the adoption of a mitigation monitoring and reporting program, related to the funding of the New Irvington Tunnel Project, and directing the Clerk of the Board of Supervisors to notify the Controller of this action.

Amount: \$256,318,678

Source of Funds: Proceeds from the sale of Water Revenue Bonds, previously appropriated by the Board of Supervisors to the PUC in the amount of \$1,923,629,197. Of that amount, \$258,318,678 was allocated to the New Irvington

¹ Propositions A and E, which were approved by the San Francisco voters on November 4, 2002 authorized the issuance of Water Revenue Bonds to finance the PUC's \$4,585,556,000 WSIP, consisting of 85 separate projects designed to provide increased water delivery and seismic reliability throughout the Hetch-Hetchy water system.

Tunnel Project and placed on reserve². On January 28, 2009, the Board of Supervisors released \$2,000,000 from that reserve, such that \$256,318,678 remains on reserve.

Background:

According to Mr. Carlos Jacobo, Budget Director at the PUC, the existing Irvington Tunnel connects the water collected from the Sierra Nevada mountains and the Alameda Creek Watershed to the Bay Area's water distribution pipelines. The existing Irvington Tunnel was completed in 1930 and has served a steadily increasing number of water customers. As a result, the Irvington Tunnel cannot be taken out of service for repairs or maintenance without impacting the water supply to existing customers. In addition, according to Mr. Jacobo, the eastern end of the Irvington Tunnel is within 2,000 feet of the Calaveras Fault, such that in the event of a major earthquake along the Calaveras Fault or any of the smaller nearby faults, significant structural damage to the existing Tunnel could occur.

The proposed New Irvington Tunnel Project would (a) construct a second Irvington Tunnel approximately 12 feet in diameter, 30 to 700 feet below ground, and 3.5 miles long, extending west from the Alameda West Portal to the Irvington Portal in the City of Fremont, and (b) replace the existing Alameda West and Irvington Portals with new, more seismically reliable portals³. The New Irvington Tunnel would be parallel to the existing horseshoe-shaped Irvington Tunnel, separated by approximately 100 to 700 feet. According to Mr. Jacobo, the New Irvington Tunnel would allow the PUC to shut down and repair the existing Irvington Tunnel and greatly improve the seismic reliability of this section of the Hetch Hetchy Water System.

The total estimated cost of the New Irvington Tunnel Project is \$337,703,984. Construction of the Project is anticipated to begin in May of 2010 and be completed within four years, or by approximately March of 2014. Table 1 below summarizes the New Irvington Tunnel Project funding plan, based on data provided by Mr. Jacobo.

² On December 16, 2008, the Board of Supervisors reserved funds for all WSIP projects with appropriations greater than \$100,000,000 (File 08-1453).

³ A portal is the structure at the upstream or downstream end of a tunnel.

Table 1: New Irvington Tunnel Project Funding Plan

All Appropriations Approved by the Board of Supervisors Prior to December 16, 2008	\$31,654,499
Appropriated and Reserved on December 16, 2008 by the Board of Supervisors (File 08-1453)	258,318,678
Anticipated March, 2010 Appropriation Request, Subject to Board of Supervisors Approval	47,730,807
Total Project Cost	\$337,703,984

As shown in Table 1 above, on December 16, 2008, the Board of Supervisors appropriated and placed on reserve \$258,318,678 (File 08-1453) for the New Irvington Tunnel Project.

On January 28, 2009, the Board of Supervisors released \$2,000,000 of the previously appropriated \$258,318,678, (File 08-1222), to fund initial costs for the New Irvington Tunnel Project, including (a) design consultants, (b) environmental compliance consultants, (c) construction management consultants, and (d) in-house PUC staff costs, such that \$256,318,678 remains on reserve (\$258,318,678 less \$2,000,000) for this Project.

As also shown in Table 1 above, Mr. Jacobo anticipates that in March of 2010 the PUC will request an appropriation for the remaining \$47,730,807 needed to complete the construction funding for the New Irvington Tunnel Project, in combination with funding required for other WSIP projects.

Description:

The PUC is now requesting that the Board of Supervisors release (File 09-1325) the remaining \$256,318,678 on reserve to partially fund the construction of the New Irvington Tunnel Project. Table 2 below shows the PUC's anticipated expenditure plan for the \$256,318,678 being requested for release from reserve and the \$47,730,807 in anticipated future appropriations.

Table 2: New Irvington Tunnel Expenditure Plan

Cost Category	Requested Release of Reserve	Future Appropriations	Total
Construction Management ⁴	\$1,000,000	\$18,316,000	\$19,316,000
Construction	253,000,000	28,858,000	281,858,000
Construction Close-Out	0	390,000	390,000
Administrative City Staff	2,318,678	166,807	2,485,485
Total	\$256,318,678	\$47,730,807	\$304,049,485

In August of 2009, the Board of Supervisors approved a \$15,000,000 construction management agreement with Hatch Mott MacDonald for the New Irvington Tunnel project (File 09-0869). Mr. Bajwa Surinderjeet of the PUC advises that the \$1,000,000 requested to be released from reserve for construction management would be used to fund ongoing preliminary construction management contractor services under the previously approved Hatch Mott McDonald contract. Mr. Surinderjeet advises that the requested \$2,318,678 to be released for City staff costs include an estimated: (a) \$1,300,000 for PUC project management, (b) \$300,000 for project funding controls, cost estimating, (c) \$300,000 for City Attorney legal services, and (d) \$418,678 for City security and operational support for the project.

The PUC anticipates (a) issuing a competitive request for construction bids in mid-December, 2009, and (b) awarding a construction contract, in the amount of an estimated \$281,858,000, by April of 2010. The Budget Analyst notes this construction contract would not be subject to Board of Supervisors approval because the PUC is authorized to award construction contracts in any amount without Board of Supervisors approval, pursuant to Section 9.118(b) of the San Francisco Charter.

The PUC is also requesting the Board of Supervisors approval of the proposed resolution to adopt the findings included in the CEQA required environmental report for the New Irvington Tunnel Project (File 09-1326).

⁴ The total construction management costs of \$19,316,000 shown in Table 2 includes (a) \$13,000,000 for the remaining costs for this construction management agreement (\$15,000,000 total construction management agreement less \$2,000,000 previously appropriated), (b) \$2,500,000 for design and engineering support services agreement, and (c) an estimated \$3,816,000 for City construction management and related engineering support.

According to Mr. Jacobo, the San Francisco Planning Commission approved the CEQA required environmental report on November 5, 2009, which identifies project modifications necessary to mitigate the environmental impact of the New Irvington Tunnel Project.

Mr. Jacobo advises that environmental mitigation work and project modifications required by the environmental permits are not anticipated to alter the estimated total project cost of \$337,703,984 (see Table 1 above) or the estimated project completion date of March of 2014. The proposed resolution would also require the Clerk of the Board to notify the Controller that the Board of Supervisors approved the proposed resolution because all WSIP project funds previously appropriated were placed on Controller's reserve, pending the Board of Supervisors' adoption of the relevant CEQA report.

Comment:

As noted above, on December 16, 2008, the Board of Supervisors placed on reserve all WSIP projects over \$100,000,000.

The Budget Analyst notes that when the subject funds were placed on reserve approximately one year ago, (a) the required CEQA reports were not completed, (b) the New Irvington Tunnel Project was estimated to cost a total of \$337,161,000 and (c) the Project was anticipated to be completed by March of 2014. As discussed above, (a) approval of the proposed resolution (File 09-1326) would adopt environmental findings required by CEQA, (b) the New Irvington Tunnel Project is still scheduled to be completed by March of 2014, and (c) the Project is currently estimated to cost \$337,703,984, an increase of \$572,984, or less than 0.2 percent.

Recommendations:

1. Approve the requested release of reserved funds (File 09-1325).
2. Approve the proposed resolution adopting environmental findings under CEQA (File 09-1326).

ATTACHMENT A

NEW IRVINGTON TUNNEL PROJECT

CALIFORNIA ENVIRONMENTAL QUALITY ACT FINDINGS: FINDINGS OF FACT, EVALUATION OF MITIGATION MEASURES AND ALTERNATIVES, AND STATEMENT OF OVERRIDING CONSIDERATIONS

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

In determining to approve the New Irvington Tunnel Project ("Project") described in Section I, Project Description below, the San Francisco Public Utilities Commission ("SFPUC") makes and adopts the following findings of fact and decisions regarding mitigation measures and alternatives, and adopts the statement of overriding considerations, based on substantial evidence in the whole record of this proceeding and under the California Environmental Quality Act ("CEQA"), California Public Resources Code Sections 21000 et seq., particularly Sections 21081 and 21081.5, the Guidelines for Implementation of CEQA ("CEQA Guidelines"), 14 California Code of Regulations Sections 15000 et seq., particularly Sections 15091 through 15093, and Chapter 31 of the San Francisco Administration Code.

This document is organized as follows:

Section I provides a description of the Project proposed for adoption, the environmental review process for the Project, the approval actions to be taken and the location of records;

Section II identifies the impacts found not to be significant that do not require mitigation;

Section III identifies potentially significant impacts that can be avoided or reduced to less-than-significant levels through mitigation and describes the disposition of the mitigation measures;

Section IV identifies significant impacts that cannot be avoided or reduced to less-than-significant levels and describes any applicable mitigation measures as well as the disposition of the mitigation measures;

Section V evaluates the different Project alternatives and the economic, legal, social, technological, and other considerations that support approval of the Project and the rejection of the alternatives, or elements thereof, analyzed; and

Section VI presents a statement of overriding considerations setting forth specific reasons in support of the Commission's actions and its rejection of the alternatives not incorporated into the Project.

The Mitigation Monitoring and Reporting Program ("MMRP") for the mitigation measures that have been proposed for adoption is attached with these findings as **Attachment B to Resolution No. 09-0190**. The MMRP is required by CEQA Section 21081.6 and CEQA Guidelines Section 15091. Attachment B provides a table setting forth each mitigation measure listed in the Final Environmental Impact Report for the Project ("Final EIR") that is required to reduce or avoid a significant adverse impact. Attachment B also specifies the agency responsible for

for implementation of each measure and establishes monitoring actions and a monitoring schedule. The full text of the mitigation measures is set forth in Attachment B.

These findings are based upon substantial evidence in the entire record before the Commission. The references set forth in these findings to certain pages or sections of the Draft Environmental Impact Report (“Draft EIR” or “DEIR”) or the Comments and Responses document (“C&R”) in the Final EIR are for ease of reference and are not intended to provide an exhaustive list of the evidence relied upon for these findings.

I. APPROVAL OF THE PROJECT

A. Project Description

By this action, the SFPUC adopts and implements the Project identified in the Final EIR to construct and operate a new 3.5-mile water transmission tunnel, including new tunnel portal structures and associated facilities at each end in the City of Fremont to the west, and in the Sunol Valley area of unincorporated Alameda County to the east. The new tunnel would approximately parallel the SFPUC’s existing Irvington Tunnel and provide a critical redundant regional water transmission connection between the SFPUC’s Coast Range Tunnel and Alameda Siphons (water pipelines) from the east in the Sunol Valley and west to the Bay Division Pipelines (BDPLs) system¹ in Fremont. Surface activities associated with project construction would be conducted primarily on SFPUC property; a few of the temporary construction staging areas would be established on private property with landowner approval. The new tunnel alignment, which would run beneath land owned by private and public property owners, would be constructed within the SFPUC’s original easement obtained for the existing tunnel, which reserves the right to install a second tunnel (SFPUC, 2005).

Key features of the proposed Project include:

- A redundant, seismically robust water transmission tunnel with an internal diameter of 8.5 to 10.5 feet and a reinforced concrete and steel liner with a projected 100 year lifetime;
- Buried portal structures at each end of the tunnel to securely house the tunnel ends and associated electrical and water quality equipment;
- Pipelines connections from the new tunnel to the existing Alameda Siphons and Bay Division pipelines;
- Encasement of the existing Irvington Tunnel portals for improved security; and
- Replacement of the existing bridges over Alameda Creek with new bridges that reduce encroachment into the creek channel and banks.

¹ From the Irvington Portal, the SFPUC’s water conveyance system is divided into four existing pipelines that transmit water to the San Francisco Peninsula. BDPL Nos. 1 and 2 convey water across San Francisco Bay at the Dumbarton Strait, whereas Nos. 3 and 4 convey water around the southern end of the Bay and then converge with Nos. 1 and 2 in San Mateo County.

B. Project Objectives

The existing Irvington Tunnel provides the only link in the SFPUC water supply system between the Alameda Siphons in Sunol Valley and the Bay Division Pipelines (BDPL) in Fremont. Built between 1928 and 1931, the existing Irvington Tunnel has served a steadily increasing number of Bay Area residents. Inspections of the tunnel were intended to be conducted every 5 to 10 years (SFPUC, 2005), however; because of current ongoing demand for water, with no alternative tunnel, the tunnel cannot be taken out of service long enough for inspection without causing an unacceptable interruption of water supply. The most recent inspection occurred in December 1966.

The existing and proposed new tunnels are proximal to the active Calaveras and Hayward Faults at their west and east ends, respectively; the San Andreas Fault; and intercept at least four inactive faults. Up to 6 inches of co-seismic offset could occur on these inactive faults during large seismic events on these nearby active faults. In the event operation of the existing Irvington Tunnel is impaired, such as due to a seismic event or need to conduct major maintenance and/or repair activities, the SFPUC would be severely constrained in its ability to transport water to Bay Area customers.

The objective of the Project is to improve the water delivery and seismic reliability of the water system by allowing the existing Irvington Tunnel to be taken out of service for maintenance while continuing to meet the water supply purchase requests of SFPUC customers through the year 2018. Without the Project, there would be no other source of redundancy to compensate for the loss of the existing tunnel if it were damaged or otherwise taken out of service. Therefore, the Project objectives include:

- Within 24 hours after a major earthquake on the Calaveras fault, allow for reliable transmission of a minimum of 120 million gallons per day (mgd) of water between SFPUC facilities in the Sunol Valley and the BDPL transmission system starting in the City of Fremont.
- Within 24 hours after a major earthquake on the San Andreas or Hayward fault, allow for reliable transmission of a minimum of 229 mgd of water between SFPUC facilities in the Sunol Valley and the BDPL transmission system starting in the City of Fremont.
- Within 30 days after a major earthquake on the Calaveras fault, allow for reliable transmission of a minimum of 160 mgd of water between the Sunol Valley and the BDPL transmission system.
- Increase delivery reliability by providing operational flexibility to allow for planned shutdowns of the existing Irvington Tunnel for inspection, maintenance, and repair while providing for a maximum capacity of 320 mgd monthly average flow.
- Increase delivery reliability by allowing for a planned outage of the existing Irvington Tunnel (e.g., shutdown for maintenance) concurrent with an unplanned outage (e.g., emergency outage due to facility failure) of any of the BDPLs or San Joaquin Pipeline

while delivering a maximum flow of about 246 mgd between the Sunol Valley and BDPL transmission systems during the outages.

- Continue to provide reliable transmission of high-quality water from the Sunol Valley to the BDPL transmission system through a gravity-operated system.
- Ensure that the new and existing facilities meet security requirements.

In addition, the proposed Project is part of the SFPUC's Water System Improvement Program ("WSIP") adopted by this Commission on October 30, 2008 by its Resolution No. 08-0200. The WSIP consists of over 70 local and regional facility improvement projects that would increase the ability of the SFPUC's water supply system to withstand major seismic events and prolonged droughts and to meet estimated water-purchase requests in the service areas through the year 2018. The regional water system consists of water conveyance, treatment, and distribution facilities, and delivers water to retail and wholesale customers. The Project also serves to meet several of the WSIP goals and objectives for the overall regional water system by helping to (1) upgrade the seismic standards of critical facilities to improve seismic reliability and to reduce the system's vulnerability to earthquakes; (2) improve water delivery reliability under a variety of operating conditions by improving overall operations of the system; and (3) contribute to meeting projected water supply demand through 2018 during both non-drought and drought periods.

C. Environmental Review

1. Water System Improvement Program Environmental Impact Report

On October 30, 2008, the SFPUC adopted the regional Water System Improvement Program (the "WSIP") (originally identified as the "Phased WSIP Variant"). The WSIP will improve the regional system with respect to water quality, seismic response, water delivery and water supply to meet water delivery needs in the service area through the year 2018 and establish level of service goals and system performance criteria. The program includes a water supply strategy and modifications to system operations, and construction of a series of facility improvement projects spanning seven counties, including Tuolumne, Stanislaus, San Joaquin, Alameda, Santa Clara, San Mateo and San Francisco. The Project, one of the facility improvement projects adopted as part of the Phased WSIP Variant, is within the Sunol Valley Region (from the Alameda Siphons to the Bay Division Pipelines) of the WSIP and is located in parts of Alameda County and the City of Fremont.

To address the potential environmental effects of the WSIP, the San Francisco Planning Department prepared a Program EIR ("PEIR"), which was certified by the San Francisco Planning Commission on October 30, 2008 (Motion No. 17734). At a project-level of detail, the PEIR evaluated the environmental impacts of the WSIP's water supply strategy and, at a program level of detail, it evaluated the environmental impacts of the WSIP's facility improvement projects. The PEIR contemplated that additional project-level environmental review would be conducted for the facility improvement projects, including the Project.

2. New Irvington Tunnel Project Environmental Impact Report

Pursuant to and in accordance with the requirements of Section 21094 of the Public Resources Code and Section 15152 of the CEQA Guidelines, the Final EIR prepared for the Project described below, tiers from the PEIR and incorporates by reference the relevant analyses of the PEIR with respect to the WSIP's impacts and mitigation measures. The Final EIR summarizes and incorporates by reference the PEIR's analysis of the impacts associated with the WSIP's water supply strategy, including the PEIR analysis and conclusions regarding impacts on the SFPUC's watersheds and growth inducement impacts. The Project was fully analyzed and considered in sufficient detail in the PEIR's analysis of water supply and growth inducement impacts.

In accordance with Sections 15063 and 15082 of the CEQA Guidelines, the San Francisco Planning Department, as lead agency, prepared a Notice of Preparation ("NOP") and conducted scoping meetings for the EIR the San Francisco Planning Department released a Notice of Preparation (NOP) on July 14, 2006, and held a public scoping meeting on August 7, 2006, in the City of Fremont. SFPUC substantially changed some design and construction elements after the release of the July 2006 NOP; a revised NOP was therefore prepared and circulated on March 21, 2008. (See Appendix A of the Draft EIR.)

Both NOPs were distributed to the State Clearinghouse and mailed to: governmental agencies with potential interest, expertise, and/or authority over the project; interested members of the public; and occupants and owners of real property surrounding the project area. The scoping meeting was held at the Fremont Main Library at 2400 Stevenson Boulevard in the City of Fremont. More than 20 people attended. The purpose of the scoping meeting was to present the project description and receive oral comments regarding the scope of the Draft EIR for the proposed project.

MEA received comments between July 14 and August 18, 2006, on the first NOP and from March 31 to April 21, 2008 on the revised NOP. In addition to comments received during scoping meetings, the San Francisco Planning Department received written comments in the form of letters or emails. The comment inventory is included in Appendix B of the Draft EIR. Comments received addressed environmental issues such as aesthetics, biological resources, geology and seismic reliability, hazardous materials, noise and vibration, traffic, hydrology and water quality; air quality, and construction-related impacts. Comments also addressed project description and CEQA alternatives.

SFPUC also held a public outreach meeting in the town of Sunol in May 2007 specifically to discuss groundwater. At both this meeting and the Fremont scoping meeting, residents expressed concern about impacts to groundwater in their wells and water supply springs.

The San Francisco Planning Department then prepared the Draft EIR, which describes the Project and the environmental setting, identifies potential impacts, presents mitigation measures for impacts found to be significant or potentially significant, and evaluates Project Alternatives. The Draft EIR analyzes the impacts associated with each of the key components of the Project, and identifies mitigation measures applicable to reduce impacts found to be significant or potentially significant for each of those key components. It also includes an analysis of four

alternatives to the Project. In assessing construction and operational impacts of the Project, the EIR considers the impact of the Project and the cumulative impacts associated with the proposed Project in combination with other past, present, and future actions with potential for impacts on the same resources.

Each environmental issue presented in the Draft EIR is analyzed with respect to significance criteria that are based on the San Francisco Planning Department Major Environmental Analysis Division ("MEA") guidance regarding the environmental effects to be considered significant. MEA guidance is, in turn, based on CEQA Guidelines Appendix G, with some modifications.

The Draft EIR was circulated to local, state, and federal agencies and to interested organizations and individuals for review and comment on June 1, 2009 for a 45-day public review period, which closed on July 16, 2009. Public hearings on the Draft EIR to accept written or oral comments were held in Fremont on June 24, 2009 and in San Francisco on July 9, 2009. During the public review period, the San Francisco Planning Department received written comments sent through the mail, fax, or email. No comments were received at the San Francisco public hearing. A court reporter was present at each of the public hearings, transcribed the oral comments verbatim, and prepared written transcripts.

The San Francisco Planning Department then prepared the Comments and Responses ("C&R") document, which provides written response to each comment received on the Draft EIR. The C&R was published on October 26, 2009 and included copies of all of the comments received on the Draft EIR and individual responses to those comments. The C&R provided additional, updated information and clarification on issues raised by commenters, as well as SFPUC and Planning Department staff-initiated text changes. The Planning Commission reviewed and considered the Final EIR, which includes the Draft EIR, the C&R document and all Errata Sheets, and all of the supporting information. The Final EIR provided augmented and updated information on many issues presented in the Draft EIR, including (but not limited to) the following topics: project description, traffic, noise and vibration, hydrology and water quality, biological resources, and mitigation measures. In certifying the Final EIR, the Planning Commission determined that the Final EIR does not add significant new information to the Draft EIR that would require recirculation of the EIR under CEQA because the Final EIR contains no information revealing (1) any new significant environmental impact that would result from the Project or from a new mitigation measure proposed to be implemented, (2) any substantial increase in the severity of a previously identified environmental impact, (3) any feasible project alternative or mitigation measure considerably different from others previously analyzed that would clearly lessen the environmental impacts of the Project, but that was rejected by the Project's proponents, or (4) that the Draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded. This Commission concurs in that determination.

The Final EIR fully analyzed the Project proposed for approval herein. No new impacts have been identified that have not been analyzed in the Final EIR.

D. Approval Actions

1. Planning Commission Actions

On November 5, 2009, the Planning Commission certified the Final EIR.

2. Public Utilities Commission Actions

The San Francisco Public Utilities Commission is taking the following actions and approvals to implement the Project:

- Adopt these CEQA findings and the attached Mitigation Monitoring and Reporting Program.
- Approve the Project, as described herein.

3. San Francisco Board of Supervisors Actions

- The Planning Commission's certification of the Final EIR may be appealed to the Board of Supervisors. If appealed, the Board of Supervisors will determine whether to uphold the certification or to remand the Final EIR to the Planning Department for further review.
- The San Francisco Board of Supervisors approves an allocation of bond monies to pay for implementation of the Project.

4. Other—Federal, State, and Local Agencies

Implementation of the Project mitigation measures will involve consultation with or required approvals by other local, state and federal regulatory agencies, including, but not limited to, the following:

- U.S. Army Corps of Engineers
- U.S. Fish & Wildlife Service
- California Department of Transportation
- State Historic Preservation Officer
- Cal/OSHA
- California Department of Fish and Game
- State Water Resources Control Board
- San Francisco Bay Regional Water Quality Control Board
- Various municipal public works departments

To the extent that the identified mitigation measures require consultation or approval by these other agencies, this Commission urges these agencies to assist in implementing, coordinating or approving the mitigation measures, as appropriate to the particular measure.

E. Findings About Significant Environmental Impacts And Mitigation Measures

The following Sections II, III and IV set forth the SFPUC's findings about the Final EIR's determinations regarding significant environmental impacts and the mitigation measures proposed to address them. These findings provide the written analysis and conclusions of the

SFPUC regarding the environmental impacts of the Project and the mitigation measures included as part of the Final EIR and adopted by the SFPUC as part of the Project. To avoid duplication and redundancy, and because the SFPUC agrees with, and hereby adopts, the conclusions in the Final EIR, these findings will not repeat the analysis and conclusions in the Final EIR, but instead incorporate them by reference herein and rely upon them as substantial evidence supporting these findings.

In making these findings, the SFPUC has considered the opinions of SFPUC staff and experts, other agencies and members of the public. The SFPUC finds that the determination of significance thresholds is a judgment decision within the discretion of the City and County of San Francisco; the significance thresholds used in the EIR are supported by substantial evidence in the record, including the expert opinion of the EIR preparers and City staff; and the significance thresholds used in the EIR provide reasonable and appropriate means of assessing the significance of the adverse environmental effects of the Project. Thus, although, as a legal matter, the SFPUC is not bound by the significance determinations in the EIR (see Pub. Resources Code, § 21082.2, subd (e)), the SFPUC finds them persuasive and hereby adopts them as its own.

These findings do not attempt to describe the full analysis of each environmental impact contained in the Final EIR. Instead, a full explanation of these environmental findings and conclusions can be found in the Final EIR and these findings hereby incorporate by reference the discussion and analysis in the Final EIR supporting the determination regarding the Project impacts and mitigation measures designed to address those impacts. In making these findings, the SFPUC ratifies, adopts and incorporates in these findings the determinations and conclusions of the Final EIR relating to environmental impacts and mitigation measures, except to the extent any such determinations and conclusions are specifically and expressly modified by these findings.

As set forth below, the SFPUC adopts and incorporates all of the mitigation measures set forth in the Final EIR and the attached MMRP to substantially lessen or avoid the potentially significant and significant impacts of the Project. The SFPUC intends to adopt each of the mitigation measures proposed in the Final EIR. Accordingly, in the event a mitigation measure recommended in the Final EIR has inadvertently been omitted in these findings or the MMRP, such mitigation measure is hereby adopted and incorporated in the findings below by reference. In addition, in the event the language describing a mitigation measure set forth in these findings or the MMRP fails to accurately reflect the mitigation measures in the Final EIR due to a clerical error, the language of the policies and implementation measures as set forth in the Final EIR shall control. The impact numbers and mitigation measure numbers used in these findings reflect the information contained in the Final EIR.

In the Sections II, III and IV below, the same findings are made for a category of environmental impacts and mitigation measures. Rather than repeat the identical finding dozens of times to address each and every significant effect and mitigation measure, the initial finding obviates the need for such repetition because in no instance is the SFPUC rejecting the conclusions of the Final EIR or the mitigation measures recommended in the Final EIR for the Project.

II. IMPACTS FOUND NOT TO BE SIGNIFICANT AND THUS DO NOT REQUIRE MITIGATION

Under CEQA, no mitigation measures are required for impacts that are less than significant. (Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15126.4, subd. (a)(3), 15091.) Based on the evidence in the whole record of this proceeding, the SFPUC finds that implementation of the Project will not result in any significant impacts in the following areas and that these impact areas therefore do not require mitigation:

Plans and Policies

- Conflict with San Francisco plans and policies or other applicable land use plans and policies

Land Use

- Temporary disruption of land use character.
- Permanent disruption or displacement of existing land uses.

Aesthetics

- Temporary construction-related impacts on scenic vistas.
- Damage scenic resources that contribute to a scenic public setting.
- Permanently degrade the visual character or quality of the site and its surroundings or affect a scenic vista.
- Result in substantial permanent sources of light and glare.

Biology

- Impacts on wildlife migration corridors or established wildlife nursery sites for common species (terrestrial).
- Potential conflict with adopted conservation plans.

Geology, Soils, and Seismicity

- Slope instability during construction.
- Squeezing ground during tunneling.
- Substantial alteration of topography.
- Surface fault rupture.
- Seismically induced groundshaking.
- Seismically induced ground failure, including liquefaction, lateral spreading, and settlement.
- Expansive or corrosive soils.
- Operation period seismically induced landslides or other slope failures.

Hydrology and Water Quality

- Depletion of groundwater resources and impacts to the aquifer.
- Flooding impacts associated with impending or redirecting flood flows.
- Degradation of surface water quality during operation.

Hazards and Hazardous Materials

- Transportation, use, and disposal of hazardous materials and potential accidental hazardous materials releases during construction.
- Gassy conditions in the tunnel encountered during construction.
- Potential emission or use of hazardous materials within one-quarter mile of a school during construction.
- Increased risk of wildland fires during construction.
- Result in inadequate emergency access.
- Handling of hazardous materials and potential accidental hazardous materials releases during operation.
- Gassy conditions in the tunnel encountered during operation and maintenance activities.
- Risk of wildland fires during operation.

Transportation and Circulation

- Temporary increase in traffic congestion on roadways and at intersections due to project-related construction traffic.
- Result in inadequate emergency access.
- Increase in congestion on roadways and at intersections due to project-related operational traffic.

Noise

- Disturbance due to increased noise from ventilation fans at the portal facilities during operation.

Air Quality

- Conflict with implementation of state goals for reducing greenhouse gas emissions relative to construction emissions.
- Operation emissions of criteria pollutants.
- Conflict with implementation of state goal for reducing greenhouse gas emissions relative to operational emissions.

Utilities and Service Systems

- Temporary impacts on the permitted capacity of solid waste landfill sites.
- Temporary conflict with local and state regulations related to solid waste generation.

Public Services

- Increased demand for public services.

Population and Housing

- Temporary population growth inducement.
- Temporary displacement of housing.

Mineral and Energy Resources

- Temporary or permanent loss of availability of known mineral resources.
- Operation-related energy and water use.

III. FINDINGS OF POTENTIALLY SIGNIFICANT IMPACTS THAT CAN BE AVOIDED OR REDUCED TO A LESS-THAN-SIGNIFICANT LEVEL THROUGH MITIGATION AND THE DISPOSITION OF THE MITIGATION MEASURES

CEQA requires agencies to adopt mitigation measures that would avoid or substantially lessen a project's identified significant impacts or potential significant impacts if such measures are feasible (unless mitigation to such levels is achieved through adoption of a project alternative). The findings in this Section III and in Section IV concern mitigation measures set forth in the EIR. These findings discuss mitigation measures as proposed in the EIR and recommended for adoption by the SFPUC, which can be implemented by the SFPUC. The mitigation measures proposed for adoption in this section are the same as the mitigation measures identified in the Final EIR for the Project. The full text of the mitigation measures is contained in the Final EIR and in Attachment B, the Mitigation Monitoring and Reporting Program. The Commission finds that the impacts identified in this section would be reduced to a less-than-significant level through the mitigation measures contained in the Final EIR and set forth in Attachment B.

This Commission recognizes that some of the mitigation measures are partially within the jurisdiction of other agencies, including the U.S. Fish and Wildlife Service, the California Department of Fish and Game, the Regional Water Quality Control Board, and the U.S. Army Corps of Engineers. The Commission urges these agencies to assist in implementing these mitigation measures, and finds that these agencies can and should participate in implementing these mitigation measures.

Impact LU-2: Temporary disruption or displacement of existing land uses during construction

During construction, activities in the Alameda West Portal work area would occur on the northern portion of a privately owned ranch property immediately south of the new Alameda West Portal. Proposed construction activities in Staging Area B would temporarily displace grazing lands and other ranch activities located on private ranch property. Construction activities could impede access to the ranch property from the north and disrupt residents' use of the property (e.g., noise-related speech interference and dust). This would be a significant impact.

The Irvington Tunnel work area abuts a residential neighborhood to the north, west, and south. Construction activities could disrupt residents' use of the property (e.g., noise-related speech interference in backyards and indoor dust). This would be a significant impact.

Land uses in the vicinity above the tunnel alignment could be affected by the temporary lowering of groundwater and affect to water supply wells aquifer during construction. This would be a significant impact.

- *Mitigation Measure TRF-2a: Traffic Control Plan*
- *Mitigation Measure NOI-1: Noise Controls – Noise and Vibration Control Plan*
- *Mitigation Measure NOI-2: Vibration Controls – Noise and Vibration Control Plan*
- *Mitigation Measure AIR-1a: Reduction of Particulate Matter Emissions (BAAQMD Control Measures)*

- *Mitigation Measure AIR-1b: Reduction of Exhaust Emission (BAAQMD Control Measures)*
- *Mitigation Measure AIR-1c: Locating Particulate Matter Sources (Temporary Batch Plants) away from Receptors*
- *Mitigation Measure AIR-2a: Diesel Particulate Matter Reduction (equip all off-road diesel construction equipment with Tier 2 diesel engines as defined in Title 13, CCR, §2485 and Level 3 Diesel Emission Control Strategies as defined in Title 13, CCR, §2700 through 2710)*
- *Mitigation Measure AIR-2b: Diesel Particulate Matter Reduction (Minimum 70 percent DPM abatement efficiency for tunnel ventilation shaft emissions and minimum 90 percent DPM abatement efficiency of diesel tunneling equipment).*
- *Mitigation Measure AIR-2c: Notification of Nearby Receptors*
- *Mitigation Measure HYD-2: Prepare and Implement a Groundwater Management Plan*

Impact AES-3: Temporarily degrade the visual character or quality in and adjacent to the project work areas

The Irvington Tunnel work area abuts a residential neighborhood to the north, west, and south. Staging and construction activities could occur anywhere within the work area boundaries (Figure 3-6). Buildings, fences, and trees would serve to screen much of the work from casual views along Mission Boulevard and points west. However, the temporary changes would be highly apparent to numerous adjacent residents. Due to the number of viewers affected and the proximity and extent of construction activity, this would be a significant impact.

- *Mitigation Measure AES-3: Install Visual Screens During Construction*

Impact CR-1: Impacts on the historical significance of individual facilities or districts resulting from alteration and nearby construction activities

The existing Alameda West Portal includes four historical resources, all of which are existing SFPUC facilities: the manifold (1934/1953), the two valve houses (both 1953), and the overflow shaft (1934). The proposed project would not demolish the existing manifold but it would be encased in a partially buried vault for improved security. Encasing the manifold would not alter the function and design of the portal or its connection to the greater Irvington Tunnel and the building façade would be designed consistent with the existing valve houses to preserve the historic context. The historic valve houses would be relocated approximately 30 feet from their current location to allow encasement of the existing manifold. The valve houses would maintain their integrity as moved properties because they will be located close enough to the manifold to maintain their historic association with the portal area and they will retain their character-defining features, such as the plan, cladding, fenestration, signage, and clay tile roof. The overflow shaft would be raised by approximately 4 feet the overflow shaft but would retain its character-defining features, including its cylindrical form and construction material. Hence these facilities would retain those characteristics that make them eligible as historical resources. However, the project could cause inadvertent damage to the existing manifold and overflow shaft due to heavy machinery use, vibration, and other construction activity nearby required to implement the project and the valve houses could be materially impaired during their relocation. This would be a significant impact.

The existing Irvington Tunnel is an historic resource (1934). Construction of the Project does not entail demolition, relocation, or alteration of the existing Irvington Tunnel; however, construction activities, including use of heavy machinery, vibration, and staging could damage the existing tunnel through destabilization or inadvertent physical contact, which would be considered a significant impact.

The existing Irvington Portal includes three historical resources, all of which are existing SFPUC facilities: the manifold (1934), the South Valve House (1934), and the North Valve House (1935). These resources contribute to the Bay Division Pipeline Nos. 1 and 2 Historic District. The proposed project would not demolish the existing manifold at but it would be encased in a partially buried vault for improved security. Encasing the manifold would not alter the function and design of the portal or its connection to the greater Irvington Tunnel and the building façade would be designed consistent with the existing valve houses to preserve the historic context. One or more small conduits or pipes would be installed in the valve houses that would pierce the exterior walls. This would be a minor change that would not materially impair in an adverse manner these historical resources. However, the project could cause inadvertent damage to the existing manifold and valve houses due to heavy machinery use, vibration, and other construction activity nearby required to implement the project. This would be a significant impact.

- *Mitigation Measure CR1-a: Prepare and Implement a Historical Resources Protection Plan*
- *Mitigation Measure CR1-b: Preconstruction Documentation of Historic Resources and Structural Protection Planning*
- *Mitigation Measure CR1-c: Monitor Disturbance of Historic Resources during Construction*
- *Mitigation Measure CR1-d: Comply with the Secretary of the Interior's Standards for the Repair of Historic Properties and Preserve the Character-Defining Features of Historic Properties*
- *Mitigation Measure NOI-2a: Vibration Controls*

Impact CR-2: Impacts on unknown or known prehistoric and archaeological resources

No known prehistoric or archaeological resources were in the Project area. However, the soils types and geomorphological configuration of the Project area indicate that prehistoric archaeological resources could be buried beneath the surface. Grading and excavations at the work areas have the potential to unearth unknown (i.e., not yet recorded), buried cultural resources. This would be a significant impact if the find is damaged when encountered and/or not appropriately handled.

- *Mitigation Measure CR-2: Accidental Discovery of Archaeological Resources Procedures*

Impact CR-3: Potential disturbance of buried human remains

Human remains have not been identified in the Project area based on a records search, archaeological fieldwork, or through consultation with the NAHC and interested Native

American individuals in Alameda County. However, grading and excavation at the work areas could inadvertently unearth and impact unknown (i.e., not yet recorded), buried human remains associated with unrecorded archaeological deposits. This would be a significant impact if the find is damaged when encountered and/or not appropriately handled.

- *Mitigation Measure CR-3: Preserve Human Remains if Encountered*

Impact PAL-1: Impacts to paleontological resources (Less than Significant with Mitigation at all locations other than tunneling from Irvington Portal; Significant and Unavoidable Impact for initial subsurface tunneling from Irvington Portal using roadheader)

Construction of the proposed project includes subsurface excavation in two stratigraphic units that are highly sensitive for bearing paleontological resources (the Briones Formation and alluvial/fluvial deposits of Pleistocene age), and two stratigraphic units that have an undetermined sensitivity (the Monterey Group and Unnamed Limestone). At each of the work areas, excavation activities could inadvertently unearth and impact unknown (i.e. not yet recorded), buried paleontological resources. This would be a significant impact if an unknown resource is damaged when encountered and/or not appropriately handled. This impact can be reduced to less than significant for each work area through the implementation of mitigation measures except for within the first 50 feet of the tunneling at the Irvington Portal work area (see Section IV below).

- *Mitigation Measure PAL-1a: Provide Paleontological Resources Training to Construction Staff*
- *Mitigation Measure PAL-1b: Conduct Preconstruction Surveys for Significant Paleontological Resources in Areas of Undetermined and High Paleontological Sensitivity*
- *Mitigation Measure PAL-1c: Perform Preconstruction Surface Salvage of Any Significant Paleontological Resources Discovered*
- *Mitigation Measure PAL-1d: Conduct Paleontological Resources Monitoring during Construction in Areas of Undetermined and High Paleontological Sensitivity, as Required*

Impact BIO-1: Impacts on special status species

The project could result in significant impacts to habitats and the special-status species they support, including California tiger salamander, California red-legged frog, foothill yellow-legged frog, western pond turtle, tricolored blackbird, Alameda whipsnake, western burrowing owl, nesting birds, pallid bat, San Francisco dusky-footed woodrat, and callippe silverspot butterfly. The project would not significantly impact San Joaquin kit fox and American badger.

It is expected that groundwater will flow into the tunnel during tunnel excavation, which could cause local groundwater level to be lowered. The EIR concludes that three ponds, two creeks, and six tributaries that may provide breeding and/or foraging and dispersal habitat for special-status species, including California tiger salamander, California red-legged frog, and special-status and migratory birds, may be hydrologically connected to groundwater at locations where groundwater level could be affected. It is possible that these features could shrink, dry up, have

a reduced period of water inundation (hydroperiod), and/or vegetation loss and thereby impact sensitive species. There is also potential for special-status species to be impacted by construction activities at each of the work areas, such as due to erosion and sedimentation or inadvertent spills that could pollute drainages or wetlands, injury or mortality if burrows or individuals are encountered by construction equipment, and temporary and permanent loss of habitat. This would be a significant impact.

- *Mitigation Measure BIO-1a: Prepare and Implement a Groundwater Management Plan*
- *Mitigation Measure BIO-1b: Conduct Mandatory Biological-Resources Awareness Training for All Project Personnel*
- *Mitigation Measure BIO-1c: Minimize Disturbance of Riparian Habitat*
- *Mitigation Measure BIO-1d: Prevent Movement of Specific Species through the Work Areas*
- *Mitigation Measure BIO-1e: Conduct Preconstruction Surveys and Monitor Construction Activities for California Tiger Salamander, California Red-Legged Frog, and Alameda whipsnake*
- *Mitigation Measure BIO-1f: Prepare and Implement a Vegetation Restoration Plan*
- *Mitigation Measure BIO-1g: Compensate for Permanent Loss of Habitat/Sensitive Vegetation Communities*
- *Mitigation Measure BIO-1h: Implement Measures to Avoid and Minimize Impacts on Foothill Yellow-Legged Frogs and Western Pond Turtle*
- *Mitigation Measure BIO-1i: Preconstruction Surveys for Active Burrowing Owl Burrows, and Implement CDFG Guidelines for Burrowing Owl Mitigation, if Necessary*
- *Mitigation Measure BIO-1j: Remove Trees and Shrubs during the Non-Breeding Season for Special-Status Bat and Bird Species, if Feasible (September 1–February 14) or Conduct Nesting Bird Surveys, Roosting Bat Surveys, and Establish No-Disturbance Buffers, as Appropriate*
- *Mitigation Measure BIO-1k: Conduct Preconstruction Surveys for Sensitive Bats and Implement Avoidance and Minimization Measures if Found*
- *Mitigation Measure BIO-1l: Conduct Preconstruction Surveys for Dusky-Footed woodrat and Implement Avoidance and Minimization Measures if Found*
- *Mitigation Measure BIO-1m: Conduct Preconstruction Surveys for Callippe silverspot Butterfly at the Sheridan Valley Work Area and Implement Avoidance and Minimization Measures, Including Construction Monitoring, if Found*
- *Mitigation Measure BIO-3: Minimize Disturbance of Waters of the United States and Waters of the State, Including Wetlands*

Impact BIO-2: Impacts on sensitive natural communities (including oak woodlands)

Sensitive natural communities in the project area include surface drainages and wetlands (see discussion under Impact BIO-3), mixed oak woodland/evergreen forest, mixed oak woodland, and valley oak woodland. These vegetation communities provide habitat for common and special-status species. Loss of these sensitive vegetation communities, though limited in extent, would be a significant impact because of their relative rarity and their value for special status species. The project would result in the temporary loss of approximately 0.1 acre of mixed oak woodland/evergreen forest, 1.0 acre of mixed oak woodland, and 0.5 acre of valley oak woodland and permanent loss of approximately 1.8 acres of mixed oak woodland/evergreen forest where new facilities would be placed at the Alameda West Portal work area. In addition,

it is possible that valley oak woodland may be affected by due to tunnel dewatering if groundwater levels are substantially lowered.

- *Mitigation Measure BIO-1a: Prepare and Implement a Groundwater Management Plan*
- *Mitigation Measure BIO-1b: Conduct Mandatory Biological-Resources Awareness Training for All Project Personnel*
- *Mitigation Measure BIO-1c: Minimize Disturbance of Riparian Habitat*
- *Mitigation Measure BIO-1f: Prepare and Implement a Vegetation Restoration Plan*
- *Mitigation Measure BIO-1g: Compensate for Permanent Loss of Habitat/Sensitive Vegetation Communities*
- *Mitigation Measure BIO-3: Minimize Disturbance of Waters of the United States and Waters of the State, Including Wetlands*

Impact BIO-3: Impacts on federal and state jurisdictional wetlands and waters

The project would result in direct temporary impacts to Alameda Creek and San Antonio Creek due to installation of the temporary bridges and replacement of the existing bridges, Sheridan Creek due to installation of a temporary bridge, and a willow scrub wetland at the Sheridan Valley work area for an access route. In total, approximately 0.06 acre of wetland and 0.27 acre of surface waters would be temporarily impacted and approximately 0.002 acres of surface waters would be permanent impacted. While the EIR describes that a small, 0.02-acre wetland along the access road in the Alameda Portal Work Area would be permanently effected, this feature would be impacted by the approved Alameda Siphons Seismic Reliability Project (SFPUC Resolution No. 090281) before the Project would start and has already been accounted for in the CEQA review and permits obtained for that project. Waters and wetlands could also be impacted due to potential erosion and sedimentation or inadvertent spills given the proximity of construction activities to such features and if groundwater levels are lowered (refer to Impact BIO-1).

- *Mitigation Measure BIO-1a: Prepare and Implement a Groundwater Management Plan*
- *Mitigation Measure BIO-1b: Conduct Mandatory Biological-Resources Awareness Training for All Project Personnel*
- *Mitigation Measure BIO-1c: Minimize Disturbance of Riparian Habitat*
- *Mitigation Measure BIO-1f: Prepare and Implement a Vegetation Restoration Plan*
- *Mitigation Measure BIO-1g: Compensate for Permanent Loss of Habitat/Sensitive Vegetation Communities*
- *Mitigation Measure BIO-3: Minimize Disturbance of Waters of the United States and Waters of the State, Including Wetlands*

Impact BIO-4: Impacts on wildlife migration corridors or established wildlife nursery sites for common species

Activities in and near Alameda Creek and San Antonio Creek in the Sunol Valley have the potential to impact movement of resident rainbow trout and other native fish. Movement of resident trout or other native fish in Alameda Creek and San Antonio Creek could be impeded if the creeks were flowing and fish were present during installation of temporary bridges across the creeks and retrofit of the existing bridges at Alameda Creek. Installation of pilings for the

temporary bridges could also temporarily change hydraulic conditions, potentially affecting fish movement and migration. Construction activities outside of but adjacent to the creeks could impact fish movement due to potential sedimentation and hydraulic changes that could change the creek shape or configuration, including alteration of pools that provide run-up areas for resident trout to get over small gradient barriers. Dewatering of groundwater and discharge to creeks could impact fish movement due to potential scour of creeks or banks that could alter channel conditions, increase turbidity, or alter water temperature that could be a thermal barrier to safe fish passage. This would be a significant impact. Along the tunnel alignment, it is possible that resident rainbow trout or other native fish are present in the perennial reaches of Pirate Creek or Mission Creek. If tunnel dewatering results in lowering of groundwater water levels in these creeks, fish movement could be impacted. This would be a significant impact.

- *Mitigation Measure HYD-1a: Management of Stormwater Discharges*
- *Mitigation Measure HYD-1b: Management of Dewatering Discharges*
- *Mitigation Measure BIO-1b: Conduct Mandatory Biological-Resources Awareness Training for All Project Personnel*
- *Mitigation Measure BIO-1c: Minimize Disturbance of Riparian Habitat*
- *Mitigation Measure BIO-3: Minimize Disturbance of Waters of the United States and Waters of the State, Including Wetlands*
- *Mitigation Measure BIO-4: Design Bridges in Accordance with Guidelines for Fish Passage at Stream Crossings*

Impact BIO-5: Potential conflicts with local policies or ordinances protecting biological resources including tree ordinances

Relevant policies or ordinances protecting biological resources are the Alameda WMP and the Alameda County and City of Fremont tree-preservation ordinances. The project would trim mature native trees in the Alameda County right-of-way along Calaveras Road. Tree removal may also be required within the City of Fremont. Removal of mature native trees without replacement would conflict with the local tree ordinances. The proposed project would not conflict with any other local policies or ordinances protecting biological resources.

- *Mitigation Measure BIO-1f: Prepare and Implement a Vegetation Restoration Plan*
- *Mitigation Measure BIO-5: Avoid and Minimize Impacts on Native Mature Trees*

Impact GEO-2: Erosion during construction and loss of topsoil

Construction activities such as grading and excavation would remove stabilizing vegetation and expose areas of loose soil that, if not properly stabilized, would be subject to soil loss and erosion by wind and stormwater runoff. Newly constructed and compacted engineered slopes can undergo substantial erosion through dispersed sheet flow runoff, and more concentrated runoff can result in the formation of erosion channels and larger gullies, compromising the integrity of the slope and resulting in significant soil loss. This would be a significant impact.

- *Mitigation Measure GEO-2: Salvage Topsoil*
- *Mitigation Measure HYD-1a: Management of Stormwater Discharges*

Impact GEO-4: Subsidence during tunneling

Tunneling projects have the potential to cause subsidence due to the removal of subsurface materials. Settlement occurs when the earth materials above the tunnel lose the capacity to support the overlying weight as the tunneling progresses. Along the project alignment, these conditions may occur in the Sheridan Valley work and near the Vargas work areas. Settlement can damage overlying structures such as homes and other buildings, as well as infrastructure such as roadways and utilities. This would be a significant impact.

- *Mitigation Measure GEO-4: Settlement Monitoring Program*

Impact HYD-1: Impact on water quality due to erosion and sedimentation, inadvertent hazardous materials release, and groundwater discharges during construction

During construction, the project would include earthmoving, construction dewatering, and handling of hazardous materials. These activities could cause erosion and introduce pollutants into runoff and/or surface water bodies, degrading water quality and potentially violating water quality standards. Water quality could be degraded and other users downstream could be affected. Dewatering and discharge of groundwater encountered during excavation would be required in support of general construction activities at each of the work areas to provide safe and dry work areas and during tunnel excavation. Suspended sediment and/or trace amounts of construction-related byproducts (e.g., fuels, lubricants, cement products) could be present in the groundwater to be dewatered and, if discharged directly to creeks or wetlands, could degraded water quality. These would be significant temporary impacts.

- *Mitigation Measure HYD-1a: Management of Stormwater Discharges*
- *Mitigation Measure HYD-1b: Management of Dewatering Discharges*

Impact HYD-2: Temporary depletion of groundwater supplies to water users

During construction of the existing tunnel, groundwater inflows and subsequent dewatering caused the surrounding groundwater levels to be lowered, adversely affecting private water supply wells. Modern tunneling methods such as probing ahead to identify upcoming conditions, injection grouting, shotcrete, and contact grouting during tunnel excavation and installation of a water-limiting final lining are expected to reduce potential affects to groundwater levels. However, the potential remains that groundwater levels could be lowered during construction and for several years after construction is complete, potentially adversely affecting private water supply wells that intercept the groundwater table near the tunnel alignment. This would be a significant impact.

- *Mitigation Measure HYD-2: Prepare and Implement a Groundwater Management Plan*

Impact HYD-4: Flooding impacts associated with dewatering discharges

The project would generate groundwater that would be dewatered from excavations and discharged to upland areas, surface drainages, or storm drains at each of the work areas. It is

possible that these discharges could exceed the capacity of the receiving drainages and storm drains and cause localized flooding during storm events. This would be a significant impact.

- *Mitigation Measure HYD-4: Monitor Dewatering Discharges and Avoid Flooding at Storm Drains*

Impact HYD-7: Degradation of water quality, including erosion and flooding, due to alteration of drainage patterns or an increase in impervious surfaces

The spoils berms would be located on the extrapolated fringe of the 100-year floodplain. During an extreme flooding event, the spoils piles may come into contact with flood waters and could block existing surface and stormwater flow from along Calaveras Road and the hills to the east toward Alameda Creek, causing localized flooding and potential erosion. This would be a significant impact.

The majority of the proposed project would be located underground, except for the new permanent access roads, portal buildings, paved valve lots, and other ancillary facilities that would result in a minor increase in impervious surfaces (approximately 0.7 acre at the Alameda West Portal work area and approximately 0.2 acre at the Irvington Portal work area). Impervious surfaces prevent natural absorption and pollutant filtration of storm runoff compared to natural vegetated pervious ground cover, and can result in greater volume and velocity of runoff and potentially increased offsite erosion or flooding. This would be a significant impact.

- *Mitigation Measure HYD-7a: Post Construction - Treat Stormwater Prior to Discharge - Drainage through spoils piles*
- *Measure HYD-7b: Post Construction - Treat Stormwater Prior to Discharge - Incorporate low impact design methods*

Impact HAZ-2: Potential exposure to hazardous materials encountered during construction

During construction, the presence of agricultural chemicals, lead, or copper residues due to historic land uses, existing old buildings, and proximity to I-680 could pose a health risk to construction workers who come into direct contact with the contaminated soils or groundwater during construction. This would be a significant impact.

- *Mitigation Measure HAZ-2a: Soil Testing (pre-construction)*
- *Mitigation Measure HAZ-2b: Prepare and implement a Construction Risk and Spoils Management Plan (CRSMP)*
- *Mitigation Measure HAZ-2c: Hazardous Building Materials survey*

Impact TRF-2: Construction traffic could increase traffic safety hazards

During construction, there would be a substantial increase in vehicles using public roadways that could increase traffic safety hazards due to potential conflicts between construction vehicles (with slower speeds and wider turning radii than autos) and vehicles, bicyclists, and pedestrians using the roadways. In addition, the project could accelerate deterioration of the roadway

pavement, potentially causing rough surfaces and/or potholes that could be hazardous. This would be a significant impact.

- *Mitigation Measure TRF-2a: Traffic Control Plan Measures*
- *Mitigation Measure TRF-2b: Construction Traffic Safety Hazards*

Impact NOI-1: Temporary disturbance from increased noise during construction

During construction, activities would generate noise from tunnel excavation, grading, compaction, and trucks hauling spoils or materials. Controlled detonation near the surface, if needed, would be audible to adjacent receptors and would resemble the sound of short thunderclaps. Due to the proximity of residences near the Alameda West Portal, Sheridan Valley, Vargas, and Irvington Portal work areas, noise levels could exceed the noise thresholds established for the project (derived from local noise ordinances and the PEIR). The project description includes installation of soundwalls at the Alameda West Portal, Vargas, and Irvington Portal work areas. However due to lack of specificity of the soundwall design at this stage and anticipated need for noise control measures in addition to the soundwalls, there could still be a significant impact.

- *Mitigation Measure NOI-1a: Noise Controls - Noise and Vibration Control Plan*
- *Mitigation Measure NOI-1b: Noise Controls – Landowner Notifications*

Impact NOI-2: Disturbance to people and/or structures due to vibration and groundborne noise during construction

During construction, nearby sensitive receptors may experience an increase in vibration or groundborne noise from controlled detonations, operation of tunneling equipment, and/or the operation and movement of heavy construction equipment, including trucks transporting equipment, materials, and spoils. These activities could generate perceptible vibration at the ground surface that result in annoyance, speech or sleep interference, building cosmetic damage, or groundborne noise in nearby buildings that could result in sleep interference. This would be a significant impact.

- *Mitigation Measure NOI-2a: Vibration Controls - Noise and Vibration Control Plan*
- *Mitigation Measure NOI-2b: Vibration Controls – Residential Preconstruction Crack Survey*
- *Mitigation Measure NOI-2c: Vibration Controls – Limit Controlled Detonations During Daytime Hours (Unless documentation is provide that controlled detonations at night would not exceed thresholds)*
- *Mitigation Measure NOI-2d: Vibration Controls – Limit Ground Surface Vibration to 0.5 in/sec PPV*
- *Mitigation Measure NOI-2e: Vibration Controls – Provision of Alternate Sleeping Accommodations*
- *Mitigation Measure NOI-2f: Vibration Controls – Notifications of Impact Pile Driving or Vibratory Compactor Activities*
- *Mitigation Measure NOI-2g: Vibration Controls – Prohibit Vibratory Pile Driving within 200 feet of Residences*

Impact AIR-1: Construction emission of criteria pollutants

During construction, activities would result in significant emissions of criteria pollutants PM₁₀ and PM_{2.5} in the form of particulates from earthmoving activities potentially contributing to existing violations of the PM₁₀ air quality standard in the San Francisco Bay Area Air Basin. PM₁₀ and PM_{2.5}, CO, and the ozone precursors ROG and NO_x would be produced in exhaust from stationary and off-road equipment and from on-road trucks. Use of temporary concrete batch plants and grout mixing and pumping plants at the Irvington and Alameda West portals would also result in the emission of PM₁₀ or PM_{2.5} in the form of dust. The motors used to power these plants would be electrical and would not result in exhaust-related emissions. Because tunneling conditions are typically damp or wet, and because worker health and safety considerations would include dust suppression during tunneling activities, dust particles from tunneling would not contribute to particulate matter air quality impacts outside the tunnel. The air quality impact from construction activities would be limited to the approximately 3.5-year duration of project construction. This would be a significant impact.

- *Mitigation Measure AIR-1a: Reduction of Particulate Matter Emissions (BAAQMD Control Measures)*
- *Mitigation Measure AIR-1b: Reduction of Exhaust Emission (BAAQMD Control Measures)*
- *Mitigation Measure AIR-1c: Locating Particulate Matter Sources (Temporary Batch Plants) away from Receptors*

Impact AIR-2: Exposure to diesel particulate matter (DPM) during construction

During construction, nearby sensitive receptors may be exposed to DPM from off-road and stationary equipment, on-road trucks used to haul soil or muck and deliver equipment, and diesel-fueled vehicles driven by workers. Diesel particulate matter has been defined as a toxic air contaminant (TAC) by both United States Environmental Protection Agency and the California Air Resources Board. A Health Risk Screening Analysis (HRSA) was performed to quantify project-generated DPM and estimate the excess cancer and non-cancer health risk to the nearest sensitive receptors due to exposure. The nearest sensitive receptors are the residences near the construction work areas and the students at Mission San Jose High School, William Hopkins Junior High School, and Joshua Chadborne Elementary School, located southwest of the Irvington Portal work area in Fremont. The screening concluded that, with mitigation, the potential excess cancer risk from diesel PM₁₀ emissions at the nearest receptors would be equal to or less than the threshold of 1×10^{-5} and that the non-cancer HI would be less than the significance threshold of one for the nearest sensitive receptor (BAAQMD, 1999). To reduce the potential impact from DPM to a less-than-significant level, the modeling assumptions have been incorporated into Mitigation Measures AIR-2a and AIR-2b.

- *Mitigation Measure AIR-1b: Reduction of Exhaust Emission (BAAQMD Control Measures)*
- *Mitigation Measure AIR-2a: Diesel Particulate Matter Reduction (equip all off-road diesel construction equipment with Tier 2 diesel engines as defined in Title 13, CCR, §2485 and Level 3 Diesel Emission Control Strategies as defined in Title 13, CCR, §2700 through 2710)*

- *Mitigation Measure AIR-2b: Diesel Particulate Matter Reduction (Minimum 70 percent DPM abatement efficiency for tunnel ventilation shaft emissions and minimum 90 percent DPM abatement efficiency of diesel tunneling equipment).*
- *Mitigation Measures AIR-2d: Construction Vehicle Maintenance Requirements*
- *Mitigation Measure AIR-2c: Notification of Nearby Receptors*

Impact AIR-3: Exposure to odor-causing emissions associated with tunneling

Soil excavated during construction could contain organic compounds; the anaerobic processes of decomposing organic material in soil can generate methane and hydrogen sulfide gases. Exploratory borings conducted along the tunnel did not detect soils containing significant organic material (URS Corporation, 2008a, 2008b). However, should odors related to organic material occur, and become a nuisance odor problem (i.e., nuisance odors detected by workers or odor complaints are received), this would be a significant impact.

- *Mitigation Measure AIR-3: Reduction in Odor Emissions from Tunnel (add water scrubbers to the tunnel ventilation system)*

Impact UTL-3 Temporary disruption to regional and local utilities

During construction, activities could inadvertently conflict with existing underground water service, electrical service, or utility lines if any were encountered and physically damaged during construction, resulting in temporary service disruptions. The SFPUC would be required to comply with the California Occupational Safety and Health Administration Construction Safety Orders for excavation and trenching, and with the utility notification requirements under Article 2 of the California Government Code Section 4216, reducing the potential for temporary service disruptions. If service were disrupted, this would be a significant impact.

- *Mitigation Measure UTL-3: Coordinate Final Construction Plans with Affected Utilities (prior to construction)*

Impact MIN-2: Construction-related energy and water use

The project would cause groundwater to flow into the tunnel during construction, potentially affecting local groundwater levels and property owners in the area that rely on wells and springs. Therefore, the project would have a significant impact on water resources.

- *Mitigation Measure HYD-2: Prepare and Implement a Groundwater Management Plan*

Impact AGR-1: Temporary conflicts with established agricultural resources

At the Alameda West Portal work area, Staging Area C just west of Calaveras Road is mapped as Unique Farmland (CDC, 2006b) and about 7 of the 11 acres of Staging Area B is on property under a Williamson Act contract and zoned A-2 (Agricultural District). The temporary uses and activities associated with the staging area are not consistent with the existing nursery use and Williamson Act contract; however, the areas would be subsequently restored to agricultural use

after construction. Grading and use of these areas for construction staging would temporarily displace existing agricultural uses and, if not appropriately restored (i.e., decompacted and topsoil restored), could indefinitely displace these uses. This would be a significant impact.

- *Mitigation Measure GEO-2: Salvage Topsoil*

Impact AGR-2: Conversion of farmland to non-agricultural uses

Spoils placed along Calaveras Road at Spoils Site South would permanently occupy approximately 4 acres of Unique Farmland, thereby converting the area to non-agricultural use, which would be a significant impact. This would be a significant impact. (Note: following construction, the SFPUC or other entities may reuse these spoils, thereby facilitating future use of this area for agricultural purposes; however, such reuse is speculative and consequently spoils placement is considered permanent).

- *Mitigation Measure AGR-2: land set-aside or contribution to a local land conservancy*

Impact REC-1: Temporary disruption of access to existing recreational uses during construction

The project could disrupt vehicle access to the East Bay Regional Park District's Sunol-Ohlone Regional Wilderness due to increased construction traffic on Calaveras Road to the Alameda West Portal work area. Recreational bicycling could also be affected by increased construction traffic on this roadway. This would be a significant impact.

- *Mitigation Measure TRF-2a: Traffic Control Plan*

Impact CUM-1: Cumulative traffic increases on local and regional roads

It is possible that the SFPUC's approved Bay Division Pipeline No. 5 Project (Resolution No. 09-0120) would install the pipeline across Mission Boulevard at the same time as intense traffic-generating activity for the Project is occurring at the Irvington Portal work area. This would be a potentially significant cumulative impact on traffic and circulation. Although not found to be a significant issue at the Alameda West Portal work area, there would also be more than one SFPUC project underway at that location as well. The below mitigation measure would generally apply to the entire project.

- *Mitigation Measure CUM-1: Coordination of Traffic Control Measures with Other SFPUC Projects*

Cumulative Impact on Aesthetics

The Project would contribute to a cumulative impact on aesthetics through the removal of vegetation along Calaveras Road and at the Alameda West Portal, where the vegetation contributes to the scenic character of the Sunol Valley hills. The project would regrade and revegetate the site to its general pre-construction condition; however, the potential cumulative

impact on aesthetics due to loss of vegetation in this part of the Sunol Valley is considered significant and the project's contribution cumulatively considerable.

- *Mitigation Measure BIO-1f: Prepare and Implement a Vegetation Restoration Plan*
- *Mitigation Measure BIO-5: Avoid and Minimize Impacts on Native Mature Trees*

Cumulative Impact on Cultural Resources

The Project would contribute considerably to a cumulative impact to the Alameda West Portal, an historic resource. The Project would contribute considerably to a cumulative impact to contributors to the BDPL Nos. 1 and 2 Historic District, including BDPL Nos. 1 and 2 and the Irvington Portal valve houses. The Project would contribute to a cumulative impact to previously undiscovered archeological and paleontological resources, as well as human remains.

- *Mitigation Measure CR1-a: Prepare and Implement a Historical Resources Protection Plan*
- *Mitigation Measure CR1-b: Preconstruction Documentation of Historic Resources and Structural Protection Planning*
- *Mitigation Measure CR-2: Accidental Discovery of Archaeological Resources Procedures*
- *Mitigation Measure CR-3: Preserve Human Remains if Encountered*
- *Mitigation Measure PAL-1a: Provide Paleontological Resources Training to Construction Staff*
- *Mitigation Measure PAL-1b: Conduct Preconstruction Surveys for Significant Paleontological Resources in Areas of Undetermined and High Paleontological Sensitivity*
- *Mitigation Measure PAL-1c: Perform Preconstruction Surface Salvage of Any Significant Paleontological Resources Discovered*
- *Mitigation Measure PAL-1d: Conduct Paleontological Resources Monitoring during Construction in Areas of Undetermined and High Paleontological Sensitivity, as Required*

Cumulative Impact on Biological Resources

Within the Sunol Valley, the Project could contribute considerably to significant cumulative impacts to: grassland (including upland habitat for California tiger salamander, California red-legged frog, burrowing owl, and Alameda whipsnake); riparian vegetation and the Alameda Creek channel (including habitat for resident rainbow trout/steelhead, foothill yellow-legged frog, western pond turtle, and California red-legged frog); and individual trees that could provide nesting for special-status bird and bat species. Construction discharges could affect water quality in Alameda Creek and its habitat for common and special-status species. Additionally, if barriers to steelhead migration were removed, it is possible that steelhead could eventually be present in the project work area within the Sunol Valley; the Project could contribute to a cumulative impact to steelhead, if present. Finally, if steelhead can access Pirate Creek during construction of the Project, there could be a cumulative impact to steelhead if the Project, combined with the effects of other SFPUC projects and the SMP-30 Expansion project, result in a reduction of water in Pirate Creek.

- *Mitigation Measure BIO-1a: Prepare and Implement a Groundwater Management Plan*
- *Mitigation Measure BIO-1b: Conduct Mandatory Biological-Resources Awareness Training for All Project Personnel*
- *Mitigation Measure BIO-1c: Minimize Disturbance of Riparian Habitat*
- *Mitigation Measure BIO-1d: Prevent Movement of Specific Species through the Work Areas*
- *Mitigation Measure BIO-1e: Conduct Preconstruction Surveys and Monitor Construction Activities for California Tiger Salamander, California Red-Legged Frog, and Alameda Whipsnake*
- *Mitigation Measure BIO-1f: Prepare and Implement a Vegetation Restoration Plan*
- *Mitigation Measure BIO-1g: Compensate for Permanent Loss of Habitat/Sensitive Vegetation Communities*
- *Mitigation Measure BIO-1h: Implement Measures to Avoid and Minimize Impacts on Foothill Yellow-Legged Frogs and Western Pond Turtle*
- *Mitigation Measure BIO-1i: Preconstruction Surveys for Active Burrowing Owl Burrows, and Implement CDFG Guidelines for Burrowing Owl Mitigation, if Necessary*
- *Mitigation Measure BIO-1j: Remove Trees and Shrubs during the Non-Breeding Season for Special-Status Bat and Bird Species, if Feasible (September 1–February 14) or Conduct Nesting Bird Surveys, Roosting Bat Surveys, and Establish No-Disturbance Buffers, as Appropriate*
- *Mitigation Measure BIO-1k: Conduct Preconstruction Surveys for Sensitive Bats and Implement Avoidance and Minimization Measures if Found*
- *Mitigation Measure BIO-1l: Conduct Preconstruction Surveys for Dusky-Footed Woodrat and Implement Avoidance and Minimization Measures if Found*
- *Mitigation Measure BIO-1m: Conduct Preconstruction Surveys for Callippe Silverspot Butterfly at the Sheridan Valley Work Area and Implement Avoidance and Minimization Measures, Including Construction Monitoring, if Found*
- *Mitigation Measure BIO-3: Minimize Disturbance of Waters of the United States and Waters of the State, Including Wetlands*
- *Mitigation Measure BIO-4: Design Bridges in Accordance with Guidelines for Fish Passage at Stream Crossings*
- *Mitigation Measure BIO-5: Avoid and Minimize Impacts on Native Mature Trees*

Cumulative Impact to Geology, Soils, and Seismicity

The Project would contribute considerably to a cumulative impact related to the loss of topsoil.

- *Mitigation Measure GEO-2: Salvage Topsoil*

Cumulative Impact to Hydrology and Water Quality

The Project would contribute considerably to a cumulative impact to surface water quality due to, among other things, discharges of stormwater, dewatering effluent, and tunnel drainage. The Project would also contribute considerably to a cumulative impact hydrology due to alteration of topography and an increase in impervious areas at the project site and the vicinity, resulting in downstream erosion impacts in local creeks.

- *Mitigation Measure HYD-1a: Management of Stormwater Discharges*

- *Mitigation Measure HYD-1b: Management of Dewatering Discharges*
- *Measure HYD-7b: Post Construction - Treat Stormwater Prior to Discharge – Incorporate low impact design methods*

Cumulative Impact to Hazards and Hazardous Materials

The Project would contribute considerably to a cumulative impact related to exposure of workers to hazardous materials within the proposed project and the cumulative projects.

- *Mitigation Measure HAZ-2a: Soil Testing (pre-construction)*
- *Mitigation Measure HAZ-2b: Prepare and implement a Construction Risk and Spoils Management Plan (CRSMP)*

Cumulative Impact to Noise and Vibration

The Project could contribute considerably to a cumulative impact to noise resulting from night-time traffic on Calaveras Road if more than 14 trucks per hour use Calaveras Road at night. Additionally, overlapping construction schedules of the Project and the Alameda Siphon NO. 4 Project and the San Antonio Backup Pipeline Project could result in cumulative noise and vibration impacts, to which the Project would contribute considerably. At the Vargas Work Area, the Project would contribute considerably to a cumulative vibration impact. At the Irvington Portal Work Area the Project would contribute considerably to cumulative noise and vibration impacts.

- *Mitigation Measure NOI-1a: Noise Controls - Noise and Vibration Control Plan*
- *Mitigation Measure NOI-2a: Vibration Controls - Noise and Vibration Control Plan*

Cumulative Impacts to Air Quality and Climate

The Project would contribute considerably to potentially significant cumulative construction emission impacts, including impacts related to PM₁₀, PM_{2.5} and ozone precursors.

- *Mitigation Measure AIR-1a: Reduction of Particulate Matter Emissions (BAAQMD Control Measures)*
- *Mitigation Measure AIR-1b: Reduction of Exhaust Emission (BAAQMD Control Measures)*

Cumulative Impacts to Agricultural Resources

The Project would contribute considerably to a cumulative impact to agricultural resources associated with the conversion of areas mapped Unique Farmland.

- *Mitigation Measure AGR-2: land set-aside or contribution to a local land conservancy*

IV. SIGNIFICANT IMPACTS THAT CANNOT BE AVOIDED OR REDUCED TO A LESS-THAN-SIGNIFICANT LEVEL

A. Project Impacts

Based on substantial evidence in the whole record of these proceedings, the SFPUC finds that, where feasible, changes or alterations have been required, or incorporated into, the Project to reduce the significant environmental impacts as identified in the Final EIR and listed below. The SFPUC finds that the mitigation measures in the Final EIR and described below are appropriate, and that changes have been required in, or incorporated into, the Project that, pursuant to Public Resources Code section 21002 and CEQA Guidelines section 15091, may substantially lessen, but do not avoid (i.e., reduce to less than significant levels), the potentially significant environmental effect associated with implementation of the Project. The SFPUC adopts all of the mitigation measures proposed in the Final EIR and set forth in the MMRP, attached hereto as Attachment B. The SFPUC further finds, however, for the impacts listed below, despite the implementation of mitigation measures, the effects remain significant and unavoidable. Based on the analysis contained within the Final EIR, other considerations in the record, and the standards of significance, the SFPUC finds that because some aspects of the Project could cause potentially significant impacts for which feasible mitigation measures are not available to reduce the impact to a less-than-significant level, the impacts are significant and unavoidable.

The SFPUC determines that the following significant impacts on the environment, as reflected in the Final EIR, are unavoidable, but under Public Resources Code Section 21081(a)(3) and (b), and CEQA Guidelines 15091(a)(3), 15092(b)(2)(B), and 15093, the SFPUC determines that the impacts are acceptable due to the overriding considerations described in Section VII below. This finding is supported by substantial evidence in the record of this proceeding.

Impact PAL-1: Impacts to paleontological resources (Initial tunneling from Irvington Portal)

Construction activities at the Irvington Portal work would disturb Briones Formation substrate, which is a stratigraphic unit that is highly sensitive for paleontological resources, and the Pleistocene strata, which is also highly sensitive. The project could inadvertently unearth and impact unknown (i.e., not yet recorded), buried paleontological resources in this work area, which would be a significant impact if the find is damaged when encountered and/or not appropriately handled.

- *Mitigation Measure PAL-1a: Provide Paleontological Resources Training to Construction Staff*
- *Mitigation Measure PAL-1b: Conduct Preconstruction Surveys for Significant Paleontological Resources in Areas of Undetermined and High Paleontological Sensitivity*
- *Mitigation Measure PAL-1c: Perform Preconstruction Surface Salvage of Any Significant Paleontological Resources Discovered*
- *Mitigation Measure PAL-1d: Conduct Paleontological Resources Monitoring during Construction in Areas of Undetermined and High Paleontological Sensitivity, as Required*

In most areas these mitigation measures will reduce the impact to paleontological resources near the surface to a less than significant level. However, at the Irvington Tunnel Portal, it is not feasible to monitor for paleontological resources when tunneling using a roadheader (as described in Mitigation Measure PAL-1d). Thus, it is not certain that this potential impact could be mitigated to a less-than-significant level because the roadheader excavating the first 50 feet of tunnel could pulverize the rock material and preclude inspection for resources. Therefore, with mitigation, this impact remains significant and unavoidable.

2. Water System Improvement Program Impacts

Because the Project is a component of the WSIP, it will contribute to the significant and unavoidable impacts caused by the WSIP water supply decision. These impacts were discussed in this Commission's Resolution No. 08-0200, and mitigation measures that were proposed in the Program EIR were adopted by this Commission for these impacts; however, the mitigation measures could not reduce the impacts to a less than significant level, and the impacts were determined to be significant and unavoidable. This Commission has already adopted the mitigation measures proposed in the Program EIR to reduce these impacts when it approved the WSIP in its Resolution No. 08-0200. This Commission also adopted a Mitigation Monitoring and Reporting Program as part of that approval. The findings regarding the following impacts and mitigation measures set forth in Resolution No. 08-0200 are incorporated into these findings by this reference, as though fully set forth herein. The significant and unavoidable impacts were listed in Resolution No. 08-0200 as follows:

Potentially Significant and Unavoidable WSIP Water Supply Impacts

- **Fisheries (Upper and Lower Crystal Springs Reservoir):** Effects in the Peninsula watershed on fishery resources in Crystal Springs Reservoir in San Mateo County; and
- **Growth:** Indirect growth-inducement impacts in the SFPUC service area.

Significant and Unavoidable WSIP Water Supply Impacts

- **Streamflow (Alameda Creek below Alameda Creek Diversion Dam):** Effects on stream flow in Alameda Creek between the diversion dam and the confluence with Calaveras Creek.

V. EVALUATION OF PROJECT ALTERNATIVES

This Section describes the Project as well as alternatives and the reasons for approving the Project and for rejecting the alternatives. CEQA mandates that an EIR evaluate a reasonable range of alternatives to the Project or the Project location that generally reduce or avoid potentially significant impacts of the Project. CEQA requires that every EIR also evaluate a "No Project" alternative. Alternatives provide a basis of comparison to the Project in terms of their significant impacts and their ability to meet Project objectives. This comparative analysis is used to consider reasonable, potentially feasible options for minimizing environmental consequences of the Project.

A. Reasons for Approval of the Project

The overall goals of the WSIP for the regional water system are to:

- Maintain high-quality water and a gravity-driven system
- Reduce vulnerability to earthquakes
- Increase delivery reliability
- Meet customer water supply needs through 2018
- Enhance sustainability
- Achieve a cost-effective, fully operational system

The Project contributes to achievement of these goals. In addition, the Project was designed to ensure adequate service over time and to resist damage from earthquakes. Specifically, the objectives of the Project are to:

- Within 24 hours after a major earthquake on the Calaveras fault, allow for reliable transmission of a minimum of 120 mgd of water between SFPUC facilities in the Sunol Valley and the BDPL transmission system starting in the City of Fremont.
- Within 24 hours after a major earthquake on the San Andreas or Hayward fault, allow for reliable transmission of a minimum of 229 mgd of water between SFPUC facilities in the Sunol Valley and the BDPL transmission system starting in the City of Fremont.
- Within 30 days after a major earthquake on the Calaveras fault, allow for reliable transmission of a minimum of 160 mgd of water between the Sunol Valley and the BDPL transmission system.
- Increase delivery reliability by providing operational flexibility to allow for planned shutdowns of the existing Irvington Tunnel for inspection, maintenance, and repair while providing for a maximum capacity of 320 mgd monthly average flow.
- Increase delivery reliability by allowing for a planned outage of the existing Irvington Tunnel (e.g., shutdown for maintenance) concurrent with an unplanned outage (e.g., emergency outage due to facility failure) of any of the BDPLs or San Joaquin Pipeline while delivering a maximum flow of about 246 mgd between the Sunol Valley and BDPL transmission systems during the outages.
- Continue to provide reliable transmission of high-quality water from the Sunol Valley to the BDPL transmission system through a gravity-operated system.
- Ensure that the new and existing facilities meet security requirements.

B. Alternatives Rejected and Reasons for Rejection

The Commission rejects the Alternatives set forth in the Final EIR and listed below because the Commission finds that there is substantial evidence, including evidence of economic, legal, social, technological, and other considerations described in this Section in addition to those

described in Section VI below under CEQA Guidelines 15091(a)(3), that make infeasible such Alternatives. In making these determinations, the Commission is aware that CEQA defines “feasibility” to mean “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, legal, and technological factors.” The Commission is also aware that under CEQA case law the concept of “feasibility” encompasses (i) the question of whether a particular alternative promotes the underlying goals and objectives of a project. and (ii) the question of whether an alternative is “desirable” from a policy standpoint to the extent that desirability is based on a reasonable balancing of the relevant economic, environmental, social, legal, and technological factors.

Alternative 1: No Project

Under the No Project Alternative, the existing Irvington Tunnel would remain in use and no new tunnel would be constructed nor would internal inspections and maintenance of the existing tunnel be possible. The SFPUC would continue to conduct intermittent inspection of the existing Irvington Tunnel Portals and other ancillary features and would repair the existing tunnel if it were to fail (i.e., collapse).

Under normal operating conditions (e.g., no emergency repairs), the No Project Alternative would avoid significant direct impacts associated with construction of the project, including impacts to aesthetics, cultural resources, hazardous materials, transportation, noise, air quality, biological resources, geology, hydrology and water quality, utilities, mineral resources and energy, and agricultural resources. However, under the No Project Alternative, significant repair work and environmental restoration may be required if the existing tunnel were to fail due to age and/or seismic hazards. Access to damaged areas could occur from the existing portals or, if the collapse occurs where the tunnel is less than 200 feet deep, it could be practical to excavate a 30-foot-diameter shaft to the collapsed area. A crane/hoist for the shaft and conventional mining equipment would be used under this repair scenario similar to the proposed project. The repairs could take up to two years, during which customers served by the tunnel could experience loss of water service or severely limited service, and residents proximal to where tunnel rehabilitation work would occur would be exposed to similar impacts as identified for the Proposed Project for an extended period of time. In some cases, impacts associated with catastrophic failure of the existing tunnel and subsequent repair activity could exceed the impacts associated with the proposed project, such as cultural resources, biological resources, geological hazards such as ground settlement, and noise since the repair work would likely constitute an emergency and additional nighttime work would likely occur.

Because of the likelihood of a severe seismic event in the near future, which would likely result in tunnel collapse or other catastrophic tunnel failure, the Commission rejects this alternative. The existing tunnel was constructed in the 1930’s and was intended to be maintained every 5 to 10 years. Since it has not been possible to take the existing tunnel out of service due to increasing water supply demand, it is uncertain how the tunnel would perform in a major seismic event. The U.S. Geological Survey has estimated a 62 percent probability of at least one magnitude 6.7 or greater earthquake between 2003 and 2032. The failure of the tunnel would result in the loss of potable water supply to both residential and commercial customers, resulting in major water shortages. Consequently, under this alternative the three objectives to provide water following a major earthquake would likely not be met. Shortages could require water

rationing and the importing of water until the repairs are completed. While no studies have been specifically conducted on the costs associated with failure of the existing tunnel, comparisons to studies conducted for a similar project suggest the losses could be estimated in the billions of dollars.²

Additionally, the Commission further rejects this alternative because it meets none of the SFPUC's other Project objectives and is infeasible for the following reasons. Regarding delivery reliability objectives through provision of system redundancy and operational flexibility, without a second tunnel it would not be feasible to shutdown and rehabilitate the existing tunnel. Under the No Project Alternative, the existing tunnel would continue to age without inspection, thereby increasing the chances of tunnel failure. While the Coast Range Tunnel also does not have redundancy, it is feasible to regularly shutdown and maintain that tunnel because local Alameda Watershed water treated at the Sunol Valley Water Treatment Plant can be provided westward to customers during the Hetch Hetchy outage. On the other hand, in the event of failure of the existing Irvington Tunnel, it would not be possible to transport water from either Hetch Hetchy or the local Alameda Watershed, thereby severely limiting the ability to supply customers, particularly in the East Bay because the system is not set up to transport water treated at the Harry Tracy Water Treatment Plant to East Bay customers.

Regarding security, under the No Project Alternative, the existing tunnel facilities, a critical component of the water transmission system, would continue to be vulnerable to vandalism.

Further, this alternative would not avoid the potentially significant and unavoidable impact for paleontological resources because major subsurface excavation would be expected if the tunnel were to fail and repairs were needed and, like the proposed project, a paleontologist may not be able to safely monitor excavation, similar to the Proposed Project. Because repairs would have to be implemented in a rapid manner, there may not be adequate time to prepare preconstruction paleontological surveys, which could exacerbate this impact for the No Project alternative.

This alternative would leave SFPUC water customers vulnerable to the impacts of a severe interruption of water supply.

Alternative 2: Sunol Valley Water Treatment Plant Tunnel

This alternative would include construction of: 1) a new 10-foot-diameter pipeline extending along Calaveras Road for 1.5 miles connecting the Alameda East Portal to a new Sunol Valley Portal just north of the Sunol Valley Water Treatment Plant, 2) a new 11-foot-diameter, 3.4 mile tunnel from the new Sunol Valley Portal to a new Fremont Portal east of Mission Boulevard, and 3) a new 10-foot-diameter pipeline extending 0.7 mile from the Fremont Portal to the BDPL Nos. 3 and 4 at a new Pine Valve Lot.

No new tunnel would be constructed adjacent to the existing Irvington Tunnel. Security improvements would occur at the existing Alameda West Portal and Irvington Portal. Other than security improvements at the portals (similar to the project), no construction activity would occur

² Seismic Evaluation Program Final Report, Appendix A, East Bay Municipal Utility District, April 1, 1994.

at the Alameda West Portal or Irvington Portal work areas. Spoils generation would be decreased and would likely be disposed of at the spoils placement areas in Sunol Valley.

This alternative would avoid the site-specific impacts of the Project, including impacts at the Alameda West Portal work area and at the Irvington Portal work area; however, it would create impacts similar to the Project at different geographic areas, including impacts to residential receptors at the alternative's Fremont Portal and along the pipeline. Relative to the Project, noise impacts would decrease overall and aesthetic impacts would be similar. Potential impacts to agricultural resources would be incrementally reduced under this alternative. Impacts to hydrology and water quality (groundwater), geology, soils, and seismicity, and transportation and circulation would increase. Impacts to biological resources and cultural resources would be greater than the Project before mitigation, but similar with mitigation. Like the Project, this alternative would create a significant and unavoidable impact to paleontological resources. Impacts on utilities, air quality, and mineral and energy resources would be similar to the Project.

Although this alternative would meet the SFPUC's Project objectives, the Commission rejects this alternative because it would not substantially lessen significant impacts of the proposed project. Moreover, this alternative would result in substantially more disturbance to Calaveras Road users and safety hazards due to constructing a pipeline parallel to the road, would require crossing under Alameda Creek which provides habitat for several special-status species, and the potentially significant unavoidable impact associated with initial tunneling through sensitive geological units for paleontological resources could still occur. Moreover, this alternative includes a pipeline along Calaveras Road adjacent to the Calaveras Fault making it susceptible to damage during a major seismic event, would require higher construction costs due to the additional length of pipeline and new valve lot, and would require higher operational costs and complexity due to the need to operate equipment at a new valve lot and two new portals whereas the new facilities for the Project are adjacent to and share some existing facilities.

Alternative 3: Interstate 680 Pipeline

The I-680 Pipeline Alternative would include construction of a new 7-foot-diameter, approximately 6-mile-long pipeline from the Alameda East Portal to the BDPL Nos. 3 and 4 where they cross the I-680 right-of-way. The new pipeline would essentially follow Calaveras Road and I-680. This alternative includes construction of a new pump station and electric substation on about two acres approximately one mile north of Alameda East Portal. A new Olive Valve Lot would be constructed near BDPL Nos. 3 and 4 west of Mission Boulevard.

No new tunnel would be constructed adjacent to the existing Irvington Tunnel. Security improvements would occur at the existing Alameda West Portal and Irvington Portal. The Alameda West Portal work area would not be used for long-term construction staging and materials handling. Other than security improvements at the portals (similar to the project), no construction activity would occur at the Irvington Portal work area. Spoils generation would be substantially reduced.

Impacts associated with cultural resources, regional air quality, aesthetics, noise, groundwater depletion, groundwater impacts to biological resources, farmlands, and ground surface settlements would be reduced or be similar to the project under this alternative. Impacts

associated with geology (e.g., liquefaction, slope instability, and fault rupture), traffic on I-680 and Mission Boulevard, and hazardous materials would increase under this alternative; however, these impacts could likely be reduced to a less than significant level with mitigation measures similar to the proposed project. Compared to the proposed project, direct impacts to biology would be increased because it would involve more ground disturbing activities to natural vegetation communities and require crossing several surface drainages; however, biological impacts associated with groundwater level affects would be avoided. This alternative would also avoid the potentially significant unavoidable paleontological impact of the proposed project related to initial tunneling with a roadheader at the Irvington Portal, and therefore result in an overall decrease in impacts related to cultural resources. Energy use during operation of this alternative would increase compared to the proposed project; depending on the energy source, greenhouse gas emissions could increase commensurately.

Although this alternative would meet some of the SFPUC's Project objectives related to seismic reliability, the Commission rejects this alternative because it would not meet all of the project objectives, including it would only convey up to 277 mgd monthly average flow, rather than 320 mgd, and it would not substantially lessen most of the significant impacts of the Project. Moreover, this alternative would require higher construction cost and require installation of a new approximately 17,800 horsepower pump station and electrical substation, which would substantially increase energy use during operation thereby resulting in increased greenhouse gas emissions and result in more complicated, and thus more expensive, maintenance and system operation scenarios.

Alternative 4: Adjacent Pipeline Alternative

The Adjacent Pipeline Alternative would include construction of a new 84-inch, approximately 4-mile-long pipeline from the Alameda West Portal across the Diablan Range to the Irvington Portal. The alignment of the new pipeline would essentially follow the existing Irvington Tunnel but be installed via open-cut construction just below ground surface. This alternative includes construction of a pump station and electric substation on about two acres near the Alameda West Portal. Security improvements would occur at the existing Alameda West Portal and Irvington Portal.

No new tunnel would be constructed along the existing Irvington Tunnel alignment. Spoils generation would be substantially reduced. The construction activities at the Alameda West and Irvington Portal areas would be of shorter duration.

Impacts associated with aesthetics, cultural resources, noise, criteria air pollutant emissions, localized air quality at the ranch residence, groundwater depletion, ground surface settlements, groundwater impacts to biological resources, traffic, hazardous materials, mineral resources, and agricultural resources would be reduced or be similar to the project. Impacts associated with biological resources (unrelated to groundwater) because it would involve more ground disturbing activities to natural vegetation communities and require crossing several surface drainages, and slope stability would be increased under this alternative; however, these impacts can be reduced to a less than significant level with mitigation similar to the proposed project. This alternative would avoid the potential significant unavoidable paleontological resource impact of the proposed project related to initial tunneling at the Irvington Portal, and therefore result in an

overall decrease in impacts related to cultural resources. Energy use during operation of this alternative would increase compared to the Project because of the need for pumping, and, thus, green house gas emissions would also increase under this alternative compared to the Project.

Although this alternative would meet some of the SFPUC's Project objectives, the Commission rejects this alternative because it would not meet all of the project objectives; specifically, this alternative would only convey 277 mgd monthly average flow (rather than 320 under the Project) and would require pumping during operation. Moreover, this alternative would not substantially lessen most of the significant impacts of the Project. Moreover, this alternative would require higher construction cost and require installation of a new approximately 31,000 horsepower pump station and electrical substation would substantially increase energy use during operation, thereby resulting in increased greenhouse gas emissions and result in more complicated, and thus more expensive, maintenance and system operation scenarios.

VI. STATEMENT OF OVERRIDING CONSIDERATIONS

Pursuant to CEQA section 21081 and CEQA Guideline 15093, the Commission hereby finds, after consideration of the Final EIR and the evidence in the record, that each of the specific overriding economic, legal, social, technological and other benefits of the Project as set forth below independently and collectively outweighs the significant and unavoidable impacts and is an overriding consideration warranting approval of the Project. Any one of the reasons for approval cited below is sufficient to justify approval of the Project. Thus, even if a court were to conclude that not every reason is supported by substantial evidence, the Commission will stand by its determination that each individual reason is sufficient. The substantial evidence supporting the various benefits can be found in the preceding findings, which are incorporated by reference into this Section, and in the documents found in the Record of Proceedings, as defined in Section I.

On the basis of the above findings and the substantial evidence in the whole record of this proceeding, the Commission specially finds that there are significant benefits of the Project in spite of the unavoidable significant impacts, and therefore makes this Statement of Overriding Considerations. The Commission further finds that, as part of the process of obtaining Project approval, all significant effects on the environment from implementation of the Project have been eliminated or substantially lessened where feasible. All mitigation measures proposed in the Final EIR for the proposed Project are adopted as part of this approval action. Furthermore, the Commission has determined that any remaining significant effects on the environment found to be unavoidable are acceptable due to the following specific overriding economic, technical, legal, social and other considerations.

The Project will have the following benefits:

- Within 24 hours after a major earthquake on the Calaveras fault, allow for reliable transmission of a minimum of 120 mgd of water between SFPUC facilities in the Sunol Valley and the BDPL transmission system starting in the City of Fremont.

- Within 24 hours after a major earthquake on the San Andreas or Hayward fault, allow for reliable transmission of a minimum of 229 mgd of water between SFPUC facilities in the Sunol Valley and the BDPL transmission system starting in the City of Fremont.
- Within 30 days after a major earthquake on the Calaveras fault, allow for reliable transmission of a minimum of 160 mgd of water between the Sunol Valley and the BDPL transmission system.
- Increase delivery reliability by providing operational flexibility to allow for planned shutdowns of the existing Irvington Tunnel for inspection, maintenance, and repair while providing for a maximum average demand of 323 mgd.
- Increase delivery reliability by allowing for a planned outage of the existing Irvington Tunnel (e.g., shutdown for maintenance) concurrent with an unplanned outage (e.g., emergency outage due to either facility or water quality failure) of any of the BDPLs or San Joaquin Pipeline while delivering a maximum flow of about 286 mgd between the Sunol Valley and BDPL transmission systems during the outages.
- Continue to provide reliable transmission of high-quality water from the Sunol Valley to the BDPL transmission system through a gravity-operated system.
- Ensure that the new and existing facilities meet security requirements.

In addition, the Project implements the WSIP's goals and objectives, and the Statement of Overriding Considerations from SFPUC Resolution 08-0200 is adopted and incorporated in these findings as though fully set forth. In particular, this Project helps to implement the following benefits of the WSIP:

1. Implementation of facility improvement projects will reduce vulnerability to earthquakes. Improvements are designed to meet current seismic standards. The regional water system is a critical and vulnerable link in the City's and wholesale customer's ability to survive after a major earthquake and to maintain access to critically needed water supplies. The SFPUC will be able to meet the fundamental and most pressing needs of the water system – to improve the seismic safety and reliability of the water system as a means of saving human life and property under a catastrophic earthquake scenario or even a disaster scenario not rising to the level of catastrophic. Effecting the necessary repairs and improvements to assure the water system's continued reliability, and developing it as part of a larger, integrated water security strategy, is critical to the Bay Area's economic security, competitiveness and quality of life.
2. The SFPUC will be able to deliver basic service to the three regions in the service area (East/South Bay, Peninsula, and San Francisco) within 24 hours after a major earthquake.
3. The Water system will maintain a high quality water system.
4. Improvements are designed to meet current and foreseeable future federal and state water quality requirements.

5. The WSIP will increase delivery reliability and improve the ability to maintain the water system, providing operational flexibility to allow planned maintenance shutdown of individual facilities without interrupting customer service, operational flexibility to minimize the risk of service interruption due to unplanned facility upsets or outages, and operational flexibility and system capacity to replenish local reservoirs as needed. In order to implement a feasible asset management program in the future that will provide continuous maintenance and repairs to facilities, the regional water system requires redundancy (i.e., backup) of some critical facilities necessary to meeting day-to-day customer water supply needs. Without adequate redundancy of critical facilities, the SFPUC has limited operational flexibility in the event of an emergency or a system failure, as well as constraints on conducting adequate system inspection and maintenance.

6. The WSIP will achieve a cost-effective, fully operational system, ensuring cost-effective use of funds, maintaining a gravity-driven system.

Having considered these benefits, including the benefits discussed in Section I above, the Commission finds that the benefits of the Project and the WSIP outweigh the unavoidable adverse environmental effects, and that the adverse environmental effects are therefore acceptable.